Description of document: Nuclear Regulatory Commission (NRC) Inspector Newsletters from January 1, 1996 through December 31, 2006

Requested date: 2024

Release date: 21-March-2025

Posted date: 07-April-2025

Source of document: U.S. Nuclear Regulatory Commission
Mail Stop TWFN-6 A60M
Washington, DC 20555-0001
Email: FOIA.resource@nrc.gov
FOIA.gov

NRC FORM 464 Part I
(03-13-2023)

U.S. NUCLEAR REGULATORY COMMISSION

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

FOIA or Reference Number	Response Number
FOIA-2024-000219	1

Response Type: ☐ Interim ☑ Final

Requester:

Date: 3/21/2025

Description of Requested Records:

A copy of each NRC Inspector Newsletter from January 1, 1996 through December 31, 2006.

PART I. -- INFORMATION RELEASED

☐ The NRC has made some, or all, of the requested records publicly available through one or more of the following means: (1) https://www.nrc.gov ; (2) public ADAMS, https://www.nrc.gov/reading-rm/adams.html; (3) microfiche available in the NRC Public Document Room; or the NRC Public Access Link (PAL), at https://foia.nrc-gateway.gov/app/Home.aspx.

☑ Agency records subject to the request are enclosed.

☐ Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (See Part I.D -- Comments) for a disclosure determination and direct response to you.

☐ We are continuing to process your request.

☑ See Part I.D -- Comments.

PART I.A -- FEES

AMOUNT

☐ You will be billed by NRC for the amount indicated.

☐ You will receive a refund for the amount indicated.

☐ Fees waived.

☐ Since the minimum fee threshold was not met, you will not be charged fees.

☑ Due to our delayed response, you will not be charged search and/or duplication fees that would otherwise be applicable to your request.

PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

☐ We did not locate any agency records responsive to your request. *Note*: Agencies may treat three discrete categories of law enforcement and national security records as not subject to the FOIA ("exclusions"). See 5 U.S.C. 552(c). This is a standard notification given to all requesters; it should not be taken to mean that any excluded records do, or do not, exist.

☑ We have withheld certain information pursuant to the FOIA exemptions described, and for the reasons stated, in Part II.

☐ Because this is an interim response to your request, you may not appeal at this time. We will notify you of your right to appeal any of the responses we have issued in response to your request when we issue our final determination.

☑ You may appeal this final determination within 90 calendar days of the date of this response. If you submit an appeal by mail, address it to the FOIA Officer, at U.S. Nuclear Regulatory Commission, Mail Stop T-6 A60M, Washington, D.C. 20555-0001. You may submit an appeal by email to FOIA.resource@nrc.gov. You may fax an appeal to (301) 415-5130. Please be sure to include on your submission that it is a "FOIA Appeal." You may file an appeal through the NRC Public Access Link (PAL) at https://foia.nrc-gateway.gov/app/Home.aspx.

PART I.C -- REFERENCES AND POINTS OF CONTACT

You have the right to seek assistance from the NRC's FOIA Public Liaison by submitting your inquiry at https://www.nrc.gov/reading-rm/foia/contact-foia.html, or by calling the FOIA Public Liaison at (301) 415-0717.

If we have denied your request, you have the right to seek dispute resolution services from the NRC's Public Liaison or the Office of Government Information Services (OGIS). To seek dispute resolution services from OGIS, you may email OGIS at ogis@nara.gov, send a fax to (202) 741-5789, or send a letter to: Office of Government Information Services, National Archives and Records Administration, 8601 Adelphi Road, College Park, MD 20740-6001. For additional information about OGIS, please visit the OGIS website at https://www.archives.gov/ogis.

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PART I.D -- COMMENTS

After receipt and review of your initial request, in which you requested copies of each NRC Inspector Newsletter for all years it was produced, we informed you that the Office of Nuclear Reactor Regulation (NRR), had located over 100 newsletters responsive to your request,which NRR estimated would require one year to process. In response, you agreed to narrow your request to copies of these newsletters during the years 1996 through 2006 only.

The following records are attached herein and represent all NRC Inspector Newsletters located for the identified period:

1996 - Issues 1 and 2
1997 - Issues 1 and 2
1998 - Issues 1 and 2
1999 - Issues 1 and 2
2001 - Issue 1
2003 - Issues 1 through 6
2004 - Months 1, 3, 5, 7, 9 and 11
2005 - Months 1, 3, 5, 8 and 10
2006 - Months 1, 3, 5, 8, and 10

Please see the attached NRC 464 Part II for information on the redactions applied.

Signature - Freedom of Information Act Officer or Designee

Alecia S. Sillah

Digitally signed by Alecia S. Sillah
Date: 2025.03.20 15:04:46 -04'00'

NRC FORM 464 Part II
(04-30-2024)

U.S. NUCLEAR REGULATORY COMMISSION

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

FOIA or Reference Number

FOIA-2024-000219

PART II.A -- APPLICABLE EXEMPTIONS

Records subject to the request are being withheld in their entirety or in part under the FOIA exemption(s) as indicated below (5 U.S.C. 552(b)), after taking into consideration the foreseeable harm standard when reviewing records and applying these FOIA exemptions.

- ☐ Exemption 1: The withheld information is properly classified pursuant to an Executive Order protecting national security information.
- ☐ Exemption 2: The withheld information relates solely to the internal personnel rules and practices of NRC.
- ☐ Exemption 3: The withheld information is specifically exempted from public disclosure by the statute indicated.
  - ☐ Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
  - ☐ Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
  - ☐ 41 U.S.C. 4702(b), which prohibits the disclosure of contractor proposals, except when incorporated into the contract between the agency and the submitter of the proposal.
  - ☐ Other:
- ☐ Exemption 4: The withheld information is a trade secret or confidential commercial or financial information that is being withheld for the reason(s) indicated.
  - ☐ The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.390(d)(1).
  - ☐ The information is considered to be another type of confidential business (proprietary) information.
  - ☐ The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.390(d)(2).
- ☐ Exemption 5: The withheld information consists of interagency or intraagency records that are normally privileged in civil litigation.
  - ☐ None of the information being withheld under Exemption 5/Deliberative Process Privilege is appropriate for discretionary disclosure.
  - ☐ Attorney work product privilege.
  - ☐ Attorney-client privilege.
- ☑ Exemption 6: The withheld information from a personnel, medical, or similar file, is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- ☐ Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
  - ☐ (A) Disclosure could reasonably be expected to interfere with an open enforcement proceeding.
  - ☐ (C) Disclosure could reasonably be expected to constitute an unwarranted invasion of personal privacy.
  - ☐ (D) The information consists of names and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
  - ☐ (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
  - ☐ (F) Disclosure could reasonably be expected to endanger the life or physical safety of any individual.
- ☐ Other:

PART II.B -- DENYING OFFICIALS

In accordance with 10 CFR 9.25(g) and 9.25(h) of the U.S. Nuclear Regulatory Commission regulations, the official(s) listed below have made the determination to withhold certain information responsive to your request.

DENYING OFFICIAL	TITLE/OFFICE	INFORMATION DENIED	APPELLATE OFFICIAL		
			EDO	SECY	OIG
A. Sillah	FOIA Officer	Personal opinions, photos from non-NRC events, personal details of family members	☑	☐	☐
	Select Title/Office from drop-down list		☐	☐	☐
	Select Title/Office from drop-down list		☐	☐	☐
	Select Title/Office from drop-down list		☐	☐	☐

INSPECTOR NEWSLETTER

ISSUE 04-7 January, 2004

OUR GOAL IS TO PROVIDE USEFUL AND SUCCINCT INFORMATION TO INSPECTORS

IP HISTORICAL REFERENCES

Developed by Phil Harrell, Technical Assistant, RIV

Talk about **KNOWLEDGE Management**----this is one exceptional example of how to manage knowledge. This reference guide is awesome! The document in it's entirety provides operating experience reference's to **ALL** baseline procedures. It also provides technical sub-categories within the procedures. Our advice is to save the document in Word Perfect (see Digital City website for a Word Perfect version) in order to change, delete, add and/or move references as you see appropriate. For those individuals new to the industry **IN**=Information Notice, **CR**=Circular Report, **GL**=Generic Letter, **BL**=Bulletin, **RIS** = Regulatory Issues Summary. Below is the first procedure example and the next page contains another example. **Thank you to Phil Harrell for developing this exceptional reference tool!**

71111.01- ADVERSE WEATHER PROTECTION	
BL 79-24	Frozen Lines
IN 96-36	Degradation of Cooling Water Systems Due to Icing
IN 98-02	Nuclear Power Plant Cold Weather Problems and Protective Measures

Table of Contents:

71111.14 - PERSONAL PERFORMANCE RELATED TO NONROUTINE PLANT EVOLUTIONS AND EVENTS

	~ EMERGENCY RESPONSE ~
RIS 01-16	Update of Evacuation Time Estimates
GL 89-15	Emergency Response Data System
GL 91-14	Emergency Telecommunications
GL 93-01	Emergency Response Data System Test Program
	~ GENERAL ~
CR 81-02	Performance of NRC-Licensed Individuals while on Duty
IN 86-38	Deficient Operator Actions Following Dual Function Valve Failures
IN 93-35	Insights From Common-Cause Failure Events
IN 96-69	Operator Actions Affecting Reactivity
	~ SCBAs ~
IN 97-66	Failure to Provide Special Lenses For Operators Using Respirator or SCBAs During Emer Ops
CR 79-09	Occurrences of Split or Punctured Regulator Diaphragms in Certain SCBA
	~ SYSTEMS ~
CR 81-10	Steam Voiding in the Reactor Coolant System During Decay Heat Removal Cooldown
IN 83-24	Loose Parts in The Secondary Side of SGs at Pressurized Water Reactors
IN 86-63	Loss of Safety Injection Capability
IN 86-13	Standby Liquid Control System Squib Valves Failure to Fire
IN 87-53	Auxiliary Feedwater Pump Trips Resulting from Low Suction Pressure
IN 90-79	Failures of Main Steam Isolation Check Valves Resulting in Disc Separation
IN 95-04	Excessive Cooldown and Depressurization of the RCS Following a Loss of Offsite Power
IN 96-60	Potential Common-Mode Post-Accident Failure of RHR Heat Exchangers
IN 96-36	Degradation of Cooling Water Systems Due to Icing
IN 96-27	Potential Clogging of HP Safety Injection Throttle Valves During Recirculation
IN 96-02	Inoperability of Power-Operated Relief Valves Masked by Downstream Indications

RESIDENT ROTATION SCHEDULE POSTED ON DIGITAL CITY

MOVING ON UP!

We asked a variety of managers for their advice on getting ahead. Here's what they had to say:

CHARLES CASTO

C Life choice--Make sure that your choice to move upward is consistent with the expectations of you and your family.
C Experience--Get all of it that you can while you are in the field. Much of your future career success will depend on the experiences that you have while in the field.

TROY PRUETT

C Apply for diverse and challenging assignments (volunteer to go to the most difficult sites and inspect in different technical areas).
C Work in different offices (HQ and multiple regions).
C Certify in multiple inspection areas.

WILLIAM DEAN

C Don't become overly specialized in an area such that you are too narrow in your knowledge, skills and abilities (i.e. diversify)
C Embrace challenging and unique assignments when they arise (and do them well)
C In whatever endeavors you undertake, do them professionally, communicate well both orally and in writing, and treat everyone as courteously as you would like to be treated.

DAVID LEW

C Do your job well...approach every assignment with the same energy and conviction as your very first.
C Listen well and be open to different views...leveraging the diverse contributions of others is the key in achieving what you cannot achieve alone.
C Understand the big picture...continually reflect upon the contributions and consequences of your actions in the context of that big picture.

LOREN PLISCO

- My advice to those inspectors interested in moving upwards is that they first need to decide if moving up is really what they want to do, in the long run, and to decide if they are willing to commit the time and energy that is necessary. Usually moving up means moving away from an individual's comfort zone, and learning new skills.

- If the answer is yes, the next step is to develop a plan - a plan that has some alternatives, because there is always more than one path. Talk over the plan with someone who you respect as a manager, and then work the plan with your line management. And lastly, look for opportunities to demonstrate you have the skills to move up - and use them.

KEY CONTACT TO REMEMBER:
NRR's NEW ENFORCEMENT COORDINATOR

Rani Franovich has replaced Laura Dudes as the NRR Enforcement Coordinator and Technical Assistant for Regional Interface in NRR/DIPM. Rani is the point of contact for clarification regarding which process (traditional enforcement vice ROP) is appropriate for developing and dispositioning inspection findings. She will work with NRR and the Office of Enforcement in determining a workable approach. Rani can be reached at (301) 415-1868 or rlf2@nrc.gov.

IP 71152 "PROBLEM IDENTIFICATION AND RESOLUTION (PI&R)

Region II inspectors developed lessons learned and implementation expectations for IP 71152. The intent of this document is to establish a consistent way for RII to perform the biennial PI&R "team" inspections and to capture especially effective inspection methods for future team leaders. Additionally, this document provides the RII process and approvals for selecting the 3 - 6 annual PI&R inspection samples. RII's intention is that this is a living document. The following categories are addressed in the document:

1. General
2. Biennial "Team" Inspection (71152B)
   a. Scheduling
   b. Planning
   c. Preparation
   d. Conduct of Inspection
   e. Documentation
   f. RII Management Briefing
3. Selection of Annual Samples (71152)

RII's website contains a complete copy of this document. Click on: http://r2.nrc.gov/drp/Reference/BP/BP71152.pdf

QUIRKY TIDBIT

Lois James, Reactor Operations Engineer, NRR, DIPM, IIPB, has a quirk not common among women. She lettered in Varsity Football at Georgia Institute of Technology. Two weeks after arriving on campus, Lois became an equipment manager for the Georgia Tech varsity football team and lettered in this sport for four years. In her senior season, Lois was the Head Equipment Manager and traveled with the Team to the Florida Citrus Bowl in Orlando, FL and watched Georgia Tech beat Nebraska for a share of the 1990 National Championship. With a large family, Lois' father loves to tell people that he had five sons, but his daughter had the football scholarship. For a few years after college, Lois continued her participation in football by becoming a high school and little league official.

Lois has recently joined the Inspection Program Branch. She previously served as the Resident Inspector at Indian Point 2.

SUCCESS THROUGH SAFETY: Lessons From the Shuttle Disasters

By Chuck Casto

In August, 2003, the Columbia Accident Investigation Board released their report on the Columbia's loss. The report contains many insights in creating success through safety. There are a few phrases and statements that are particularly pertinent to the nuclear industry. Those include:

- A slogan resulting from downsizing: "The Few, the Tired"
- Characterizing the shuttle as "a mature and reliable system"
- "Using past success as a justification for future flights"
- "What you don't see won't hurt you"
- "Prevention of effective communication"
- "Stifled professional differences"
- "Lack of integrated management across program elements"
- "Informal chain of command"
- "Decision-making processes that operated outside of the organization's rules"
- "Ineffective "silent safety" system"
- "Decentralized "loose federation" of risk assessment"
- "Lack of independent safety oversight"
- "Too insular"
- "Unwarranted consensus"
- "Learned attitudes"
- "Blind spots"
- "Accepted risks"
- "Normalized"
- "Rolled-up"
- "Rush to the bottom line"
- "failures of foresight"

These are just a few of the symptoms of what the report concludes is a broken safety culture. The report contains many traits and findings as well. It may be useful to review some of those to learn how we as individuals might see our role in assuring **"success through safety."**

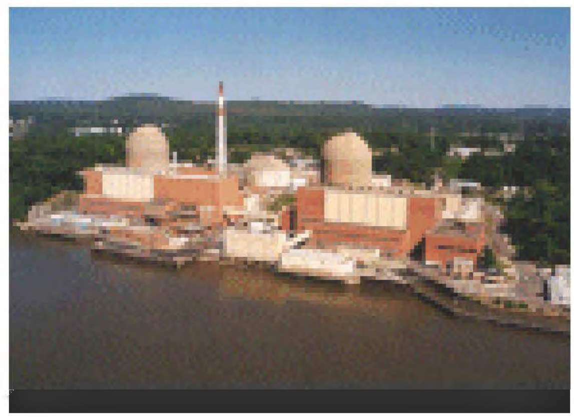
Our roles as inspectors and supervisors in the pursuit of safety issues is key to our organizational success or failure. Without a clear focus on the pursuit of safety issues we simply cannot achieve our mission. As the organization's "antennas," inspectors are closest to the information needed to make a "right" decision. We need processes and organizations that listen. This is true for our licensees as well.

We often ask ourselves why we did not identify an issue or event earlier. After years of experience we understand that big events usually don't occur without some type of signal. Usually, it is up to people to see, to hear or to understand those signals in order to take action that might prevent the big event from happening. The challenge is to filter out the lesser important signals from the really important signals. The problem is---- it's not that easy.

You, the inspector, have a heavy burden. You have the responsibility to keep your eyes open. You have to resist the urge to focus myopically and as the sports metaphor goes, “keep your head on a swivel.” Among other responsibilities, it’s your role to dig for issues where issues have never been found before, to walk-down the un-walked, to challenge the unchallenged, to verify the unverified, and to validate any un-validated assumptions. You must dig out the issues, use tools to classify them appropriately and when necessary, challenge the system.

As managers we have a duty to understand all aspects of a safety issue. Managers must be in the field, listen to staff, observe conditions themselves and keep a short distance between the process and the people who have the needed information for decision-making. Managers must give you confidence that your safety issues will be addressed.

Note: The January newsletter on Digital City contains the complete article. A copy of the entire Columbia report and “read and sign” training on this topic is also available on Digital City.



DID YOU KNOW that the Senior Resident Inspector at Monticello, **Steve Burton**, is always involved with something outside the nuclear industry. Before joining the agency he was a member of local charitable organizations, the corporate speakers bureau, and “Letters for Learners.” These activities resulted in Steve doing public speaking, sometimes for groups as large as 1000 people. During his Resident Inspector tour at ANO, Steve qualified as a part time police officer through Arkansas State Police Academy sponsored courses. At Monticello, Steve teaches firearms and hunter safety courses for the Minnesota, Department of Natural Resources. Also while in Minnesota, Steve attended St. Paul Technical College and obtained dual certification, both through the college and through the American Watchmakers Institute, as a Certified Watchmaker.

(b)(6)

INPO Operating Experience Documents

There is a new capability on the Operating Experience internal web site to access INPO's Operating Experience Documents (INPO's SEE-IN Program). Check it out by clicking on the operating experience website at: http://nrr10.nrc.gov/rorp/inpo/see-in-search-login.cfm. We have to be careful that these documents are kept internal so a password is required. To obtain a password for this application, please email Maurice Heath (MLH5) or Brett Rini (BAR3) of the Operating Experience Section. Please provide your name, office, division, and email address in your request.

The objective of INPO's SEE-IN Program is to improve nuclear power plant safety and reliability by allowing each plant to learn from the operating experience of the world community of nuclear plants. The goal of the SEE-IN Program is to identify event precursors and report them to all INPO members and participants so corrective actions can be taken to prevent events from recurring at nuclear power stations. The events screened significant are disseminated to the industry in INPO's SEE-IN documents. A listing of types of INPO's SEE-IN Documents are provided below with a brief description:

SOERs: Based on operating experiences for a significant problem area important to safety or reliability. For problems requiring the most focused utility attention. INPO follows up on utility actions in response to SOER recommendations during evaluations

SERs: For significant events and lessons-learned identified through event screen process. Identifies plant and brief description of event. Potential generic implications addressed. Issued for utility review and implementation. INPO does not follow-up on the specific actions taken by each utility.

SENs: Brief descriptions of one or more significant events, but usually do not include comments or recommended corrective actions. Issued for information and utility use as desired. Issued shortly after an event, so details may not be available. Further information provided in a follow-up SEE-IN report. SEN-Recurring notifies industry of recurrence of significant events similar to those previously documented. Issued periodically with brief summaries of events and references to previously issued SEE-IN documents that address corrective actions.

O&MRs: Information that may be of special interest to the industry but that is not significant as determined by the INPO screening process.

Contact: Jerry Dozier, Reactor System Engineer
Operating Experience Section

International Operating Experience

SERIOUS FUEL POOL ACCIDENT AT PAKS

On April 10, 2003, at a Hungarian reactor called "PAKS", 30 PWR fuel assemblies were being chemically cleaned in a special closed tank immersed in the reactor cavity with closed loop cooling provided by redundant pumps. Apparently, during post-cleaning neutralization of the cleaning solution with only one cooling pump in operation, cooling became insufficient and a steam bubble formed under the lid of the closed cleaning tank. Operators didn't react to the anomalous indication of decreasing tank outlet temperature, apparently caused by cooling flow diversion around the fuel assemblies. Once the steam bubble formed and became superheated, fuel damage began to occur and a zirc-water reaction exacerbated the extent of fuel damage.

Initially, in hindsight this event suggests that the technical and regulatory attention was mostly paid to the cleaning process itself and that not enough focus was given to assurance of continued fuel cooling during each phase or mode of operation. This event has potential safety implications for any closed loop spent fuel cleaning process. In addition, human factors, occupational rad health consequences, and EP measures are discussed and may be of interest to some of you. Further information on this event is available at: http://nrr10.nrc.gov/rorp/haeapresentation.pdf.

The IAEA report on the event can be found at: http://www.atomeromu.hu/hirek-e/iaea em2003.pdf

OE FINAL REPORT

The Reactor Operating Experience Task Force has issued its Final Report providing recommendations and conclusions regarding the NRC's operating experience program. The report is available in ADAMS (ML033350063) or at the following web site:

http://nrr10.nrc.gov/rop-digital-city/oe-taskforce-rpt.pdf

NEWSLETTER FEEDBACK

We are excited about featuring our new toy--the Talk Back Button. Give us **YOUR** quirky tidbits, and tell us about your accomplishments. By the way, Phil Harrell and Pat Louden, two of our editorial board members, collected feedback from inspectors in their regions regarding the newsletter. The feedback indicated that you want more real life/real solutions articles, more operating experience, and many of you prefer the .pdf format of the newsletter. Tell us what you want to see in the newsletter–WE WANT TO HEAR FROM YOU!

INSPECTOR HAPPENINGS

Region I

Christopher Holt-Reactor Inspector/DRS
Harry Balian-Operations Engineer/DRS
Michelle Snell-Nuc.Sfty Intern/DRS
Karl Diederich-Reactor Inspector/DRS
Martha Barillas- to NRR/DSSA
Jeffrey Herrera-RI @Oyster Creek

Region II

Mark Chitty OL/DRS
G.Wilson/OL/DRS
Norm Garrett-SRI@Surry
Shakur Walker-RI@McGuire
Kathy Weaver-SRI@Turkey Point
Rodney Fanner-RI@Farley
Dan Arnette-RI@Surry

Region III

Mina Sheikh-RI@Dresden
Doug Tharp-RI@Clinton
Mark Franke-New Reactor Engineer
Caroline Acosta-Nuclear Sfty Intern/DRS

Region IV

Geoff Miller-RI@ Grand Gulf
John Dixon- RI @ANO
Ron Cohen-PE@RIV
Travis Rhoades- RI@ Wolf Creek
Jack Keeton-to retire in Dec. 2003

RIVDRS - Reorganization effective 12/28/03. For information on the reorganization go to Digital City under Jan. newsletter.

INSPECTOR NEWSLETTER

Issue 04-2 March, 2004

Our goal is to provide useful and succinct information to inspectors.

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved Reactor oversight Process guidance is promulgated in NRC's Inspection Manual.

COMMUNICATING OPERATING EXPERIENCE

Is there just not enough time in your day to review all of the reports associated with Operating Experience but you still need to be informed of certain types of emergent issues? Well, we may have found something that could save you time. The Operating Experience Section (DIPM/IROB/OES) is offering a simple, innovative approach to communicate operating experience information that can be useful and timely. You can now subscribe, as an email user, to one or more of the following groupings for information on: Chemistry/Chemical Engineering, EDGs, Electrical Power Systems, Materials/Aging, RCS Leakage/Barrier Integrity, Reactor Vessel/Piping/RCPB Leakage, Emergency Preparedness, Health Physics, Extended Power Uprates, Fire Protection, and Steam Generators. This subscription is not intended to replace the Event Notifications, Morning Reports, Part 21s, Power Reactor Status Reports or Preliminary Notifications posted to the web, but is intended to keep you informed of agency activities that initiate from daily events or operating experience. Here's how this works---when emergent issues are presented, they will be reviewed and sent to one or more of these topical groups. OES plans to eventually create several automated List Serves that will have available the groups mentioned above as well as additional groups as the need becomes identified. In the interim you may subscribe to multiple groups as desired. Please contact Erin Hunter via e-mail (EDH) or phone at 301-415-1161 to sign up. Please be specific with respect to which groups you desire to subscribe to. This simple effort demonstrates the Operating Experiences Section's objective to target the right information to the right people at the right time.

ROP FEEDBACK SYSTEM

Finally, IIPB is overhauling the current ROP feedback process. We got your messages, and we hear you -- "response time slow", "not web-based", and "no search capability". Grand things are in the works! There's still time to submit further suggestions and ideas. Your suggestions/comments can be directed to Paul Bonnett, IIPB at FPB@nrc.gov.

FYI–A list of procedure leads are attached to this newsletter

REVIEW OF REGION II DRS WEB-SITE

This is part of our continuing review of regional web-sites to identify items that may be of interest to inspectors. We found some pretty innovative stuff such as Focus Topics and training videos on Instrument Training and Packaging and Transportation of Radioactive Materials. The front page of the web-site displays an interactive spotlight on "Reasons for Common Cause Failure". Some of the "Focus Topics" are: Make "Observing Work" work for you, What is Material Condition and Why Does it Matter?, and Independent Verification Methodology. Below is a summary of "Breaking Down the Wall of Assumptions. Checkout the web-site!

BREAKING DOWN THE WALL OF ASSUMPTIONS

It's human nature to sometimes draw incorrect assumptions/conclusions. Incorrect assumptions/conclusions are usually based upon perceptions of recent or past experience and not independently verified. Other times we draw unsupported conclusions based upon some of the facts or facts that seem to fit the situation. When we perform inspection activities we often find assumptions/conclusions that are valid based on the existing data. What is difficult is deciding when the assumptions are accurate and which assumptions should be independently verified. The text selected identifies when inaccurate assumptions might have occurred. The entire Focus Topic adds what barriers/tools an inspector can use to determine which assumptions to verify and some of the tools that you can use to conduct an independent verification of assumptions.

HOW TO RECOGNIZE WHEN INVALID ASSUMPTIONS/CONCLUSIONS MIGHT BE PRESENT:

- A worker or supervisor uses qualifying statements regarding a decision/conclusion preceded by statements such as "I think……", "I believe……", "I"m pretty sure that…….", "It is probably....", "It may....".
- Analysis that relies on the "unrocked boat" analogy, i.e., "we did this before and nothing happened," or "it"s happened before without causing a major problem."
- If you review an analysis that has a fascination over one piece of evidence. Evidence that is seemingly too clear to misperceive, too hard to deny that causes someone to discount the contradictory facts.
- When workers are conducting a first time evolution or an infrequent task — Unfamiliarity with the evolution may likely lead to assumptions regarding the validity of the component/system response.
- When workers are under time pressure — When under time pressure, workers are less likely to stop and collaborate or exercise other good questioning attitude techniques to resolve the assumption due to the perceived or actual need to complete the task expeditiously.
- When unexpected conditions occur — Workers, particularly newly qualified workers, may likely make assumptions regarding the validity of an unexpected condition, particularly if other workers/supervisors are not considered available or receptive to questioning. Or if the supervisor does not encourage or reward questioning attitudes.
- Sometimes there will be a lack of knowledge of all the facts of a situation — An incomplete understanding of a situation will likely result and assumptions made due to lack of knowledge regarding the situation.

A healthy questioning attitude has to overcome the temptation to rationalize away our "something's not right" gut-feelings

REAL PROBLEMS/REAL SOLUTIONS

Failure to Identify Conditions for Frazil Ice

While performing procedure 71111.01, Adverse Weather Protection, the inspectors observed that according to the Davis Besse Seasonal Plant Preparation Checklist, the conditions for icing of the Intake Crib existed. Specifically these conditions were:

- lake temperature near freezing point
- lake level low in the range of 569-570 feet
- windy conditions with low air temperatures
- no ice cap formed on the lake.

The Davis-Besse procedure stated that by November 1st, arrangements should be made to obtain a high capacity trash pump, suction and discharge piping necessary to support pump operations and that the equipment be stored in a suitable location for future use. The purpose of the high capacity pump is to provide the ability to pump water from the lake to the intake Forebay if required. Documentation existed that a call had been made to the Maintenance Services Department to begin the process to obtain the pump and associated piping on November 5th, however, the pump was not yet available.
Upon observing decreasing Forebay level on January 6th, the resident inspectors questioned the staff as to whether they were monitoring Forebay level and the possible existence of frazil ice conditions. As a direct result of the inspectors' questions, the licensee determined that the conditions for possible frazil ice formation in the intake crib existed and that no preparations for staging of the pump and hoses had been arranged. The licensee entered the issue into their corrective action program and arrangements were made to have the high capacity pump and hoses staged at the intake Forebay dike on January 7th.
This observation was timely and is best demonstrated by the licensee's determination that there was blockage of the intake flow, presumably due to frazil ice formation on the intake crib, from January 7-8. Licensee investigation regarding this issue is continuing.

This finding illustrates the importance of licensees appropriately staging seasonal mitigating equipment important to plant safety in a timely manner, and a questioning attitude by inspectors.

Contact: Monica Salter-Williams, Davis Besse, NPP

For further information on this topic go to the ROP web-site under March, 2004, Inspector Newsletter. Posted are slides from an intake structure blockage frazil ice event that occurred at Palisades in February 2003.Also, at this site are slides on frazil ice blockage of intake trash racks provided by the Army Corp of Engineers.

Frazil ice on screens raised from water

REAL PROBLEMS/REAL SOLUTIONS

Timely Corrective Actions

While conducting daily screening of condition reports as required by IP 71152, Problem Identification and Resolution, inspectors reviewed the October 22 failure of 1A MDAFW Pump to Steam Generator 4 Discharge Control Valve (DCV). The failure involved separation of the valve's pilot plug assembly from the valve stem due to the failure of a cotter pin designed to secure the pilot plug assembly retaining nut to the stem. Without the cotter pin, the retaining nut unscrewed from the stem allowing the pilot plug spacer, washer, and retaining nut to separate and become lodged against the downstream flow orifice, resulting in significant AFW flow reduction to the steam generator. This was one of sixteen identical valves. An action item was initiated to inspect the remaining MDAFW DCVs during the upcoming refueling outages.

Inspectors were concerned that the licensee had not adequately justified the continued operability of the AFW DCVs that had not been inspected. After considerable questioning by the inspector (**persistence/questioning attitude**), the Unit 1 MDAFW valves were disassembled and inspected. The cotter pins on both valves were found missing. Movement of the retaining nuts was being restricted by raised metal on the stem threads which was apparently created by vibration of the cotter pins prior to their failure. Based on this condition, the licensee concluded that the Unit 2 AFW DCVs were operable, effectively taking credit for damage to the valve stem caused by the cotter pin. On December 23, the inspectors reviewed the licensee's completed operability evaluation and raised additional questions regarding the licensee's assumptions and justifications (**verify operability/validate assumptions**). The result was the licensee decided to accelerate their inspection schedule for the remaining AFW DCVs. This is a good example of an inspector pushing an issue that is not well supported by the licensee's analysis.

For more information on this issue, contact John Zeiler, Vogtle SRI.

INSPECTION PROCEDURE KING RETIRES

Gerald (Jerry) Klingler is leaving the NRC after 32 years of service. Jerry is IIPB's expert on IP's. All change notices and revisions have been processed by Jerry. Jerry graduated from the University of Montana in 1955 and immediately began working for GE until he was hired by the AEC in 1972. Most people don't know this but Jerry may be the strongest man in IIPB. He is into weight lifting and can bench press up to 85 lbs. and curl up to 45 lbs. He ropes most of our new members into joining him at the gym and after several of his two hour workout sessions they drop like flies. An anonymous former RII inspector (½ Jerry's age) and another IIPB staffer couldn't handle it--they dropped out after begging Jerry to make the sessions shorter. Jerry's longtime workout partner is Peter Koltay, IIPB. Jerry's last day is April 2nd---He will be truly missed!

INSPECTOR HAPPENINGS

Region I

Jonathan Lilliendahl- Reactor Inspector, DRS
Geoffrey Ottenberg- Nuc.Sfty Intern, DRP
David Lew- DRP to SES/RES
Jonathan Pelchat-HP to PM/RII
Gerald Wilson-to Ops.Engin/DRS/RII
Paul Bonnett-DRM to HQ/IIPB

Region II

Mike Cain-New PE/DRP
Mark Speck-New PE/DRP
Jim Hickey-New PE/DRP
Eric Riggs-RI/Oconee

Region III

Paul Krohn- Pt Beach SRI on a rotation to EDO's Office
Mike Morris- Acting SRI @ Pt Beach
Doug Tharp-new RI @ Clinton

Region IV

John Kramer-SRI to HQ/OES
Nick Taylor-New Reactor Engineer
Tony Brown-New Reactor Engineer

RYAN TAYLOR

Ryan Taylor a Region II Nuclear Safety Intern, was recognized for his identification and diligent follow-up to a performance deficiency associated with a licensee's corrective action program. Ryan identified failures by licensee personnel to document several lubrication oil sample results from an auxiliary feedwater pump, which had unacceptable levels of particulate. Ryan determined that the licensee was unaware of the cause of the particulate, had made un-validated assumptions as to the source, and had not planned adequate action to address and resolve the deficiency. Ryan's performance exemplifies the agency's value of excellence and integrity.

For this article Ryan responded to some questions in an effort to share his experience.

What motivated you to pursue this effort?

In Region II Nuclear Safety interns are encouraged by senior inspectors and management to not only use inspection time for training but also to apply knowledge and skills gained through the training process to actual inspection. The team leader for this inspection was Peter (Kim) VanDoorn. Kim gave me various tasks to accomplish during the inspection and advice on what type of issues to look for. He allowed me the opportunity to review and interview licensee personnel on my own. As a result, I was able to use an inquisitive attitude to learn from and contribute to the inspection effort.

Any informal training that gave basis for questioning attitude?

Much of the questioning attitude that I have developed has come from watching the interactions between senior inspectors and licensees. I also approach each inspection as an opportunity to learn something new. If I did not have a questioning attitude, I do not feel as though I would learn as much.

Lessons Learned?

I have learned that one of the keys to effective inspection is the ability to decipher information and to continue to ask questions until an issue is completely understood.

Ryan graduated from Florida A&M with a B.S. degree in Mechanical Engineering. He began working at the NRC in the summer of 2001 as a summer hire. He was hired full-time in May 2003. Way to go--Ryan!

DID YOU KNOW THAT........

Andy Sabisch, RI, Catawba, is a treasure hunter and avid civil war history buff. He has been hunting treasures with a metal detector since he was 10 years old. Using various metal detectors he has found over 200,000 coins and numerous rings, relics, bottles, and treasures, including Civil War and Revolutionary War artifacts. These artifacts cover a wide spectrum and include rifle & pistol bullets, shell fragments, cannon balls, bayonets, cartridge box and belt plates, and even medical bullets which were given to wounded soldiers instead of anesthetic in the field (that is where the expression "bite the bullet" came from). While he has found many coins, his oldest coins were found in Spain three years ago when he and his family had the opportunity to search a Roman town. The items recovered at that site dated back more than 2,000 years and included coins, several tools and a bronze ring! He has also searched sites throughout Europe, Africa, and several sites in England dating back to the 1400's and 1500's. One of the most exciting things he has come across while doing a search was an undiscovered Confederate campsite in southern Virginia. Since he is a certified scuba diver he hunts for treasures underwater as well as on land. One of his finds was mentioned in USA Today--- a high school class ring found under two feet of mud on the bottom of Lake Pontchartrain. The ring contained two initials and although it took a while, Andy eventually tracked down the owner. The ring had been lost for 23 years on the night before high school graduation. Glancing at the numerous articles written about Andy what stands out big time is his efforts in returning and donating finds. He has returned numerous items, in some cases working with insurance companies. Andy has published more than 1500 articles on metal detecting and diving since the late 70's. He has also authored 7 books on the hobby as well. Andy has worked at Three Mile Island, Waterford, Salem, Institute of Nuclear Power Operations and Susquehanna. He began his career with the NRC/RII in June of 2003.

LOST IN TRANSLATION

Nourishing Pump? Feedwater Pump? Same thing? Yes, it's the same thing---this is what Roger Reyes, RI, Crystal River, discovered when he observed an inspection conducted by the Consejo De Seguridad Nuclear (CSN) in Spain. Although fluent in Spanish, Roger found that translating nuclear terms from Spanish to English was a different story. Roger traveled to Spain in January, 2004, to observe and provide feedback to the CSN while they were conducting a two week team inspection. The meetings were conducted in Spanish. Here's a summary from Roger's trip report:

> CSN is in the early stages of developing a risk-informed, performance-based inspection program similar to the NRC reactor oversight program (ROP). A pilot inspection was performed using NRC inspection procedure 71111-21, Safety System Design and Performance Capability. NRC provided feedback on assessment of findings using the significant determination process (SDP). Challenges during the inspection included inspectors transitioning to risk informed inspection verses compliance based, and working with the licensee's corrective action programs, which are different than those in the USA. CSN is planning five additional inspections using this NRC inspection procedure.

The Office of International Programs forwards requests for International Atomic Energy Agency (IAEA) mission related activities to the Office of the Executive Director (EDO). The EDO works with your regional office in selecting participants. If interested, you should contact your branch chief. For a complete copy of the trip report go to Digital City/March Inspector newsletter.

MANUAL CHAPTER	TITLE	LEAD REVIEWER
IMC-0040	Revision to Inspection Manual Chapters	M. Maley
IMC-0305	Operating Reactor Assessment Program	R.Pascarelli
IMC-0306	IT Support for Operating Reactors	L.Turner
IMC-0307	Self-Assessment Program	R.Frahm
IMC-0308	ROP Basis Document	L.Turner
IMC-0350	Oversight ...in Extended Shutdown	R.Frahm
IMC-0608	Performance Indicator Program	D.Hickman
IMC-0609	Significance Determination Process	P.Koltay
IMC-0612	Power Reactor Inspector Reports	M. Maley
IMC-0801	ROP Feedback Program	P. Bonnett
IMC-1245	Inspector Qualification	L.James
IMC-2501	Early Site Permit	T.Foley
IMC-2515	LWR Inspection Program-Operations Phase	J.Isom
IMC-2515	Appendix A, Baseline Inspection Program	J.Isom
IMC-2515	Appendix B, Supplemental Inspection Program	J.Jacobson
IMC-2515	Appendix C, Special Inspections	D.Norkin
IMC-2515	Appendix D, Plant Status	J.Isom
IMC-2509	Brown's Ferry Unit 1, Project Inspection Program	E.Kleeh
IMC-Part 9900	Technical Guidance	R.Mathew
IP	**TITLE**	**LEAD**
71114	Emergency Preparedness	P. Bonnett/R.Kahler
71121	Occupational Radiation Safety	R.Pederson, IOLB
71122	Public Radiation Safety	S.Klementowicz, IOLB
71130	Physical Security	R. Pascarelli
71150	Discrepant or Unreported Performance Indicator Data	A. Barker
71151	PI Verification	D. Wrona
71152	Identification and Resolution of Problems	J. Jacobson
71153	Event Follow-up	D.Norkin
93800	Augmented Inspection Team	D.Norkin
93812	Special Inspection	D.Norkin
95001	Inspection for One or Two White Inputs in a Strategic Performance Area	J.Jacobson
95002	Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area	J. Jacobson

95003	Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input	J.Jacobson
IP 71111	TITLE	LEAD
01	Adverse Weather Protection	D.Merzke
02	Evaluations of Changes, Tests, or Experiments	R.Mathew
03	Reserved	
04	Equipment Alignment	D.Merzke
05	Fire Protection	P.Koltay
06	Flood Protection Measures	D.Merzke
07	Heat Sink Performance	R.Mathew
08	Inservice Inspections	R.Mathew
09	Reserved	
10	Reserved	
11	Licensed Operator Requalification Program	P. Bonnett/R.Pelton
12	Maintenance Rule Implementation	R.Mathew
13	Maintenance Rule Risk Assessment and Emergent Work Control	R.Mathew
14	Personnel Performance During Non-routine Plant Evolutions and Events	P. Bonnett
15	Operability Evaluations	A .Barker
16	Operator Workarounds	P. Bonnett
17	Permanent Plant Modifications	D.Norkin
18	Reserved	
19	Post-Maintenance Testing	D.Merzke
20	Refueling and Outage Activities	D.Merzke
21	Safety System Design and Performance Capability	D.Norkin
22	Surveillance Testing	D.Merzke
23	Temporary Plant Modifications	R.Mathew

INSPECTOR NEWSLETTER

Issue 04-0? May, 2004

Our goal is to provide useful and succinct information to inspectors

Approved Reactor Oversight Process guidance is promulgated in NRC's Inspection Manual

Operating Experience Initiative

A lot of you signed up for OE's e-mail subscription. For those of you that missed the last newsletter you can subscribe, as an email user, to groupings on a variety of topics. For more information, see the March, 2004, newsletter on ROPs web-site.

REGION II DRP WEB-SITE

This is the last of our regional web-site reviews. **For Inspectors**---You would be crazy not to check out the **Inspector Support** link---This link is organized by procedure with links to Value Added Forms (VAFs) and Best Practices--both of which contain valuable information. See the next page for a view of what this link has to offer. **New hires** would be wise to check out the section on Qualification Tips which provides guidance and links to everything you need for IMC-1245 Qualification. The Reference Materials link is well organized and provides links to sites that will help you big time! The DRP News link will tell you lots about DRP but most of you may be interested in "People News". You can check out who is going where and what sites may be available.

For Everyone---The Division Matrix is handy and the Site link provides detailed information about lodging and site specific information.

For Managers---Look at DRP Peer Review of Inspection Reports and Weekly Branch Chief Reports.

INSPECTOR HAPPENINGS

Region I

Andrew Rosebrook-new hire-Reactor Inspector
Thomas Hipschman-to SRI@Indian Point 3

Region II

Mike Pribish - PE, DRS
Jim Canady - to NRR (no date)

Region III

Pat Higgins -RI@ Kewaunee
Adam Wichman - Summer Intern in DRP
Margaret Sullivan - Summer Intern DRP
Bob Daley - Reac. Inspec. To Sr. Reac. Inspec
Terry Madeda -Sfgds Inspec.. To Sr.Sfgds. Inpec.

Region IV

Troy Pruett- Br.Chief DRS to Br. Chief, D, DRP
Elmo Collins-to Hdqts as head of Yucca Mountain Project
Mark Schaeffer- to the IAEA in Vienna
Zachery Dunham-RI to SRI @ CGS
Mike Shannon- to Br. Chief, Plant Support Br.
Tony Brown -New Reactor Engineer
Charles Stancil–to DRP

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	BASELINE INSPECTION PROCEDURES (IPs) ASSIGNED TO DIVISION OF REACTOR PROJECTS				
IP No.	**IP Title**		**VAFs**	**Best Practices**	**IP References**
PS	***Plant Status (Activity Code)***		%v	2515/150	
2515/150	***Reactor Pressure Vessel Head and Vessel Head Penetration Nozzles***			%v	
2515/152	***Reactor Pressure Vessel Lower Head Penetration Nozzles***			%v	
7111101	Adverse Weather Protection		%v		
7111104Q	Equipment Alignment				
7111104S					
7111105A	Fire Protection		%v		
7111105Q					
7111106	Flood Protection Measures			%v	
7111107A	Heat Sink Performance				
7111111Q	Licensed Operator Requalification				
7111112Q	Maintenance Rule Implementation			%v	
7111113	Maintenance Risk Assessments & Emergent Work Control			%v	
7111114	Personnel Performance Related to Non-Routine Plant Evolutions/Events				
7111115	Operability Evaluations			%v	
7111116	Operator Work-Arounds (WAs)				
7111117A	Permanent Plant Modifications				
7111119	Post-Maintenance Testing				
7111120B	Refueling & Outage Activities	Refueling	%v	%v	
		Non-refueling			
7111122	Surveillance Testing			%v	
7111123	Temporary Plant Modifications				
7111401	Exercise Evaluation				
7111406	Drill Evaluation				
71151	Performance Indicator Verification				
71152	PI&R (ID & Resolution of Problems)		%v	%v	
71153	Event Follow-up				

Technical Specification "Myths"

There are a number of issues which periodically arise which we call "Technical Specification Myths." We have long ago made formal, written interpretations and yet, we seem to periodically need to reaffirm the interpretation for both licensees and staff. What follows is one (the others will be in subsequent newsletters) of a series of Technical Specification Myths regarding interpreting Limiting Condition for Operation (LCO) 3.0.3. Based on the discussion provided, decide if the LCO 3.0.3 interpretation is either True or False. After you're finished go to the "Myth Buster" to understand exactly what is required for compliance with LCO 3.0.3.

Myth

To understand this "myth", one must understand the structure of LCO 3.0.3. The current version in the Standard Technical Specifications (TS) for PWRs is shown in part below.

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

a. MODE 3 within 7 hours,
b. MODE 4 within 13 hours, and
c. MODE 5 within 37 hours.

True or False. TS compliance is only assured in reference to the 1 hour requirement if some specific action is taken within one hour. Control rods must start moving into the core at 60 minutes or a power reduction must be initiated. Any very small power reduction at one hour will assure compliance.

Myth Buster: One incorrect view that continues to be perpetuated is that the reference to 1 hour requires some specific action to be performed within one hour. The most common "myth" is that control rods must start in at 60 minutes or that a power reduction must be initiated. A manifestation of this "myth" is that a very small power reduction at one hour will also assure compliance. This is a misguided attempt at compliance. In reality, there are no such requirements, as has been documented in a number of places.

Pre-standard TS had a requirement to use the one hour time period for "preparing the plant for an orderly shutdown." In TIA 92-08, we said that this requirement is sufficiently subjective so as to be unenforceable, and noted that the Standard TS was changed. In the Standard TS as shown above, we attempted to eliminate this ambiguity by focusing the one hour on getting ready to reach the lower modes in the specified time frames. One needs also to focus on the Standard TS Bases and what the bases say, not what the bases don't say. The bases to the Standard TS say that this one hour is to prepare to change modes, nothing more. The Standard TS emphasize that the point of the requirement is to reach the lower modes in the time limits in a "controlled and orderly manner." Licensees need to start inserting control rods at whatever time it takes to be in Mode 3 in a "controlled and orderly manner" in the subsequent six hours. This is the only correct interpretation of the LOC 3.0.3 requirement - period.

Point of Contact: Carl Schulten, Technical Specification Section, at CSS1@nrc.gov

REAL PROBLEMS/ REAL SOLUTIONS

Inadequate EDG Fuel Oil Capacity

The inspectors identified an issue related to the failure to maintain the design basis fuel oil (FO) storage requirements and gained insights in the effectiveness of the licensee's corrective action process. This failure affected the ability to provide sufficient FO to each EDG for 7 days of continuous operations following a loss of offsite power and a design basis accident.

The licensee initiated a corrective action report (CR) for a setpoint change that affected the run times for the cooling tower fans during post-accident conditions that was not reflected in the FO consumption analysis, resulting in an additional usage of 135 gal. At the time of discovery, there was a 285 gal margin - the reduction lowered the margin to 150 gal. Later, it was discovered that the running horsepower for the Low Pressure Safety Injection (LPSI) pump was underestimated in the consumption analysis, which resulted in an additional usage of 147 gal - reducing the margin to 3 gal. An operability evaluation determined the 3 gallon margin in each FO storage tank met the 7-day inventory requirement; therefore, the EDGs remained operable. The inspectors questioned the evaluation and reviewed the calculation that had identified only a 3 gal margin **(questioning attitude, verify)**. They noted the FO storage tank volume calculation failed to consider the volume of internal structures, which were found to be of substantial significance (>0.5% of total volume) **(attention to detail)**. The licensee contacted the tank manufacturer and determined that the internal structure resulted in a loss of 70 gal.

Subsequently, the licensee identified additional inconsistencies with the analysis, resulting in an additional 1957 gal consumption. The inconsistencies were post-accident core spray (CS) design flow (65 gal consumption), brake horsepower for the HPSI pumps was underestimated (276 gal consumption) , and the analysis assumed LPSI would replace HPSI and CS after 4 days post-LOCA (1616 gal consumption).

The original CR was closed by stating the calculations had been revised and found acceptable. The inspectors questioned closing the CR and the licensee determined that the CR had been inappropriately closed, as the revised calculations did not include the discrepancy for the 1616 gal consumption. The licensee initiated a new CR for the failure to adequately revise the consumption analysis, which also administratively raised the technical specification (TS) minimum allowable volume. The inspectors also identified that the licensee used a 4.9 gpm consumption rate instead of the 5.13 gpm specified in calculations as a basis for the operability evaluation. After review, the licensee determined that more rigor was needed to use the 4.9 gpm value and withdrew it from their operability evaluation by increasing the required volume in the storage tank.

For additional information contact: Michael Hay, SRI, Waterford NPP

TRAINING TAC NUMBERS and Quality of Life Issues-How so?

This is a reminder to use the correct TAC numbers below for training:

TAC ZT0000 is for Training and Developmental Assignments
TAC ZT0002 is for IMC-1245 Qualification and Post Qualification Training

WHY IS THIS IMPORTANT: For 2 reasons, 1) it's the correct way and 2) we need accurate information for inspector metrics PR 7 - PR-10 (below) as defined in IMC-0307. These metrics were developed to look at quality of life issues for inspectors and to determine, to the best of our ability, if the change to the N policy had an effect on training and rotational assignments at multi-unit sites.

PR-7 **Non-IMC 1245 Training Time Ratio for Resident and Senior Resident Inspectors**
PR-9 **Non-IMC 1245 Training Time Ratio for Region-Based Inspectors**

PR-8 **Rotational Opportunities Ratio for Resident Inspectors**
PR-10 **Rotational Opportunities Ratio for Region-Based Inspectors**

Information on this data will be reported in the 2004 SECY Paper on "Reactor Oversight Process Self-Assessment for Calendar Year 2004."

INSPECTOR DEMOGRAPHICS

The Reactor Oversight Process Self-Assessment for Calendar Year 2003 (SECY04-0053) paper was finalized on April, 6, 2004. Included in that paper is attachment 7 which discusses inspector demographics (see metrics PR-1 -PR-6 listed below). 2003 demographics were dramatically different from previous years in that 29 new inspectors entered the program as resident inspectors. This is almost a 50% increase from previous years. Because of this, we provided a more complete analysis in the paper. The Commission briefing on this paper is scheduled for May 4th--you might want to tune in to hear what questions the Commissioners have regarding our program. Go to ROP's digital city web-site for the SECY paper.

PR-1 **NRC Time for Resident Inspectors**
PR-2 **Total Time as Resident Inspector**
PR-3 **Qualified Total Resident Time**
PR-4 **Resident Inspector's Current Site Time**
PR-5 **Relevant Non-NRC Experience of Resident Inspectors**
PR-6 **Site Gapping Metric** -Note: this metric replaced the Site Coverage Metric and will be reported in the 2004 SECY paper.

OPERATING EXPERIENCE CORNER

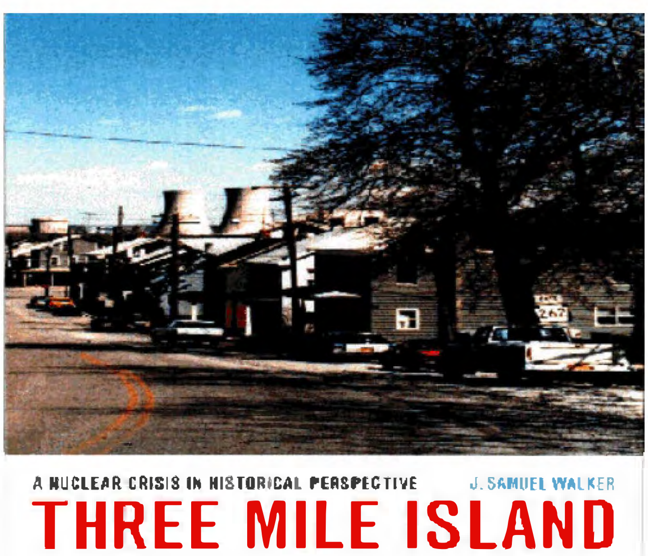
FUEL FAILURE AT PAKS

Unit 2, of the four-unit VVER station PAKS, in Hungary, experienced a failure of thirty fuel elements during a fuel cleaning procedure in April 2003. A cleaning device had been placed in the fuel pool and a number of assemblies inserted for the cleaning operation. After the cleaning process, the assemblies over-heated due to lack of sufficient cooling. The delayed opening of the device resulted in thermal shock and severe fuel damage followed by a limited release of fission products. There were detectable elevated radiation readings off-site for a very short period of time. Slight contamination resulted in the reactor hall. Among the given causes were: i) decrease in station safety culture; ii) excessive trust in the contractor supplying the cleaning device; iii) underestimation of safety consequences in the design of the cleaning cask: iv) lack of regulatory oversight in licensing and inspection; v) lack of competence and procedures for the cleaning operation itself; and vi) stress of time and overemphasis of production versus safety.

SMALL LOCA AT KOZLODUY

Unit 3 of the Kozloduy NPP, in Bulgaria, had an event involving primary coolant leak through a make-up system pipe into the confinement area. The event was characterized as a small LOCA. High pressure safety injection took place, for slightly more than an hour, until isolation could be effected. The failure was attributed to wear-out thinning due to mechanical friction from a nearby support. There was an initial error in design and construction in this zone. A total of about 30 cubic meters escaped from the primary system. Core cooling remained adequate, and sub-cooling margin was maintained. The NBE program did not include this portion of the pipe. Also, there were some deficiencies in the operating procedures, training program and evaluations.

The information presented above was extracted from a report titled "Conclusions Drawn from Recent (2002-2003) Events in Nuclear Power Plants" prepared by NEA/CSNI. We plan to include other significant international events in subsequent newsletters.



CONTEST--WIN SOMETHING FOR DOING VIRTUALLY NOTHING---what a deal-- All you have to do is to be the first DRS/DRP inspector/project engineer or resident inspector from your region to email ftt@nrc.gov. We have 4 copies (one per each region) of NRC's historian, J. Samuel Walkers book titled "Three Mile Island--A Nuclear Crisis In Historical Perspective". We will announce the winners in the July newsletter

DID YOU KNOW THAT....

Frank Brush played the sousaphone in the University of Southern California's (USC) Trojan Marching Band. In the 1973 football season the band played at Notre Dame (first time the band may have been there), the University of California, the '74 Rose Parade and Rose Bowl Game (Ohio State 42 - USC 21- rats) as well as home games in the Los Angeles Coliseum. The Rose Bowl half time show was with the Oakland, CA musical group "Tower of Power." **YIKES, SOME OF US REMEMBER THEM?** Frank met Lynn Swann (who went on to star as a wide receiver with the Pittsburgh Steelers) and others of that era's football team.

Frank was also in the pep band and played at basketball and baseball games. The pep band played at the USC-UCLA basketball game the week after Notre Dame broke the UCLA 80-plus game winning streak. The pep band marched in singing the Notre Dame fight song and was nearly attacked by a hostile crowd. **"Great times"**--these are Frank's words and we say it sounds like good times to us as well. Frank is a senior resident inspector at Wolf Creek Generating Station.

(b)(6)

Note: Our Tech Downloads..... column will appear in the next newsletter edition.

INSPECTOR NEWSLETTER

July, 2004

Our goal is to provide useful and succinct information to inspectors

FAILURES AT TMI-2 WENT FAR BEYOND PLANT SYSTEMS

By J. Samuel Walker

Although the accident at Three Mile Island on March 28, 1979 was caused by a series of technical breakdowns and operator errors, the response to it was greatly encumbered by problems unrelated to plant safety systems and procedures. Those problems were perhaps most obvious on the morning of March 30, when inadequacies in communications played a major role in Governor Thornburgh's recommendation that pregnant women and pre-school-aged children within a five-mile radius of the plant evacuate their homes.

The chain of events that led to the evacuation advisory began when Met Ed technicians decided to vent radioactive gas from the auxiliary building to relieve pressure on the makeup system. This was necessary to reduce the chances of a large, uncontrolled release, and it fleetingly produced a reading of 1200 millirems per hour directly above the stack. It also produced a distinctly unfunny comedy of errors. When Met Ed informed state officials about the release, the message got terribly garbled. The governor and his advisers heard that there had been an uncontrolled release from the "cooling tower." Civil defense authorities publicly announced that a large-scale evacuation might become necessary.

Meanwhile, NRC officials at the incident response center in Bethesda struggled to find out what was happening. They learned of the 1200 millirem release from the governor's staff, but they did not know anything about the causes and duration of the release, the levels of radiation it produced off-site, or the likelihood that further venting would occur. They tried to gain further information from their colleagues at the site, but phone lines were jammed and they could not get through. Concerned that the 1200 millirem reading showed up off-site and that further releases might occur, senior staff members decided to recommend a general evacuation to the state of Pennsylvania.

This recommendation caused a great deal of consternation at the site because radiation measured at the plant boundaries was not at worrisome levels. Within a short time, the staff in the incident response center learned that the information they had received was neither current nor accurate. But by then, the population of the area had been alarmed, state officials had been angered, and the Commission, which had not been consulted about the staff's recommendation to evacuate, had been placed in an exceedingly awkward position. Eventually, the Commission and Thornburgh agreed that uncertainties about the plant's condition made a partial evacuation recommendation advisable. The episode was a graphic demonstration of the need for up-to-date, accurate information and for clear channels of communication between decision makers and plant personnel.

Note: **J. Samuel Walker** is the NRCs' historian and author of Three Mile Island---a Nuclear Crisis in Historical Perspective. The newsletter's editorial board asked Sam to write this article focusing on the non-technical aspects of the accident. Thank you, Sam!

CONTEST WINNERS-"Three Mile Island---A Nuclear Crisis In Historical Perspective"
The response to the contest was overwhelming. Now we know that a lot of you actually read the newsletter. Unfortunately, there are no more books available. Here are the winners:

Region I Harry Balian
Region II Scott Freeman
Region III Charles Zoia
Region IV Andrew Barrett

POINTS OF CONTACT FOR 0612

In an effort to enhance communication and to improve IMC 0612 "Power Reactor Inspection Reports" we, the Inspection Program Branch, plan to conduct meetings with regional 0612 points of contact. We have lots of feedback forms on 0612 that we have not answered (there are no excuses) and we are working furiously on completing the forms. We found out that all of the regions have 0612 points of contact that want to work with us to make 0612 better. We hear that the current sample report is not consistent with 0612- Yikes to that and we are working on fixing that right now. Region III developed an awesome sample report that we are currently reviewing to incorporate into 0612. Jim Isom is now IIPB's lead on 0612. Listed below are the regional 0612 contacts. Please contact them for 0612 interpretations and/or comments suggestions to improve the guidance. And by all means use the feedback process--we promise to move quicker. Remember to copy your 0612 contact when submitting feedback forms.

Region I Don Florek
Region II Paul Fredrickson
Steve Cahill
Region III Ann Marie Stone
Region IV Bill Johnson

RESIDENT SITE STAFFING UPDATES HAVE BEEN POSTED TO DIGITAL CITY

OPERATING EXPERIENCE CORNER

Safety Injection at Dampierre-3

A spurious case of safety injection occurred at the Dampierre-3 reactor. The plant was in an intermediate start-up state. The steam generators were removing decay heat, and there was a bubble in the pressurizer. A key-lock inhibited safety injection during the plant startup. At this point in the startup sequence, the operator mistakenly removed the inhibition, and the high-pressure injection began. Another error was made during resettling the signal. In consequence of those two errors, the pilot-operated relief valve first cycled 21 operations and then 54 operations more at high reactor pressure. The lessons learned indicated a need for more training and better procedures on interlocks. This is still under consideration as of the writing of this note.
NOTE: This event was extracted from a report titled "Conclusions Drawn from Recent (2002-2003) Events in Nuclear Power Plants" prepared by NEA/CSNI. We plan to include other significant international events in subsequent newsletters.

QUIRKY TIDBIT

Jim Trapp, our very own editorial board member, **HIT A HOLE IN ONE!** He was at Irons Lakes golf course in Orefield, PA. The event happened at hole #6, Par 3 over a lake that requires ~ 150 yards to carry the water. The distance was ~170 yards to the hole. Jim hit a 4 iron and the ball landed ~one foot from the hole, bounced once, hit the pin, and dropped in the hole!

INSPECTOR HAPPENINGS

Region I
Ronald Cureton-new hire Reac.Engin. DRP
Nicole Sieller-new hire Reac.Engin. DRP
Jeffrey Kulp-new hire DRS
Joel Wiebe-new hire, (former NRC employee) DRS
Christopher Long-new hire Reac.Engin.DRP
James Krafty-new hire DRS
Patrick Finney-new hire DRS
Michael Brown-new hire Opers. Engin.DRS
Stephen Barr-promotion to Sr. Ops.Engin.
Alan Blamey-from Sr.PE to SRI@Susquehanna
Eugene Cobey-from SRA to Br.Chief, Br.2 DRP
Alfred Lohmeir- retiring June 30th
Peter Drysdal-SRI@Indian Point retiring

Region II
Norm Garrett-to SRI@Surry
Steve Sanchez-Acting SRI@Summer
Malcolm Widmann-rotation to RES
Greg Warnick-rotation to SRI@North Anna
Jim Hickey-RI@Hatch
Mark Speck-RI@Sequoyah
Ross Telson-from Sequoyah to NRR/Event Assess.Br.
Gerry Laska-to Sr. Operations Engineer

Region III
Alex Garmoe- new hire RE/RI in DRP
Greg Roach-new hire RE/RI in DRP
Richard Smith- new hire RE/RI in DRP
John Giessner- new hire RE/RI in DRP
Mohammed Munir-new hire Reactor Inspector in DRS
Alan Dahbur-new hire Reactor Inspectors in DRS

Region IV
Tony Vegel-promoted to Deputy Director/DRP
Elmo Collins-to HQ's
Joe Taylor-from DRS to RI@STP
Jeff Clark-to Chief, Engin.Br./DRS
Charlie Marschall-Acting Deputy Director/DRS
John Hanna-RI@Callaway to SRI@Fort Calhoun
Tim Hoeg-from Grand Gulf to SRI@St.Lucie
Greg Warnick-promoted to SRI@Palo Verde
Ron Cohen-new RI@Columbia
Mark Sartorius-to Director/DNMS

TECH DOWNLOADS......

Pen Tablet Survey Analysis

PILOT OBJECTIVE

The objective was to determine the usefulness of this device for resident and region-based inspectors and to identify any efficiencies that would result in improvements to the inspection program.

PILOT PARTICIPANTS

Mare Ferdas, RI, Hope Creek, Region I
Jamnes Cameron, PE Region III

NOTE: The complete tablet PC Pilot Analysis is posted on Digital City under the July newsletter. Listed below is bottom line information.

1. Was burden of carrying reference material reduced?

Both inspectors agreed the burden of carry reference material was reduced.

2. How much time was spent learning how to use the device?

Very little.

3. Did any software interface issues exists?

None.

4. Were any efficiencies gained by using this device?

The burden reduction of carry reference material and the ability to store large amounts of information was the biggest efficiency identified. Another efficiency was the ability to convert hand-written notes to text documents.

5. Do you think this would be a useful tool for resident inspectors/region-based inspectors?

Based on feedback from both inspectors it appears as though the tablet may not be as useful for resident inspectors (they travel less and have PC's readily available) and may have more benefit for region-based inspectors. Both inspectors agreed this could be a useful tool for specific region-based inspectors and suggested potential uses for: **operator licensing examiners**, **emergency preparedness inspectors project engineers** and **material inspectors**

THE REAL SCOOP: IIPB works with OCIO in piloting inspectors tools. We need your ideas on tools to pilot. Please e-mail Fiona Tobler with suggestions. IIPB does not provide regional funding for IT tools. You need to address your IT needs with your regional office.

REAL PROBLEMS/REAL SOLUTIONS

A Safety Significant Day

The licensee commenced their 28th refueling outage for Point Beach unit 1 in April 2004. Even though the licensee had made sufficient work plans prior to the outage, as we shall discuss, implementation of those plans were another matter. A resident inspector using IP 71111.20, identified during direct observation of steam generator nozzle dam installations, that the licensee failed to ensure a proper hot leg vent path for the reactor coolant system (RCS) had been established prior to nozzle dam installation; and proper controls for air supplied respirator suits were not followed.

On the midnight shift on April 9th, the licensee had reduced RCS inventory to mid-loop to allow for nozzle dam installation in both steam generators. The plant was in an orange shutdown risk condition and time-to-boil was approximately 38 minutes. During the nozzle dam installation, the inspector observed multiple situations where the personnel entering the steam generator bowl (jumpers) lost adequate air supply to their air supplied respirator suits. In fact, due to the physical size of some of the jumpers, their anti-C's were being lubricated so they could enter the steam generator bowl, which contributed to air hose problems. The inspector immediately raised his concerns regarding this unsafe work practice and the adequacy of the respirator air supply to the licensee project lead ***(Field Policy Manual No-13, Witnessing Unsafe Situations)***. The licensee stopped work to address the inspectors' concerns; however, the inspector remained concerned that the problem had not been sufficiently evaluated to prevent recurrence. In fact, the licensee experienced additional air supply problems throughout the shift. The inspector was also concerned that appropriate levels of station management had not been informed of the air supply problems.

During a discussion in the Outage Control Center (OCC) with licensee supervision regarding the air supply problems experience by the steam generator jumpers, the inspector learned that the licensee was encountering problems in removing the pressurizer manway that was needed to provide a vent path for the RCS with the nozzle dams in place ***(See GL 87-12 for more information on the importance of this configuration).*** The OCC managers believed that an adequate alternate vent path could be established while nozzle dam installation continued in parallel.

The inspector, being concerned about the supervision and decision making on the midnight shift, remained on-site for the day shift turnover meeting to hear what information would be passed along to senior plant management. The inspector observed that very little information and vague details were provided to the day shift staff and senior management regarding the events of the previous shift. Following the turnover meeting, the inspector held a discussion with the Director of Site Operations **(one level above the Plant Manager)** and conveyed his concerns about the activities on the previous shift.

The licensee consulted other workers and quickly determined that the inspector's concerns and details about the previous shift work were accurate and work was stopped for the entire outage later that afternoon. The licensee commissioned a corporate level investigation team to review the events and circumstances from the midnight shift on April 9th. The licensee's investigation team identified that the decisions made by the OCC staff regarding establishing a proper hot leg vent path was in error and that the OCC managers (four licensed SROs) had broken a schedule logic tie that had been placed in the schedule to avoid a higher risk significant condition. Regarding the controls and conduct of the steam generator jumpers and their air supplies, the investigation team identified that a lack of oversight of the entire evolution led to the confusion and improper work practices. In summary, the investigation team substantiated all of the inspector's observations and concerns. The licensee took correct actions and work was re-commenced in a very controlled manner approximately 36 hours later.

This event demonstrates the importance of having NRC personnel on-site during critical plant evolutions to observe nuclear and personnel safety. It also demonstrates the importance of following up on significant concerns ***(questioning attitude)*** with senior licensee management to assure that senior licensee management is receiving timely and accurate perspectives on safety issues such that, if warranted, prompt corrective action can be taken.

Pat Higgins, RI at Kewaunee is the point of contact. Good going, Pat!

VIDEO INSPECTION TECHNIQUES

David Dumbacher, Project Engineer from Region IV, was assisting the resident staff at Entergy's ANO facility, during Unit 1's eighteenth refueling outage (1R18) in April 2004. As a result, he identified several findings and issues dealing with the bare metal visual (BMV) inspections conducted for both the lower vessel (bottom head) and the upper vessel (Reactor Vessel Head). The upper vessel tapes were reviewed as part of 71111.20 refuel outage inspection.

NRC's Bulletin 2003-02 advised Pressurized Water Reactor (PWR) licensee's to provide the NRC with information related to inspections that will be performed to verify the integrity of the RPV bottom penetrations. Most licensees responded that they did not perform leakage inspections beyond that required by Section XI of the ASME code that required only an "at pressure" test with the insulation on. The NRC concluded that such inspections were not sufficient to reliably detect signs of leakage from lower head penetration (LHP) nozzles or corrosion of the RPV lower head, and therefore, issued TI-152. TI-150 had been issued to inspect for upper head leaks and nozzle cracking due to the RPV head cavity identified at the Davis-Besse Nuclear Power Station.

Dave noted that Entergy's plan to inspect the LHP included a 100% visual examination of all 52 in-core instrumentation (ICI) nozzles. Entergy intended to inspect 100% of the circumference of each ICI penetration by conducting a direct visual using a video camera attached to a robotic crawler. The crawler was a small device, approximately two inches long with wheels the size of a quarter, which was attached magnetically to the bottom head. Entergy planned for the crawler to start with ICI nozzle No.1, located at the nadir of the bottom head, and to proceed in sequence, which was a spiral pattern. Dave noted that the licensee had never before performed a bottom head inspection at ANO-1, so no "landmarks" or reference points existed.

Dave reviewed about 11 hours worth of the video tapes. He noted that the robotic crawler did not capture 100% of the nozzles penetrating both the bottom and upper vessel heads. On the bottom head, the crawler operator apparently became disoriented and re-videotaped one nozzle twice. Because of this the licensee was on the wrong nozzle for the remaining 34 nozzles. On the upper head, Dave pointed out that the video completely missed the 360 view of a complete row (6 nozzles) and another nozzle. He identified problems with the licensee's not documenting (via Condition Reports) obvious foreign material exclusion (FME) discrepancies that were observed on the video. Dave pointed out these discrepancies to the licensee and notified his management in Region IV.

The licensee reviewed the video tapes and admitted missing the bottom nozzle that Dave had identified. The licensee also identified having missed more nozzles on the upper head than what Dave had pointed out. In fact, they had missed three other nozzles and performed only a partial view on 12 nozzles on the upper head.

The impact of Dave's inspection was the licensee initiating several Condition Reports, cleaned off previous boric acid left on the reactor vessel head, and totally re-performed both the bottom and top video inspections. The NRC issued a violation of the licensee procedure for addressing the licensee commitments to NRC Bulletin 2003-002. The licensee also recognized the need to implement a method of placekeeping to ensure all future inspections did meet the NRC Order or commitments to the Bulletin.

What Dave demonstrated was a questioning attitude in identifying several pitfalls and weaknesses in using robotic device to video visual inspections. He asked questions like, "what should indications look like?" and "How rigorous was the licensee's review of this new process?' and "what can go wrong? Although the licensee is implementing new and better inspection techniques, these new techniques still involve a need for oversight and thorough review.

Well Done, Dave!

In Memory of Jason Jang

Jason Jang, Sr. Health Physicist, Region I passed away on June 17, 2004. He served for over 23 years at Region I and was consistently recognized for excellent performance and was held in high regard by his coworkers.

RIV DRP INSPECTION FINDING

NUMBER: 93-01	DATE: JANUARY 4, 1993

AN OPERATOR DECIDED, ON A BACK SHIFT, TO CLEAN A CONTROL PANEL WITH A SPRAY CAN OF COMMERCIAL CONTACT CLEANER THAT WAS AVAILABLE IN THE CONTROL ROOM. AS A RESULT, SWITCHES BECAME BOUND OR GLUED TO THE SWITCH PLATES AND THE SWITCHES COULD NOT BE OPERATED. IT WAS NOT APPARENT TO THE OPERATOR AT THE TIME THAT THERE WAS A PROBLEM WITH THE SWITCHES SINCE NO VISIBLE SIGNS OF DEGRADATION WERE OBVIOUS. IT WAS ONLY LATER THAT THE PROBLEM WAS DISCOVERED. HAD THE SWITCHES BEEN REQUIRED FOR OPERATION, THEY WOULD NOT HAVE BEEN AVAILABLE.

SUBSEQUENT TO DISCOVERY OF THE PROBLEM, IT WAS IDENTIFIED THAT THE CAN OF CLEANER WAS NOT AUTHORIZED FOR USE UNDER THE LICENSEE'S CHEMICAL CONTROL PROGRAM AND THAT A NOTE ON THE CAN STATED THAT THE CLEANING AGENT SHOULD NOT BE USED ON CONTROL PANELS.

THIS ITEM WAS IDENTIFIED BY JENNIFER DIXON-HERRITY DURING A SHIFT TURNOVER MEETING AT THE WATERFORD STATION. FOR ANY ADDITIONAL INFORMATION, CONTACT JENNIFER.

APPROVED: A. BILL BEACH, DIRECTOR, DRP

DISTRIBUTION: J. Milhoan/J. Montgomery/B. Grimes/A. Chaffee/DRP Staff

NOW THERE'S A BLAST FROM THE PAST!! Jennifer Dixon-Herrity is now with the Office of Enforcement as a Sr. Enforcement Specialist. Jennifer began her career with the NRC in RI as an Operations Engineer and then moved to the Special Inspections Br. in NRR. She was a Resident Inspector at Waterford 3 and Wolf Creek between 1992 - 1997. She then completed the Sr. Resident Development Program and was the Senior Resident Inspector at Grand Gulf from 1997 -2000.

This finding led to the discovery that the licensee did not have a consumable materials control program. A Severity Level IV violation was issued for failure to have an adequate procedure for such a program. The control panel referenced was the engineered safety features control panel, and the switches affected were controls for high pressure injection. The licensee instituted a control program, but prohibited materials were subsequently found in the control room.

TEAM LEADER ADMINISTRATIVE CHECKLIST

We weren't quite sure what to do with this list--it's pretty informal so incorporating it into a procedure was not the way to go. Soooo, we decided to use the newsletter as the means to make this available. You may want to consult this list when planning your next "big" inspection. The list was developed by a "touchy feely" person--a lot of the items are common sense and some of the suggestions are just plan niceties! We hope this can be of use to YOU!

PRE-INSPECTION ACTIVITY	COMPLETED
Obtain contractor support. Obtain root cause analysis contractor	
Determine team member special needs	
Make hotel arrangements as soon as possible (Inquire about non-smoking rooms, refrigerators, breakfast, gym facilities, etc)	
Obtain information on local area's of interest, restaurants, shopping etc. (Contact local tourist bureau)	
Prepare team bio's for licensee and for team members.	
Determine if team members have adequate portable PC/IT tools/software to conduct inspection. If not, obtain equipment	
Provide team members with TAC numbers or docket and inspection report numbers	
Provide information on how to charge 95003 prep. inspection, and doc. in the T&L system	
Communicate work hours, weekend hours, and overtime expectations	
Determine if administrative/secretarial support is required	
Send team members a welcome email providing above information	
Mail out team office supplies to resident inspectors office	
Bring digital camera or make arrangements to use the resident's digital camera to take team pictures for use on regional websites, NR&C, etc.	
Provide team with requisite documents as far in advance as possible	
Consider award funding for inspection as far in advance as possible	

BAGPERSON TRIP	COMPLETED
Arrange working space to include: desks, phones, computer lines, fax machines, site computer, xerox facilities, interview rooms. Establish admin. point of contact w/Licensee	
Ensure room used by inspection team to store notes overnight during the inspection is secure	
Determine how document requests will be tracked. Will licensee's database be utilized? If not, develop with administrative support, tracking database	
Determine if a public entrance meeting is required. If so, obtain meeting place. Make sure regional public affairs officer has a "heads-up"	
Check out where team can eat lunch while working at site	
Determine how observations will be recorded and tracked	
ON-SITE INSPECTION	**COMPLETED**
Bring coffee pot, tea, etc.	
Bring candy, snacks, etc.	
Determine where public exit meeting will be held as soon as possible. Procure meeting space as soon as possible	
Be sure to thank licensee admin/logistical staff in closing remarks w/Licensee	
Obtain digital picture of site to be included on NRC's certificate of appreciation	
Maintain a list of the team members' hotels and/or cell phone numbers	
Arrange to ship via U.S. mail, FedEx or whatever, inspectors' inspection documents	
POST-INSPECTION ACTIVITIES	**COMPLETED**
Provide group award (special act award) as appropriate	
Provide certificate of appreciation with site picture	
Provide letter of appreciation detailing staff's contributions. This can be used for performance appraisal input	
Consider providing article for NR&C	

INSPECTOR NEWSLETTER

September, 2004

Our goal is to provide useful and succinct information to inspectors

INSPECTOR HAPPENINGS

Region I

Adam Ziedonis-new hire-Reactor Engineer, DRP
Jeffrey Josey-Reactor Inspector, DRS
Christopher Long-NRR to Reactor Engin, DRP
Samuel Hansell-SRI@Susquehana to SRI@Limerick
Arthur Burrit-SRI@Limerick to Sr.Proj.Engin./DRP
Douglas Tifft-ORES to Reactor Engineer/DRP
John Richmond-from RI@Susquehana to Reactor Engineer/DRS
Steven Dennis-from NRR to Sr. Ops. Engin./DRS
Frank (Jeff) Laughlin-from DRS to NSIR
Harold Eichenholz-from DRS to NSIR

Region II

Tim Hoeg-new SRI @ St. Lucie
John Zeiler- SRI @ Summer
Gerry McCoy- SRI @ Vogtle
Jim Canady-from North Anna to NSIR
Barry Miller-new hire DRS
Joylynn Quinones, new hire DRS
Travis Harrison, Co-op DRS

Region III

Mark Wilk - new hire DRP RE/RI
John Robbins - new hire DRP RE/RI
Greg Gibbs - new hire DRP RE/RI
Carl Moore - new hire DRS OLB
John Jandovitz - new hire DRS MEB

Region IV

Phil Harrell - retired August 30th, 2004
Tony Vegel-RIII to Dep.Division Director, DRP
Dave Dumbacher-DRP P.E. to RI @ Callaway
Nick Taylor - new P.E. in Br. D/DRP
John Hanna - to SRI at Fort Calhoun
Jared Nadel-new hire in DRP
Terry Jackson -SRI @Diablo Canyon
Tony Brown - new hire in TSS

0612 WORKING GROUP

In the last edition of the newsletter we told you that a 0612 Working Group had been formed to improve IMC 0612 "Power Reactor Inspection Reports". This group is scheduled to meet the end of September in headquarters to make improvements to 0612. Developing a sample inspection report that is consistent with 0612 is one of several goals the group hopes to accomplish. Any suggestions you'd like to have considered at that meeting should be provided to your regional contact below:

Region I	Don Florek
Region II	Steve Cahill
	Paul Fredrickson
Region III	Ann Marie Stone
Region IV	Bill Johnson/David Graves

INSPECTION REPORT AUDITS

Inspection Performance (IP-1) metric "Percentage of Inspection Findings documented IAW Requirements", as defined in IMC 0307 requires that IIPB conduct annual regional inspection report (IR) audits. This information is included in the annual ROP SECY paper. This year we reduced the sample size from 100 to 44 based on positive feedback from last years audit.

Feel free to see if your Inspection Report is included within our Audit --we will include a list of the reports. In addition, you may view our Audit Form that we are currently using--**NOTE** that we are not conducting technical reviews but instead reviewing for conformance to 0612. So far, we have completed about 12 reviews and are contacting your branch chiefs with results.

Fiona Tobler, IIPB is the POC for this metric.

REAL PROBLEMS/ REAL SOLUTIONS

Failure To Ensure That Scheduled Maintenance On 480v. Breakers Was Performed

ISSUE: While completing a PI&R sample a DRS inspector identified that lack of positive control and verification of planned maintenance had contributed to the failure of 480v. breakers to operate on 18 different occasions.

BACKGROUND: Existing corrective action reports on previous breaker failures contained apparent causes such as “lack of grease”, “excessive grease”, “excessive dust, dirt and debris in operating mechanism” as reasons for the breakers not operating. The licensee had conducted a root cause evaluation and attributed the failures, incorrectly, to equipment aging. However, the inspector noted that several of the condition reports, on the failures, contained no evidence of equipment component failures which would have been evident with actual equipment aging.

In a persistent effort to understand the apparent incorrect root cause, the inspector conducted extensive discussions with engineering and maintenance personnel and identified a weakness in the plant’s procedures in failing to exercise positive control and documentation of actually completed maintenance on the 480v. breakers.

Engineering had been scheduling preventive maintenance on the breakers, however, the maintenance technicians were in the habit of deciding, on their own, whether the maintenance would actually be performed. When technicians decided to defer the scheduled maintenance, the procedure steps were marked NA and reviewed by maintenance supervision. The fact that the maintenance had not been completed was not communicated to the Engineering organization. The maintenance procedures contained detailed, explicit instructions on the cleaning and re-lubrication of all critical mechanisms of the breakers, however, in numerous instances the maintenance had not been performed.

FINDING: A Green NCV was identified for failure to implement procedures to positively control maintenance activities required by Technical Specification 5.4.1.a. and Regulatory Guide 1.33.

LESSON: The inspector exhibited a questioning attitude in following up on licensee conclusions which were not supported by the known facts. In this instance, the licensee had not critically examined and evaluated their procedures for control and evaluation of maintenance effectiveness.

Site: Calvert Calvert Cliffs
RPT Number: 50-317/2004-005
Point of Contact: Tim O’Hara, Reactor Engineer, DRS

TEMPORARY SHIELDING LEFT IN CONTAINMENT

ISSUE: While conducting a containment closeout tour prior at the end of a refueling outage, the inspector observed that a number of lead blankets used as temporary shielding were still installed. Although the blankets had been observed throughout the outage and during previous outages, it appeared as though the licensee intended to leave them in place during the upcoming operating cycle.

BACKGROUND: When the inspector questioned the licensee about the appropriateness of leaving the blankets in place, it was determined that the licensee did not have appropriate evaluations to justify leaving the shielding in place during plant operation. The concern was that the blankets, covered with a herculite-type material that was not rated for high temperature conditions, could potentially lead to delamination of the lead blanket coverings. Under post-accident conditions, the herculite-type material could potentially clog the emergency core cooling recirculation sumps, rendering the emergency core cooling systems recirculation function inoperable. The lead blankets were removed by the licensee prior to starting up the reactor.

The licensee conducted testing on the lead blankets to determine how the covering will respond to high temperature and high impingement forces. This information will be factored into the final risk significance determination when the final test report is issued.

LESSON: The questioning attitude and persistence displayed by the inspector resulted in the identification and correction of a condition that could have had significant impact on the licensee's ability to mitigate the consequences of an accident.

Site: Callaway
RPT Number: 50-483/2004-003
Point of Contact: Michael Peck, Sr. Resident Inspector

UPCOMING CHANGES TO NOTICE OF ENFORCEMENT DISCRETION (NOED) PROCESS AND STAFF GUIDANCE

NOED POLICY AND GUIDANCE BACKGROUND

Section VII.C of the NRC's" General Statement of Policy for NRC Enforcement Actions (Enforcement Policy)", NUREG-1600, describes circumstances when the staff may exercise a specific type of enforcement discretion in the form of an NOED.

On occasion, circumstances may arise where a power reactor licensee's compliance with a Technical Specification (TS) Limiting Condition for Operation (LCO), or other license condition, would involve an unnecessary plant transient or performance of testing, inspection, or other system realignment that is inappropriate for the specific plant conditions, or unnecessary delays in plant startup without a corresponding health and safety benefit. In these circumstances, the NRC staff may choose to not enforce the applicable TS or other license condition. This enforcement discretion, called an NOED, is exercised only if the staff is clearly satisfied that the action is consistent with protecting the public health and safety. Staff guidance for implementing the NOED policy for power reactors is provided in the NRC Inspection Manual Part 9900: Technical Guidance.

The Inspection Manual Part 9900 guidance will be updated and reissued. In the interim, certain process clarifications and changes that are being implemented now will become effective and promulgated via a Regulatory Issue Summary (RIS) that is currently in concurrence and that will also be incorporated in the revised Part 9900. These changes were coordinated with the regions and were discussed with representatives of the Nuclear Energy Institute (NEI) at a public meeting with the staff. They are applicable only to power reactors. **The changes are summarized below. Most will not be implemented until the RIS is issued.**

SUMMARY OF CHANGES

1. NOEDs vs. License Amendments

The staff continues to emphasize that the license amendment process should be used in preference to NOEDs whenever possible, so as to minimize the use of NOEDs. This includes appropriate application of the emergency and exigent provisions of 10CFR 50.91. NOED requests will be considered only if there is not sufficient time to process an emergency amendment request and the licensee can demonstrate that they engaged the staff immediately upon identifying the situation. Generally, an NOED request will not be considered if at least 72 hours of completion time remain for the affected LCO(s). However, the staff can often disposition an emergency amendment request in less than 72 hours, so NOED requests where less than 72 hours remain will be discussed with the staff and considered on a case-by-case basis. **Note that this is a clarification of a staff position rather than a process change and is currently effective.**

Amendments are preferable to NOEDs because their basis and authority are established in the regulations, the process is more scrutable, and they provide for public participation. Although occasional situations might accommodate exigent amendments in lieu of NOEDs, the urgency is almost always such that an emergency amendment must be requested. This approach will further reduce the already small number of NOED requests considered by the staff each year. The overall staff resource impact is not expected to be significant, but the timing is more challenging, often requiring night and weekend effort to process the request. Licensee effort to develop an emergency amendment could be somewhat greater than for an NOED in that a more quantitative and robust risk argument might be necessary to support an amendment. However, the need to address the "no net increase in risk" NOED criterion is eliminated and no follow-up license amendment is needed.

2. Issuing Office for NOEDs

The distinction between region-issued and NRR-issued NOEDs is being eliminated. This differentiation evolved over time on the basis of NOED duration and whether or not a follow-up license amendment was appropriate. In fact, although historically, most NOEDs have been issued and documented by the cognizant regions without follow-up license amendments and all NOED requests are evaluated and decisions made jointly by the regional and NRR staffs. Thus, the distinction is unnecessary. In addition, other changes to the NOED process, discussed below, will result in most NOEDs having follow-up license amendments regardless of NOED duration. As in the past, all NOED requests will be reviewed by the cognizant region and NRR staffs. However, the region will have the lead and will issue the follow-up NOED documentation. This administrative change will result in a more predictable, consistent, and efficient process through the establishment of a single focal point and elimination of the need to categorize NOEDs as regional- or NRR- issued. This change has little, if any, impact on staff resources and no impact on licensee resources. The Enforcement Policy must be changed to enable this process change since it currently refers to NRR and regional NOEDs. **A Commission Paper seeking approval for this minor change is in concurrence.**

3. Follow-up License Amendments

Generally, licensees will be required to submit a request for an exigent license amendment as a follow-up to an NOED granted by the staff. The request is to be submitted within 2 workdays of the NOED verbal authorization and is to be acted on by the staff within 4 weeks of receipt. Such follow-up exigent amendment requests will not be required if the licensee can demonstrate, and the staff agrees, that the need for the NOED request was not the result of any limiting condition of the license that could credibly recur. An example of an NOED that might not require a follow-up exigent amendment is a corrective maintenance situation that exceeds the allowable completion time because a replacement component turns out to be incorrect or defective. This situation could not be identified early enough to avoid exceeding the allowable license condition, and would not be expected to recur. The need for a follow-up amendment will be discussed and resolved during the NOED request telecon and addressed in the NOED documentation.

A follow-up license amendment formalizes the staff's NOED decision through an established regulatory process with the opportunity for public participation, albeit after the fact. To the extent that a greater number of NOEDs will now require follow-up amendments, there is a resource impact on licensees and staff. However, the total number of NOEDs requested and granted is quite small, having averaged only about a dozen per year, and will become even smaller as a result of these process changes.

4. Permanent vs. Temporary License Amendments

Licensees should request permanent, as opposed to temporary (or one-time), license amendments either in lieu of or as follow-up to NOEDs to address operational issues. If there is a problem with a TS or other license condition, it should be addressed with a permanent solution rather than a temporary fix, thus precluding recurrence of the same issue. Generally, but not always, if a change can be justified on a one-time or temporary basis, it can likewise be found acceptable as a permanent change. However, there are situations when a temporary amendment, either in lieu of or as a follow-up to an NOED, is an appropriate and acceptable resolution. Examples include:

(1) amendments whose acceptability relies on complex compensatory actions that are not practical on a permanent basis
(2) amendments involving trial implementation of an advanced technology
(3) risk-informed amendments whose acceptability cannot be demonstrated on a permanent basis
(4) amendments requested and approved until a supportable permanent change request can be submitted and approved

Licensee justification for a temporary amendment will be discussed with the staff during the NOED request telecon, or before submitting and in-lieu-of emergency amendment request. If situations arise where the staff believes a permanent amendment is warranted but the licensee disagrees, the staff cannot require the licensee to request a permanent amendment. Assuming that the request is otherwise technically justified, the staff's safety evaluation will document: the insufficient justification for the temporary nature of the amendment; that subsequent requests for the same amendment might not meet 50.91 emergency criteria; and that recurrence of the condition may be considered inadequate corrective action in accordance with 10CFR50 Appendix B. If warranted, a license condition could be added to require a subsequent permanent amendment request as a follow-up to the temporary amendment.

5. Demonstration of No Net Risk Increase

The current NOED policy and guidance require that an NOED request demonstrate, at least qualitatively, and the staff agree, that it does not involve any net increase in radiological risk. This requires a comparison of the risk of continued operation under the NOED in a degraded condition (including any risk benefits attributable to proposed compensatory measures) with the risk attendant to complying with the LCO or other license condition (i.e., shutdown, repair, and restart). We recognize that this is a difficult requirement to demonstrate satisfaction with because of the limitations of available analytical models. We are working independently and with the NEI to develop clearer guidance, expectations, and better tools to address this requirement and are close to success. The goal is to include this improved guidance in the revised Part 9900. In the interim, NOED requests should provide the licensee's most technically supportable risk comparison, as defined above.

NOTE: Part 9900 NOED guidance will be revised and reissued to reflect these changes/clarifications within the next 6 to 9 months. In the interim the RIS will provide needed guidance on the changes.

Any questions on this guidance should be directed to: Herbert Berkow (HNB@NRC.GOV, 301-415-1395)

LIVING ON THE EDGE!

Some of you may know Tom Foley–he has been around for awhile. He started in Region I as a pipe support specialist served as a resident inspector at Yankee Rowe, Indian Point, and Calvert Cliffs. Since leaving the region in 1988 he has been involved in the inspection program. He has lived many lives, one of which was as an officer in charge of an Explosive Ordinance Disposal Team. His job was to disarm mines, missiles, torpedoes, booby traps, clandestine devices and nuclear weapons–pretty scary stuff! Anyway, while in training he had to complete an Underwater School swimming (scuba) test in open water at night using only a compass. The point was to get a bearing on a radio tower beacon on land and then submerge and using the compass underwater come as close as you can to the object before you surface - Tom and his swim buddy swam the 1.5 miles underwater but when they tried to surface they found that they had swum into a large SEWER PIPE! Tom also qualified as a navy para-insertion diver and was tasked with jumping out of airplanes with scuba equipment on his back.

Tom has also managed to complete about 25 triathalons, the first of which was with Sam Collins while they both were resident inspectors in Region I. He has completed 40 marathons, numerous running races and many swimming events, including completing the Chesapeake Bay Swim (4 ½ miles) four times!! Tom just keeps going and going----his next great adventure upon retirement in 2005, is to live on his 50 ft sail boat and sail around the world!

Lets Hear from you! Click on the “talk back” button>>>>>>>>>>>>
We want Questions, Comments and Ideas for YOUR News Letter!

RPS UPDATES

DID YOU KNOW THAT...... **ROP inspection findings** (PIM) are available in searchable format on the web? Go to NRR Home Page or ROP Digital City and click on the Dynamic Web Site, http://nrr10.nrc.gov/rps/dyn/index.cfm

There are several analytical tools under the ROP column. The 1st selection, ROP PIM Report, lets you search by procedure, site, significance, inspection item type, cornerstone, and text search. There are other tools that you might find useful. For example, 5th and 6th selections are on Inspection Reports - - hours charged, samples, statuses.

Did you also know your RPS/IP schedules can be exported into your GroupWise Task List? In the RPS/IP application, click TOPICS on the toolbar, select GroupWise Export and follow the Wizard! Once your schedules are exported to GroupWise Task List, you can download them to your PDA. This added function in RPS/IP came from a suggestion Steve Vias in Region 2 submitted to RPSHELP.

Send an email to RPSHELP, they want to hear your suggestions and comments.

INSPECTOR NEWSLETTER

November, 2004

OUR GOAL IS TO PROVIDE USEFUL AND SUCCINCT INFORMATION TO INSPECTORS
The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's inspection manuals.

WE NEED:

1. Your inspector success stories,
2. Your suggestions on what STARS, VAF's, etc. would be of benefit to all inspectors,
3. Your personalized inspection checklists,
4. Your accomplishments anytime in your life (hobbies, talents, books written, music, etc.),
5. Your quirky tidbits or interests (NASCAR, ect...) , and
6. Your ideas on what to include in the newsletter.

This is your newsletter!
We know how busy you are and for that reason the editorial board makes a conscious effort to provide you with items of interest that may help you in performing your duties.

Sometimes we have to pull 

to get inspector success stories and accomplishments. Remember your findings, suggestions, and items you use to successfully accomplish your work may be of benefit to others---**PLEASE SHARE!** Feedback may be provided to any of the following editorial board members:

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THEM THERE MOUNTAINS

Do you believe that people, other than Lance Armstrong, actually bike mountains? Hum, wonder how many NRC staffers actually take the challenge and bike 50 or 100 miles through the biggest mountains in North Georgia? You can pick either 3 gaps (50 miles) or 6 gaps (100 miles), including over 11,000 vertical feet of climbing. We found two NRC staffers crazy enough to go for it---Dan Arnett, RI, Surry, biked 3 gaps and placed 8th overall out of approximately 750 riders and Chuck Casto, Division Director, DRS, RII, completed 6 gaps.

We were curious about Dan Arnett and found out that his life is very active. In addition to finishing the bike ride last month, he also completed the Sandman Triathalon finishing 4th in his age group. Yikes--he did this with 33 miles per hour wind gusts which ultimately led to the cancellation of the swim. Dan is always in motion--He swims, bikes, runs and is always getting ready for a competition that involves one or all of these activities. He has competed in over 45 distance running competitions and 10 triathalon's. Did I also mention that he played competitive volley ball for Georgia Tech and still finds time for recreational play on his "off"days.

(b)(6)

He started with the NRC in June 2002 as a summer hire, becoming full time in December 2002 when he joined the intern program in Region II. He joined the Navy after high school, completed the Nuclear Navy program, and after his tour of duty ended he attended Jacksonville University graduating with a Bachelor's degree in Physics Engineering and then transferred to Georgia Institute of Technology and earned a Bachelor's in Mechanical Engineering. After completing NRC's intern program, he was assigned in December 2003, to Surry as a RI. Dan and his wife, Nancy, enjoy living in the town of Newport News. They recently purchased a 1910 Victorian house that they are in the process of renovating. Next time you are in the area look for Dan biking or running the back roads of Virginia.

IMC 0612 UPDATE

The 0612 working group, consisting of Inspection Program Branch staff and representatives from three of the four regions, met during September 28th - 30th, 2004, to make improvements to the Power Reactor Inspection Reports Manual Chapter, IMC-0612. The meeting was highly productive and informative--especially to IIPB staff. The working group made proposed revisions to the body of IMC-0612, exhibits 1, 2 and 4 and currently, is in the process of making improvements to the sample inspection report, exhibit 3. The plan is to finish making improvements to the sample inspection report in November and then complete improvements to appendices “A” through “E.” The group’s goal is to issue a revised IMC-0612 in early 2005 after the normal review/comment period.

The 0612 working group (listed below) was recently formed by the Inspection Program Branch to make further improvements to IMC-0612 by using the talents of senior staff members in the regions.

Region I	Don Florek
Region II	Paul Fredrickson/Steve Cahill
Region III	Ann Marie Stone
Region IV	Bill Johnson/David Graves
IIPB	James Isom, IMC-0612 procedure lead.

REAL PROBLEMS/REAL SOLUTIONS

Inspectors Identify Issues During Fermi Forced Outage

On August 8, 2004, Fermi 2 entered a forced outage to address an Emergency Diesel Generator (EDG) blower failure. The inspectors recognized that the failed EDG required extensive overhaul and testing and implemented 24-hour inspection coverage. This coverage provided an opportunity for the resident inspectors to promptly evaluate several emergent equipment issues and identify weaknesses in the licensee's corrective action program.

Following the plant shutdown and while in shutdown cooling, a stainless steel Residual Heat Removal (RHR) pump seal cooling line separated from a compression fitting spraying reactor coolant in the pump room . To review this issue, the inspectors donned plastic anti-contamination clothing to personally assess the situation. The cause of the failure was later identified as a mis-application of materials; a carbon steel vice stainless steel ferrule used during a maintenance activity many years ago. The inspectors identified that the licensee had not planned to conduct an extent of condition review. The inspectors questioned whether an extent of condition concern existed on the remaining RHR pumps. Upon investigation, the licensee identified a carbon steel ferrule on a second RHR pump. **This issue demonstrated that the inspectors were proactively conducting in-field inspections and were sensitive to extent of condition concerns.**

During shutdown surveillance testing, a High Pressure Coolant Injection (HPCI) turbine steam supply valve failed to close as required. Licensee personnel focused their investigation solely on a potential problem in the breaker logic and testing circuitry. The inspectors questioned the condition of the motor operator, entered the steam tunnel for a detailed inspection, and identified brittle insulation on the motor cables and control wiring. Subsequently, licensee personnel discovered missing insulation from a portion of the HPCI steam pipe which had accelerated the thermal aging of the cables/wiring and caused the inspectors to question the environmental qualification of the motor operator. Due to the inspectors' concerns, the licensee replaced all cables/wiring associated with the valve and replaced the missing insulation. **This issue demonstrated that the inspectors were proactively conducting in-field inspections and were focused on safety; not merely "following" the licensee's investigation.**

After the completion of all repairs, a plant heatup was initiated in preparation for reactor startup. The inspectors conducted a closeout inspection of the steam tunnel and identified damaged insulation on a second section of piping in the vicinity of the HPCI turbine steam supply valve that licensee personnel had not identified. If this had not been identified, accelerated thermal aging of the replaced cables/wiring could have recurred. **This issue demonstrated that the inspectors were proactively conducting in-field inspections and illustrated the importance of verifying the licensee's actions.**

These issues demonstrated the value of in-field inspections in areas difficult to access or not normally accessed; the benefits of a "trust but verify" practice; and the importance of challenging the licensee on extent of condition, material condition, and the adequacy of planned corrective actions.

Steve Campbell, SRI, Fermi
Tim Steadham, RI, Fermi

TECH DOWNLOADS

Did you know...

RPS/IP schedules can be exported into your GroupWise Task List?

In a few simple clicks you can integrate your RPS/IP schedule into your GroupWise Task List. Please remember that this is a one-way process. Items that are exported to GroupWise cannot be imported back into IP and it does not happen automatically. You need to perform the export function on a periodic basis to ensure that GroupWise contains your latest RPS/IP items.

To export information from RPS/IP to GroupWise, select the TOPICS toolbar in the RPS/IP application. Next select GroupWise Export from the drop down menu and follow the instructions from the RPS/IP export wizard. It's that easy! If you use your PDA you can export your Tasks from GroupWise using a third party software, such as Intellisync©.

This added function in RPS/IP came from a suggestion Steve Vias (Region II) submitted to RPSHELP. The people at RPSHELP are always looking for new ideas that help support the inspectors in the field, so keep them coming.

Marc S. Ferdas, Resident Inspector - Hope Creek

RPS UPDATES

Did you know that you can now search the Event Notification Reports on the Dynamic Web Site, http://nrr10.nrc.gov/rps/dyn/index.cfm , option 5 under the ROP column. Thanks to Conchita See, NRR, for providing this tidbit!

Operating Experience Highlights

There have been several interesting happenings in the Operating Experience (OpE) arena at the NRC over the past several months. As result of the recommendations associated with Davis-Besse Lessons Learn Task Force, the agency has taken a closer look at its reactor operating experience (OpE) program. To this end, the OpE Implementation Team was formed to support and bring forward the recommendations associated with the Reactor Operating Experience Task Force Report. This team, in a coordinated effort with the entire agency, has provided a detailed implementation plan that includes a strategy for a phased approach to identify, define, and implement a timely and effective NRC OpE program.

Just recently the team released a draft version of the "NRC Operating Experience Program Implementation." After the first round of comments, this document will become an NRR Office Instruction. This draft document provides important details associated with various OpE program activities. There is also a draft Management Directive (MD8.X) titled "Reactor Operating Experience Program" in the works that will cover this Office Instruction as well as Office of Research OpE activities. These program documents will be ready for use in draft form by the end of the year. These draft documents will be made available via your organization's designated representatives for final comments on November 1, 2004. On that note, the OpE designated representative's role is to help achieve divisional concurrence and communication on OpE program documents. Their long term role, however, is to act as advocates for the program within their respective organizations. If you have questions or suggestion relating to the new OpE program, please engage your OpE designated representative. The following is provided as the current list of OpE designated representatives.

Allan Barker, DIPM/IIPB/NRR
Bob Schaaf, DRIP/NRR
Doug Pickett, DLPM/NRR
James Tatum, DSSA/NRR
Steve Unikewicz, DE/NRR
Mike Boyle, PMAS/NRR
Bennett Brady, DRAA/RES
Jit Vora, DET/RES
Al Tardiff, NSIR
James Trapp, Region I
Caudle Julian, Region II
Tom Kozak, Region III
Bill Johnson, Region IV
Will Madison, OCIO
Jim Morris, HR

OPERATING EXPERIENCE COMMUNITY

Along similar lines, there was an interesting article outlining a subscription email service for communicating OpE in the March 2004 Inspection Newsletter. Technology, provided by the Information Management branch within NRR, has taken this concept to the next level. These mailing groups, or simply referred to as communities of practice, will soon be available as a web based subscription service called "@ Operating Experience Community." This concept is currently being tested by the NRR/OES staff. Available communities include: Auxiliary Feedwater System, Chemistry/Chemical Engineering, Control Room Habitability, Dose Assessment, ECCS, Emergency Diesel Generators, Electrical Power Systems, Emergency Preparedness, Fire Protection, Flood Protection & Missiles, Fuels, Health Physics, Human Performance, HVAC, Instrumentation & Controls, Main Steam & Condensate/Feed Systems, Materials/Aging, Physical Security, Power Uprates, Reactor Vessel/Piping/RCPB Leakage, Spent Fuel Storage & Load Handling, Station Service Water Systems & Ultimate Heat Sink, Steam Generators. If you would like to subscribe to these communities and be part of the future web based service, please contact Kathy Gray via e-mail (KAG) or phone at 301-415-1166 to sign up. Additional information is located at:
http://nrr10.nrc.gov/rorp/roe-email-info.html.

GENERIC COMMUNICATIONS WEB BASED TOOL

In the January, 2004 Inspection Newsletter, Phil Harrell introduced a value added document that references **associated** generic communications with inspection procedures. This document in it's entirety provides operating experience reference's to all baseline procedures. It also provides technical sub-categories within the procedures. As part of the overall OpE program initiative, this document has been revised to be a web based tool that includes individual links to each generic communication. Simply find the IP (in the provided table), click and you're there. Then click the associated generic communication and you will have the document right there on your screen. The link for this dynamic document is located at:
http://nrr10.nrc.gov/rorp/ip-71111-01-historical-ref.html.

WHAT'S NEXT?

Things coming up next month for the Inspection Newsletter's OpE Highlights - Web OpE data access point - Enhanced web development to provide near single access to all NRC operating experience information for availability and limited search functions. Meta-search capabilities to follow in the longer term. **Contact:** Jack Foster (jwf), 301-415-3647, Operating Experience Section.

ROP INTERNAL SURVEY-2004

Posted on Digital City is the ROP Internal Survey. This purpose of this survey is to solicit feedback from NRC internal stakeholders (that includes you) on the ROP. Everyone's participation is needed to make the ROP the best it can be—so please take 15 minutes to complete the survey. The survey is to be completed by November 15th. Serita Sanders is the IIPB point of contact.

IMC-0620 "INSPECTION DOCUMENTS AND RECORDS"

You can run, hide, pull the covers over your head but that won't stop IMC-0620 from getting revised. It came to our attention, via feedback forms from Regions II and III, that we need to make some improvements to this manual chapter. The recently issued guidance (included in this issue) on the use of photo's during the inspection process and the use of photos for training purposes are the first step. IIPB recognizes that the IMC in it's current form is not user-friendly and that it contains some burdensome requirements that have been misinterpreted. Our goal is to issue a revision that is user friendly, less burdensome, and useful. We will keep you posted on the status. Fiona Tobler, IIPB, is responsible for the revision.

LICENSEE SURVEY

Brookhaven National Laboratory (BNL) recently completed a survey for IIPB of managers at power reactors. Listed below is a summary of the survey and a table that provides responses to some of the questions. A complete copy of the BNL survey will be posted on Digital City.

Summary

Overall, the survey results indicate that utility managers are generally satisfied with NRC regulatory activities, except in the area of fire protection. Managers expressed the greatest amount of satisfaction with the quality of inspections and inspection reports, followed by communications during formal meetings, workshops, and conferences. Managers expressed the least satisfaction in the fire protection area, the only area that received higher levels of dissatisfaction than satisfaction. Managers raised concerns with fire protection activities, primarily with the clarity of regulatory requirements and the length of time to resolve issues. Five managers raised concerns with security orders, including the number of orders, and the need for more timely and complete communication with the industry.

ROP	% of mangrs satisfied or very satisfied	% of mangrs neutral	% of mangrs unsatisfied or very unsat	# of dissatisfied comments
Inspection quality	86	9	5	8
Inspection freq	68	21	11	2
Inspector comm skills	68	18	13	5
Inspection reports	81	16	3	1
SDP	57	26	16	4
PI	72	22	5	0

USING YOUR CAMERA DURING THE INSPECTION PROCESS?

You might want to review the guidance below. As a result of a RII feedback form we develop this table clarifying existing guidance in IMC-0620 “Inspection Documents and Records”. In addition, we developed a table on the use of photos for informal training. We sent this guidance out to your Deputy Regional Administrators on October 5, 2004. To view the document in its entirety check out Digital City under the Nov. newsletter.

QUESTION	ANSWER
1. Do I need the licensee's permission to take photographs? *This does not mean that you have to ask every time that you take a photograph. We suggest that you announce at the start of the inspection that photographs will be taken.	*Yes, if a photograph is made by the NRC during an inspection, it should be preannounced and all participants informed. If someone objects, the objection should always be honored. On occasions where it is not possible to get the licensee's permission in advance, be sure to notify the licensee as soon as possible. Use common sense in taking photographs as part of your routine inspection activities. Avoid taking Photographs of personnel or plant features related to security. Follow the licensee's policy on the use of photographic equipment, including the prohibition of flash photography in areas of sensitive plant equipment.
2. What if the licensee does not grant permission?	Discuss the licensee's concerns with your supervisor.
3. Can I forward photographs to my management electronically without the licensee's review?	No. If a photograph is made during an inspection, it should be reviewed by the licensee to determine if it contains any personal privacy, classified, proprietary, or safeguards information.
4. Do I need something in writing from the licensee that says they have reviewed the pictures for safeguards, personal privacy and propriety information?	No.
5. Is there agency guidance on how to forward Photographs that contain classified or sensitive unclassified information?	Yes. Photographs that contain proprietary information or are for Official Use Only can be forwarded electronically (via email or fax) . Photographs that contain classified or safeguards information cannot be forwarded via email. However, if it is necessary to provide these photographs to management or to NRC experts to assist in making an inspection determination, you must print the photographs and forward them via a secure fax machine utilizing appropriate controls established in agency guidance. If secure fax capability is not available, the photographs must be mailed in accordance with NRC requirements and the approved NRC classified mailing address must be used if classified information is involved. Also, all photographs believed to contain classified or sensitive unclassified information must be marked in accordance with NRC requirements. The camera used to take the classified photographs must be protected as classified and secured when unattended.

6. How do I know when photographs must be retained ?	If the photographs **are used** to substantiate an inspection finding and they do not contain classified or safeguards information, they are considered official agency records and must be retained and placed into ADAMS. **Examples** of photographs used to substantiate an inspection finding include photographs that are relied on to support regulatory decision-making. In some cases, the photograph may be the sole basis for the inspection finding.
When are photographs required to be destroyed?	If the photographs **are not** used to substantiate an inspection finding and they contain personal privacy, classified, proprietary or safeguards information they must be destroyed in accordance with NRC requirements. **Examples** of photographs not used to support an inspection finding include: (1) those photographs that are used as memory joggers to assist the inspector in finalizing the inspection report and (2) photos forwarded electronically to regional management to clarify or to discuss findings. Photographs of this nature are not relied on for regulatory decision-making.
If photographs are not used to support inspection findings can they be retained for training purposes?	If the photographs do not contain personal privacy, classified, proprietary, or safeguards information, they may be retained for informal training purposes. If the photographs contain personal privacy, classified, proprietary, or safeguards information, then they must be destroyed in accordance with IMC 0620.
7. What if the licensee requests that a photograph be withheld from public disclosure because it contains personal privacy or proprietary information.	If it is necessary to keep a photograph containing personal privacy or proprietary information, the licensee must request that it be withheld from public disclosure in accordance with 10 CFR 2.390 (b) (1). If the information is proprietary the request must be accompanied by an affidavit. If the photograph is the basis for a finding, it should be edited by the licensee to delete the sensitive information unless that information is necessary to support the finding. REMINDER–Under IMC-620 if the photograph contains personal privacy, classified, proprietary, or safeguards information it must be destroyed if it is not the basis for an inspection finding.

INSPECTOR NEWSLETTER

January 2005

Our goal is to provide useful information to inspectors.

The material presented in this newsletter is for information purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's Inspection Manuals.

WE HEARD YOU!

Thanks for the feedback on the last newsletter. Because of that feedback we are reprinting the Operating Experience Corner article to provide you with direct access to the useful PDF links and we are reprinting the information on the use of camera's during the inspection process because the font size was small.

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OPEN TASK INTERFACE AGREEMENTS (TIA's) ASSIGNED TO NRR

PLANT	TIA#	TITLE	ADAMS ACCESSION NUMBER	ACTION HOLDER
Turkey Point 3&4 Region II	2003-03 04/30/03	Review of SBO strategy/analysis	*ML031320343	DSSA
D.C. Cook 1&2 Region III	2004-02 06/07/04	Degraded voltage protection	*ML041590273	DE
Surry 1&2 Region II	2004-04 08/26/04	Preplanned entry into 10.CFR 50.54(X)	*ML043640259	DIPM
Salem Unit 1 Region I	2004-05 10/31/04	SFP Boric Acid Leakage	*ML042570149	DE
Indian Point 2 Region I	2004-03 06/17/04	Electrical Cable Separation	*ML041700195	DE

We heard that you may be interested in this information so we went exploring. NRR/DLPM tracks the TIA's and provides updates to regional management via a monthly memorandum. Currently, this information is not available electronically (Operating Experience folks are working on something) so we will provide you updates in upcoming Inspector Newsletters. Updates will include ADAMS accession numbers for those TIA's that are closed.

CONNECTIVITY---That's what this newsletter is about--connecting regions and headquarters. That's how we got the idea for the article on TIA's. Through a Region I, DRP, Branch Chief (Jim Trapp), we received this suggestion that inspectors might be interested in this information. NRR/DLPM (Bob Clark and Rich Laufer), provided us with the information, and NRR/DIPM, Operating Experience Section (Jack Foster) is taking this a step further by providing, in the near future, this information electronically via the Operating Experience web-site. Not only is this an example of teamwork but an example of good ideas being put to use and shared----Continue to tell us what will help you do your job better!

*The hyperlinks will be made be available in the next edition of the Inspector Newsletter.

IS NEW REACTOR CONSTRUCTION PART OF YOUR FUTURE?

By Ed Kleeh, IIPB

SOME BACKGROUND INFORMATION: There is a recognized need in this country to increase the role of clean energy sources, such as nuclear energy. The Energy Information Administration (EIA), the data-gathering arm of the Department of Energy, forecasts that U.S. electricity demand will increase 50 percent by 2025! More than 350,000 megawatts of new electric generating capacity will be needed to meet increased demand and replace older power plants according to EIA. **Hmm, how is the government involved?** To address this need, the Department of Energy has developed the Nuclear Power 2010 program to encourage the building of new nuclear power plants by the end of this decade. Under the Nuclear Power 2010 program, DOE has recently awarded funds to two consortia - NuStart Energy Development LLC and another industry team led by Dominion to determine the precise work scope, milestones, and costs associated with demonstrating the NRC's combined construction-operating license process. The Dominion team includes Atomic Energy of Canada Ltd. (AECL) and has selected the advanced Candu reactor technology, the ACR-700. The NuStart team is considering General Electric's Economic Simplified Boiling Water Reactor (ESBWR) and Westinghouse's AP-1000. In May of 2004, DOE had awarded funds to a third team lead by the Tennessee Valley Authority (TVA) to complete a feasibility study to build a General Electric ABWR plant at TVA's Bellefonte site. **Wow–most of us have heard of TVA!**

WHAT IS THE NRC'S INVOLVEMENT? The NRC is also working to make sure that we are ready to facilitate the construction of new nuclear power plants. The NRC has been actively engaged in developing new inspection and licensing requirements for the combined operating license (COL) approach stipulated in 10 CFR 52. The NRC is also developing a computer-based means for scheduling inspections and for processing/querying inspection results and all open items. This will enhance the NRC's capability for inspecting the new plants which may be fabricated in modules and assembled at both fabrication facilities offsite and onsite with construction and testing being completed in only 60 months! Major milestones for the NRC are to draft COL application guidance by early 2005 and revise Part 52 by late 2005.

WHO'S CURRENTLY PART OF NRC CONSTRUCTION TEAM?

Mary Ann Ashley, Team Leader, NRR	Joseph Tapia, RIV	Caudle Julian, RII
Thomas Foley, NRR,	Tony Cerne, Contractor	Ronald Gardner, RIII
Edwin Gray, RI	Paul Prescott, NRR	Edmund Kleeh, NRR
Joseph Colaccino, NRR		

CURRENT STATUS?

How close is the possibility of new construction? Current estimates are that the NRC could receive an application from one of the consortiums as early as 2006. DOE and the nuclear industry will spend a combined amount of $250,000,000 on new plant activities in 2006, mostly related to consortia work on designs and COL applications. The NuStart Team plans to prepare a COL application for the GE ESWBR and the AP-1000, and submit at least one COL application to the NRC in 2008. Pre-application discussions with the NRC will probably occur in early 2007.

Quotes by Jack Handey (a humorist), from his book "Deep Thoughts" applied to NRC activities by an inspector with a quirky sense of humor !!

Fire Protection– "If you ever catch on fire, try to avoid seeing yourself in the mirror, because I bet that's what REALLY throws you into a panic."

SDP Color Schemes– "As the light changed from red to green to yellow and back to red again, I sat there thinking about life. Was it nothing more than a bunch of honking and yelling? Sometimes it seemed that way."

Properly Secure Safeguards & Allegation Material– "Consider the daffodil. And while you're doing that, I'll be over here, looking through your stuff."

NICE CATCH!

Steve Cochrum, Resident Inspector at Cooper Nuclear Station, as a routine practice checks to make sure that the PIM and PI data on the public website for his plant is correct. He usually visits the website to review this information after the quarterly updates to help him prepare for potential questions from the licensee and to ensure the accuracy of the website. During his most recent review after the posting of the 3Q2004 data, he noticed that although the 3Q2004 data looked fine, the words "Not For Public Disclosure" were present on the historical performance web pages for 2Q2004. He questioned why this annotation was present on the external (public) web site and contacted his Project Engineer, Wayne Walker, who in turn contacted IIPB. The situation was immediately investigated and all affected web pages were promptly updated to remove this annotation. This mishap was a result of the recent policy change to remove physical protection information from the public domain. Fortunately, the pages did not contain any information that was not previously released to the public. We commend Steve for his review of the website and hope that other inspectors are doing the same. Good example of a conscientious inspector and of teamwork! Thanks, Steve!!

QUIRKY TIDBITS
"Multitasking Capacity Test."
Provided by a Quirky Inspector

While sitting at your desk, lift your right foot (not leg) off the floor and make clockwise circles. Now, while doing this, draw the number "6" in the air with your right hand. Your foot will change direction and there's nothing you can do about it!

Regional Rotation Lessons Learned Items

This was written by Michael Dudek and submitted by Glenn Dentel, SRI, Seabrook. Michael is in the Nuclear Safety Professional Development Program and recently completed a 3 month rotational assignment at Seabrook. We printed the entire article because of it's potential benefit to both SRI's and Interns.

SRI Goals/Hints:

Patience.

Take an interest in the intern (likes/dislikes). Give the intern his/her own work space.

Introduce the intern to plant personnel and make him/her feel welcome.

Use the lunch time to talk about Individual Study Activities (ISA's), inspector practices, and plant processes.

Make an effort to give the intern activities that coincide with his/her interests.

Question the intern on aspects of the plant in which he/she lack understanding. Also, challenge them to understand why/how things work.

Make an effort to ask the intern if he/she has any questions.

Give the interns responsibilities so that they can see that they are making a difference.

Invite the intern to accompany you to licensee meetings and interviews.

Review the intern's plan of the day/week and give him/her suggestions on how to prepare and perform the activities.

Show the intern how to use the licensee's computer to perform all necessary tasks.

Show the intern how to locate and use plant documents. (TSs, FSAR, Emergency Response Procedures, P&ID's, Fire Protection Strategies, Old Inspection Reports, NUREG's, LER's, and Reg Guides.)

Have a list of acronyms available for the intern.

Intern Pre-Rotation Goals:

Each intern should make a list of his/her goals for the rotation and describe how these goals will cater to his/her desired permanent position.

Make contact with the Senior Resident and describe interests and goals.

Ask the Senior Resident for a plant brochure or other facility description documentation in order to become acclimated with the plant's design.

Complete as many ISA's as possible before the beginning of rotation.

Enter the rotation with an open mind and a pro-active attitude.

Intern Helpful Experiences/Hints:

Sit down with the SRI and review the goals and expectations of the rotation.

Have the SRI give you a site tour then spend a day walking around and familiarizing yourself with the layout of the plant.

Sit in on as many interviews as possible to view how the resident staff interacts with the licensee personnel. (Learning how to effectively interact with the licensee may be the most important thing that can be gained from the rotation.)

Accompany the resident staff on as many inspections as possible.

Use the allotted time at the plant wisely. Perform system walk-downs in accordance with

Piping and Instrumentation Diagrams (P&ID's) and the TTC Series Course Manuals.

Take status in the morning. Arrive at work early, print out the daily plant turn-over sheets, and attend the turnover meeting in the control room.

Keep good notes. Use a small note book that is easy to carry around.

Write down important concepts and key words.

Write up a plan of the day/week so that you always have something to do.

Get out in the plant, watch work activities, make observations, and ask questions when something "doesn't quite seem right." Have a questioning attitude.

Accompany any visiting DRS inspectors while they perform their inspections on site.

Use the week at the Regional Office effectively. (i.e., See the Sr. Public Affairs Officer and have ISA's 15 and 16 signed off; meet with an Allegations Coordinator get briefed; attend an Allegation Review Board meeting; meet with the Sr. Enforcement Specialist and have ISA-7 signed off; attend the status call in the morning and attend the morning meetings; meet with Emergency Response Specialist, meet with the FOIA Coordinator, and meet with the regional lawyer and get briefed.

Do not take things personally. Questions from the RI staff are meant to ensure that you understand key concepts and processes. There is a big difference between reading about plant systems/NRC processes and having to verbally describe/implement them.

REGION II DRS TEAM-BUILDING!

Staff members in RII/DRS, participated in a gingerbread house and gingerbread kids decorating contest. The contest was fun and helpful in team-building.

REGULATING AGAINST NUCLEAR TERRORISM–BEFORE 9/11

By Sam Walker, NRC Historian

For obvious reasons, the protection of nuclear plants and materials from terrorist assaults has been a major focus of NRC attention since the attacks on the World Trade Center and the Pentagon on September 11, 2001. But concern about terrorist threats to nuclear facilities went back long before 9/11; the regulations that were in place on that day resulted in large part from widespread and highly publicized worries about terrorist activities during the 1970s.

In the early days of commercial nuclear power, the Atomic Energy Commission (AEC) devoted relatively little attention to protecting nuclear plants from sabotage or attack and nuclear materials from theft. By the early 1970s, however, questions surrounding safeguards and security had taken on unprecedented urgency. At that time, there was a great deal of civil unrest and politically motivated violence in the United States. In the first three months of 1970 alone, bombs that killed six people and injured at least fifteen others exploded in American cities. Terrorist activities around the world became a source of growing concern. A report on safeguards commissioned by the AEC's regulatory staff declared in 1974: "Terrorist groups have increased their professional skills, intelligence networks, finances, and levels of armaments throughout the world." Terrorist acts, including skyjackings, kidnappings, murders, and executions, became so distressingly common that Newsweek labeled 1975 the "Year of Terror."

In that atmosphere, the AEC, and after the 1974 Reorganization Act, the NRC, imposed a series of new regulations to upgrade plant security and safeguards. To tighten security, the AEC drafted and the NRC later adopted rules that mandated improved alarm systems, internal communications networks, and control of locks, keys, and combinations. They also required enhanced barriers for access to restricted areas, more stringent procedures for identification and surveillance of persons entering a plant, and for the first time, armed guards. Because of fears that terrorists would acquire special nuclear materials to build an atomic bomb, the AEC and NRC took important steps to strengthen safeguards. These included much stricter rules to govern the transportation of nuclear materials, which the AEC staff regarded as the "weakest link . . . from the standpoint of vulnerability to theft and diversion."

The new regulations stirred a great deal of controversy. Nuclear critics complained that the rules were too lax to achieve their objectives, and paradoxically, that they were so intrusive that they threatened the civil liberties of American citizens. The nuclear industry, on the other hand, protested that the new requirements far exceeded the risks of terrorism and appeared to be "making mountains out of molehills." But industry objections had little impact on NRC rule-making. Benard J. Rusche, director of NRR, explained the agency's position: "Because of the increase in terrorism around the world, prudence seems to suggest the taking of increased precaution." By 1979, then, the NRC had placed in effect a series of requirements that established the framework for plant security and safeguards that existed on 9/11. Those measures did not, of course, provide specific protection against terrorists flying airplanes into reactor buildings.

NOTE: We asked Sam Walker to write this article for the newsletter. Thank you, Sam, for providing us with an interesting history lesson!

TIPS FROM AN OLD INSPECTOR ----- passed on to RIV inspectors on the day of retirement. We got permission to polish and print these tips and hope they will be helpful to you!

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1. After discovering a safety issue, an inspector should inform his management of the concern and then investigate it. Plant safety is very important. First investigate the safety concern and then determine whether the inspection can be credited to some baseline inspection procedure.

2. During an inspection think about the definition of the term operable - capable of performing its intended safety function. When you look at a piece of equipment, don't assess its operability in the current moment but think in terms of the impact of an existing performance deficiency or equipment malfunction on the long-term operability of that equipment.

> For example, you notice that there is a oil leak at the bottom of the LPSI pump's oil bubbler. (That oil bubbler provides oil to the pump's bearing housing and indicates proper oil level in that same bearing housing). You may rationalize that it is not a problem since the oil leak rate is slow. But you should think in the terms of the pump's long-term operability and whether that pump with that size oil leak can operate for 30 days post-LOCA . (Remember, the temperature of the oil will increase due to the hot coolant flowing through the pump which will cause the oil leak rate to increase.) In a post-accident scenario, the licensee may not be able to add oil since it is possible that there may be failed fuel particles in the coolant flowing thru the pump - causing the rad levels in the vicinity of the pump to be very high. The question becomes - can the oil leak rate become so fast that the oil level may not last for 30 days. Same logic applies to how much oil you can see in the bubbler or whether there is blockage in the piping from the oil bubbler to a bearing housing.

This is just one example, but the logic applies to many different situations you will encounter.

3. Become very knowledgeable about your plant if you are a resident so that you will be able to notice quickly when anything is wrong. Be aware of the normal ranges for the displayed indication on the control boards so that you know when there are abnormal readings.

4. Interface with the operators in the control room since they are the most knowledgeable, licensee staff about their plant. This will allow a mutual respect to develop between you and them so that they will feel free to discuss potential safety concerns with you

5. Never be afraid to ask a dumb question if you believe there is justification. It is better to ask a dumb question then to allow a potential safety concern to go undetected.

6. The primary responsibility of every single resident inspector is to do emergency response and to do it well. That is the reason that the resident program was established. Poor emergency response may be bad publicity for the NRC and the whole nuclear industry as well as jeopardizing your career. Emergency response is one of those things that you do very infrequently, but when you do it - you have to do it right. In the current NRC vernacular - it would be - a low frequency, high consequence evolution.

Lets Hear from you! Click on the "talk back" button L

We want Questions, Comments and Ideas for YOUR Newsletter!

REAL PROBLEMS/REAL SOLUTIONS

Emergency Power Supply to Technical Support Center (TSC) racked out 16 months

The inspector identified that the emergency power supply to the Technical Support Center (TSC) was racked out for 16 months and no compensatory measures were established. The problem was identified on June 29, 2004 during a reactor building tour. During a power board walkdown, the inspector noted that a 600 V breaker was tagged out and that the tag was dated February, 2003. **The inspector demonstrated a questioning attitude- why was the breaker tagged out for so long a.**

The inspector reviewed electrical drawings which showed that power to the TSC can be supplied from two sources, normal and emergency. The emergency TSC power is supplied from safety related buses from either 115kv or an EDG. Power to the TSC loads can be supplied from either of these sources through an automatic bus transfer. With the breaker out of service, if off-site power were lost, there would be no power to the TSC. **The inspector proactively investigated what was the potential safety impact of the breaker being racked out without assuming that the licensee had already thoroughly evaluated the matter.**

The breaker was allowed to remain out of service for such an extended period of time because the licensee's work control processes did not have a mechanism to track and assess plant impact related to the TSC function. The licensee corrective actions included restoration of the breaker, changing the work control process procedures to incorporate emergency preparedness aspects, and changing the monthly TSC availability checklist to include ensuring normal and emergency power was available.

This issue demonstrates the value of plant tours and of verifying a licensee's actions. The power board was located in a remote location; which also demonstrates the value of touring remote locations. This issue also demonstrates the value of discussing technical issues with NRC EP specialists who assisted with the EP significance determination process.

For additional information contact Gordon Hunegs, SRI, Nine Mile Point

Unique Insight - Inspectors Identify Error in Equipment Out Of Service (EOOS) Risk Model

During a "Maintenance Risk and Emergent Work Control" inspection in accordance with Inspection Procedure 71111.13, the inspectors identified an error in the model used by the licensee to estimate risk for on-line maintenance activities. Specifically, the EOOS model utilized by Palisades failed to identify an impact on the high pressure safety injection pumps when all component cooling water pumps were out of service.

During emergent maintenance on Component Cooling Water Pump (CCW) P-52A to replace the outboard motor bearing which failed, the inspectors reviewed the Operators Risk Report which was generated from EOOS to reflect plant risk with the emergent equipment problem. The inspectors determined that the report accurately reflected plant risk for the given conditions. However, the inspectors were aware that the other two CCW water pumps had outstanding work orders associated with them. Specifically, one pump had a degraded mechanical seal which was scheduled to be repaired in a couple of weeks and the other pump had various "minor" oil leaks. Because of these known deficiencies, the inspectors utilized the licensee's EOOS model to fully understand the impact on plant risk if more significant problems emerged with the other two CCW pumps. **The inspectors demonstrated a questioning attitude in asking why the working EOOS model did not evaluate the impact of the loss of CCW on the high-head SIS.**

The inspectors did not note any problems in the plant risk that was determined by EOOS for two CCW pumps being inoperable. However, when all three CCW were inoperable, EOOS calculated a "high risk" condition as expected, but the risk model did not indicate any impact on the high pressure safety injection (HPSI) pumps which was not expected. A loss of all CCW would result in no cooling to the shutdown cooling heat exchangers which would be required to cool the discharge of the containment spray pumps. Consequently, the required subcooling flow from the discharge of the containment spray pumps to the suction of the HPSI pumps during recirculation actuation would be lost. This should have been illustrated in the risk report by noting the HPSI pumps as being inoperable but was not. **The inspectors were proactively conducting inspections and were focused on safety, not just merely believing that the EOOS model was correct.**

The inspectors questioned the licensee's Probabilistic Safety Assessment (PSA) group as to why the HPSI pumps were considered operable if all CCW was out of service. After evaluating the specifics, the licensee's PSA group concluded that there was a logic error in the EOOS model and generated Condition Report CAP043271, "EOOS Does Not Reflect the Impact of Loss of All CCW on HPSI Pump Subcooling." In addition, the PSA group was developing the necessary changes to the risk model.

This issue was determined to be of minor significance in that the plant risk was accurately reflected by the EOOS model for the actual conditions. Also, the problem was only related to an incorrect risk determination by EOOS for a postulated condition of all CCW pumps OOS which was unlikely with the plant at power.

This value added finding demonstrates the importance of resident inspectors maintaining in-depth knowledge of integrated plant operations to recognize how safety-related systems can be impacted by problems with support systems; and, an accurate understanding of known plant equipment problems to ascertain the aggregate impact on safety-systems as well as overall plant risk. Contact the Palisades Resident Inspector office for comments or questions regarding this issue.

UPDATE: Look for a new SDP (IMC 0609, Appendix K) to be issued soon for findings similar to Maintenance Rule (MR) a(4).

For additional information contact, Jay Lennartz, SRI, Palisades

OPERATING EXPERIENCE HIGHTLIGHTS

(Reprinted to include hyperlinks)

There have been several interesting happenings in the Operating Experience (OpE) arena at the NRC over the past several months. As result of the recommendations associated with Davis-Besse Lessons Learn Task Force, the agency has taken a closer look at its reactor operating experience (OpE) program. To this end, the OpE Implementation Team was formed to support and bring forward the recommendations associated with the Reactor Operating Experience Task Force Report. This team, in a coordinated effort with the entire agency, has provided a detailed implementation plan that includes a strategy for a phased approach to identify, define, and implement a timely and effective NRC OpE program. The core OpE implementation team includes, Terry Reis (Team Lead), Sam Lee, Jack Foster, and Jose Ibarra.

Just recently the team released a draft version of the Inspection Manual Chapter (IMC) 03XX titled "NRC Operating Experience Program Implementation." After the first round of comments, this document will become an NRR Office Instruction. This draft document provides important details associated with various OpE program activities. There is also a draft Management Directive (MD8.X) titled "Reactor Operating Experience Program" in the works that will cover this Office Instruction as well as Office of Research OpE activities These program documents will be ready for use in draft form by the end of the year. These draft documents will be made available via your organization's designated representatives for final comments on November 1, 2004. On that note, the OpE designated representative's role is to help achieve divisional concurrence and communication on OpE program documents. Their long term role, however, is to act as advocates for the program within their respective organizations. If you have questions or suggestion relating to the new OpE program, please engage your OpE designated representative. The following is provided as the current list of OpE designated representatives.

Allan Barker, DIPM/IIPB/NRR
Al Tardiff, NSIR
Bob Schaaf, DRIP/NRR
Doug Pickett, DLPM/NRR
James Tatum, DSSA/NRR
Steve Unikewicz, DE/NRR
Mike Boyle, PMAS/NRR

James Trapp, Region I
Caudle Julian, Region II
Tom Kozak, Region III
Bill Johnson, Region IV
Will Madison, OCIO
Bennett Brady, DRAA/RES
Jim Morris, HR
Jit Vora, DET/RES

Along similar lines, there was an interesting article outlining a subscription email service for communicating OpE in the March 2004 Inspection Newsletter. Technology, provided by the Information Management branch within NRR, has taken this concept to the next level. These mailing groups, or simply referred to as communities of practice, will soon be available as a web base subscription service called "@ Operating Experience Community." This concept is currently being tested by the NRR/OES staff. Available communities of practice include: Auxiliary Feedwater System, Chemistry/Chemical Engineering, Control Room Habitability, Dose Assessment, ECCS, Emergency Diesel Generators, Electrical Power Systems, Emergency Preparedness, Fire Protection, Flood Protection & Missiles, Fuels, Health Physics, Human Performance, HVAC, Instrumentation & Controls, Main Steam & Condensate/Feed Systems, Materials/Aging, Physical Security, Power Uprates, Reactor Vessel/Piping/RCPB Leakage, Spent Fuel Storage & Load Handling, Station Service Water Systems & Ultimate Heat Sink, Steam Generators. If you would like to subscribe to these communities of practice and be part of the future web based service, please contact Kathy Gray via e-mail (KAG) or phone at 301-415-1166 to sign up. Additional information is located at:

http://nrr10.nrc.gov/rorp/roe-email-info.html.

In the January, 2004 Inspection Newsletter, Phil Harrell introduced a value added document that references associated generic communications with inspection procedures. This document in it's entirety provides operating experience reference's to all baseline procedures. It also provides technical sub-categories within the procedures. As part of the overall OpE program initiative, this document has been revised to be a web based tool that includes individual links to each generic communication. Simply find the IP (in the provided table), click and you're there. Then click the associated generic communication and you will have the document right there on your screen. The link for this dynamic document is located at:

http://nrr10.nrc.gov/rorp/ip-71111-01-historical-ref.html.

Things coming up next month for the Inspection Newletter's OpE Highlights - Web OpE data access point - Enhanced web development to provide near single access to all NRC operating experience information for availability and limited search functions. Meta-search capabilities to follow in the longer term. **Contact:** Jack Foster (jwf), 301-415-3647, Operating Experience Section.

USING YOUR CAMERA DURING THE INSPECTION PROCESS?

(REPRINTED TO PROVIDE LARGER FONT SIZE)

You might want to review the guidance below. As a result of a RII feedback form we developed this list clarifying existing guidance in IMC-0620 “Inspection Documents and Records”. In addition, we developed a table on the use of photos for informal training. We sent this guidance out to your Deputy Regional Administrators on October 5, 2004. To view the document in its entirety check out Digital City under the Nov. newsletter.

1. Do I need the licensee’s permission to take photographs?

   ! Yes, if a photograph is made by the NRC during an inspection, it should be preannounced and all participants informed. If someone objects, the objection should always be honored.
   On occasions where it is not possible to get the licensee’s permission in advance, be sure to notify the licensee as soon as possible.

   Use common sense in taking photographs as part of your routine inspection activities. Avoid taking Photographs of personnel or plant features related to security. Follow the licensee’s policy on the use of photographic equipment, including the prohibition of flash photography in areas of sensitive plant equipment.

2. What if the licensee does not grant permission?

   ! Discuss the licensee’s concerns with your supervisor.

3. Can I forward photographs to my management electronically without the licensee’s review?

   ! No. If a photograph is made during an inspection, it should be reviewed by the licensee to determine if it contains any personal privacy, classified, proprietary, or safeguards information.

4. Do I need something in writing from the licensee that says they have reviewed the pictures for safeguards, personal privacy and propriety information?

   ! No.

5. Is there agency guidance on how to forward Photographs that contain classified or sensitive unclassified information?

   ! Yes. Photographs that contain proprietary information or are for Official Use Only can be forwarded electronically (via email or fax) . Photographs that contain classified or safeguards information cannot be forwarded via email. However, if it is necessary to provide these photographs to management or to NRC experts to assist in making an inspection determination, you must print the photographs and forward them via a secure fax machine utilizing appropriate controls established in agency guidance. If secure fax capability is not available, the photographs must be mailed in accordance with NRC requirements and the approved NRC classified mailing address must be used if classified information is involved. Also, all photographs believed to contain classified or sensitive unclassified information must be marked in accordance with NRC requirements. The camera used to take the classified photographs must be protected as classified and secured when unattended.

6. How do I know when photographs must be retained ?

! If the photographs **are used** to substantiate an inspection finding and they do not contain classified or safeguards information, they are considered official agency records and must be retained and placed into ADAMS.
Examples of photographs used to substantiate an inspection finding include photographs that are relied on to support regulatory decision-making. In some cases, the photograph may be the sole basis for the inspection

When are photographs required to be destroyed?

! If the photographs **are not** used to substantiate an inspection finding and they contain personal privacy, classified, proprietary or safeguards information they must be destroyed in accordance with NRC requirements.
Examples of photographs not used to support an inspection finding include: (1) those photographs that are used as memory joggers to assist the inspector in finalizing the inspection report and (2) photos forwarded electronically to regional management to clarify or to discuss findings. Photographs of this nature are not relied on for regulatory decision-making.

If photographs are not used to support inspection findings can they be retained for training purposes?

! If the photographs do not contain personal privacy, classified, proprietary, or safeguards information, they may be retained for informal training purposes.If the photographs contain personal privacy, classified, proprietary, or safeguards information, then they must be destroyed in accordance with IMC 0620.

7. What if the licensee requests that a photograph be withheld from public disclosure because it contains personal privacy or proprietary information.

! If it is necessary to keep a photograph containing personal privacy or proprietary information, the licensee must request that it be withheld from public disclosure in accordance with 10 CFR 2.390 (b) (1). If the information is proprietary the request must be accompanied by an affidavit.

If the photograph is the basis for a finding, it should be edited by the licensee to delete the sensitive information unless that information is necessary to support the finding.

REMINDER–Under IMC-620 if the photograph contains personal privacy, classified, proprietary, or safeguards information it must be destroyed if it is not the basis for an inspection finding.

INSPECTOR NEWSLETTER

March, 2005

Our goal is to provide useful and succinct information to inspectors

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's inspection manuals.

GREAT CATCH!

In the article "Tips From An Old Inspector", in the January 2005 Inspector Newsletter, there was a slight error which was caught by the eagle eye of Carey Brown, a Resident Inspector at Clinton Nuclear Plant. He pointed out that oil in the sight glass of an oil bubbler does not really indicate the level of oil, in i.e. a pump bearing, because it is the level-setting ring in the base of the oil bubbler that actually maintains the level of oil in the pump bearing. The sight glass just indicates that there is oil available to the pump bearing. If the level-setting ring is installed incorrectly or is not functioning as intended then the oil in the bearing will not be maintained even though there is oil in the bubbler's sight glass. Thanks, Carey!

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Region I
Thomas Setzer, Reactor Inspector, DRS
Brian Wittick, Reactor Inspector, DRS
George Smith, Physical Security Inspector, DRS
Ryan Treadway, Reactor Inspector, DRS
Lauren Casey, Reactor Engineer, DRP
Heather Jones, Reactor Engineer, DRP
Michael Reichard, Health Physicist, DRS
Paul Krohn,SRI@ Pt. Beach to Br. Chief, DRP
Donald Jackson, promoted to Sr. P.E., DRP
Peter Eselgroth, Retired
Aniello Della Greca, Retired
Craig Smith, SRI@ Peach Bottom, resigned.
Region II
Tim Hoeg,SRI@Grand Gulf to SRI@St. Lucie
Thierry Ross,SRI@St. Lucie to Browns Ferry
Kathy Weaver,SRI@Turkey Pt. To HQ, License Renewal Section
Scott Stewart to SRI@Turkey PT
Jim Reece to SRI@North Anna
Mike Pribish to RI at Watts Barr
Jim Baptist to RI@Farley
Jim Policoski as PE@Br. 4
Mike King, CDP to RI @
Region III
Allan Barker,HQ, IIPB to PE, DRP
Ray Ng, to RI@Bryon
Pete Snyder, from Bryon to NSIR
Nick Shah, RI@Braidwood to PE, DRP
Region IV
Don Stearns PE to DRS Plant Support Branch
John Kirkland,Tech.Support to Projects Br E
Tim McConnell DRS to RI@ Diablo Canyon
Nancy Salgado,SRI@Palo Verde to NRR
Dan Livermore, new hire, DRS,Plant Engin.Br.
John Reynoso, new hire, DRS,Plant Engin.Br.
Cale Young, new hire,Technical Support Br

JUST DOING THEIR JOB?

Here's how one finding and a GREAT TEAM can make a difference!

HOW IT ALL BEGAN:

On January 27, 2005, while confirming the viability of local operator actions in response to a fire using inspection procedure 71111.05T "Fire Protection Triennial", NRC inspectors discovered incorrectly designed metering and protection circuits that were common to the redundant safety buses. The inherent problem with each circuit was that it was susceptible to common-mode failures which could electrically lockout and prevent re-energization of those redundant buses from offsite power sources and the Emergency Diesel Generators (EDGs). The team which discovered this problem was comprised of Robert Schin (lead inspector), Caswell Smith and Reinaldo Rodriguez (electrical inspectors), and Gerry Wiseman (fire protection inspector). Also on the team for training purposes were: Xavier Bellarmine and Joylynn Quinones-Navarro, both nuclear safety professionals. Senior reactor analyst (SRA) Walt Rogers participated in the bagman trip to help the team identify the risk important fire areas and equipment.

From left to right: Gerry Wiseman, Xavier Bellarmine, Joylynn Quinones-Navarro, Caswell Smith, and Bob Schin. Reinaldo Rodriguez (not shown)

THE ISSUE:

The team discovered that a fire in 4.16KV safeguards bus 3A could trip and lockout safeguards bus 3B. While looking into that issue, the team also found design problems with the common metering and protection circuits.

The normal power source for each of these redundant 4.16KV safety buses was an offsite power supply with an EDG as the standby power source. The faulty metering and protection circuit consists of current transformers (CTs), which step line currents for each power supply down to about 5 amps, for supplying a watthour meter for measuring power consumption, and overcurrent and ground fault relays for sensing overloaded and faulted conditions. For Crystal River station's design there were two common metering and protection circuits - one for the Offsite Power Transformer feed to each 4.16KV safety bus and one for the Backup Engineered Safeguards Transformer feed to each 4.16KV safety bus. Each metering and protection scheme had three CTs from the power source to bus 3A and three CTs from the power source to bus 3B. The wiring from the CTs, after going through each source's separate overcurrent and residual ground relays, was interconnected. The watthour meter was common to phases A and C of the interconnected CT circuits. The problem was that any type of failure, i.e., ground fault on the circuit wiring, in this interconnected circuit could be interpreted by the protection system as an electrical fault of both of the 4.16KV buses. Consequently, the relay logic for each redundant bus would lockout the breakers for all power sources to those buses causing them to be de-energized and they could not be re-energized until the relay logic was reset. The interconnection of the CT circuits which could have resulted in simultaneous loss of both safety buses was identified as a finding for not meeting the Single Failure Criteria, and also for not meeting the 10 CFR 50, Appendix R, design criteria for protection of one train of safe shutdown equipment from fire damage.

THE IMPACT:

Since the discovery of this safety issue, similar ones have been identified at Quad Cities, Dresden, LaSalle, Prairie Island, and Monticello. An information notice 2005-04 was issued alerting the nuclear industry to this problem.

Estimated Critical Position For Reactor Startup Was Incorrect Because Procedures Were Not Followed

While observing the licensee's preparations for a reactor startup, the inspectors verified the accuracy of the licensee's calculation for Estimated Critical Positions (ECP). The inspectors initially reviewed that calculation and found that the wrong Xenon worth was used for the estimated time of startup. The inspectors then determined that the independent ECP calculation generated by the Reactor Engineer was also incorrect. Even though the procedure used by Reactor Engineer for the 1/M approach to criticality specifically prohibited the use of Samarium (Sm) worth in an ECP calculation, with less than 12 Effective Full Power Days (EFPD), the Reactor Engineer had used it in his ECP calculation. **{The inspectors demonstrated questioning attitudes based on their knowledge of this evolution and of the licensee's procedure}.** This startup was being conducted following a unit outage. The critical rod heights, determined by those two ECP calculations, were found to be in error by approximately 13 steps in the non-conservative direction.

During questioning by the inspectors, the operators recognized they had made an error in their ECP calculation. However, they indicated that their error didn't matter, because they had relied on the Reactor Engineer's calculation. The inspectors pointed out that the procedure required independent calculations by Operations and the Reactor Engineer which were supposed to match. **{Based on their knowledge of how to perform the ECP calculation, the inspectors were able to identify errors in the licensee staff's calculations}.** The operators and the Reactor Engineer then modified their ECP calculations by excluding the Sm worth. The two modified calculations were found to match and were verified as adequate by the inspectors.

The inspectors also observed that the reactor operators were peer checked by the senior reactor operator during the reactor startup and actual board manipulations. However, the Reactor Engineer, using the procedure for the 1/M approach to criticality, was not peer checked. This observation was presented to plant management for their consideration. **{By being diligent in their performance-based inspection, the inspectors were able to identify a quality control issue}.**

The significance of this issue was that a safety barrier was lost when the operators deferred their independent review to the Reactor Engineer. If not for the inspectors' intervention, the wrong ECP rod heights would have been used even though the ECP calculations of the operators and Reactor Engineer did not match. The inspectors prevented the licensee from taking non-conservative actions during the approach to criticality. **{The invoked peer check of the Reactor Engineer, during the implementation of the approach-to-criticality procedure, provides an additional barrier to human error due to the attention to detail of the inspectors}.**

Prior to observing an evolution, the inspector needs to be familiar with the procedures that the licensee will be using. The inspector needs to identify and understand the critical steps in the procedures to ensure nuclear safety is maintained and to ensure compliance on those critical safety steps. Identifying the critical steps ahead of time will help the inspector to be prepared to detect any anomalies during the implementation of the evolution and to identify any procedural errors or omissions.

Contact: Eugene Guthrie, SRI, Catawba
RPT Number: 2004-006

Failure to Accomplish a Magnetic Particle Examination on the Intended Weld Area

While performing inspection procedure IP71111.08 "Inservice Inspection Activities", the inspector observed that a licensee contractor (examiner) was mistakenly performing a magnetic particle examination of the wrong area. The examination was to be of a reactor vessel head-to-flange weld not on a forged taper adjacent to the weld.

The examiner indicated to the inspector his technique, the examination area, and the remainder of the weld to be examined. The inspector observed that the referenced examination area appeared to be too high on the head to be a flange weld and queried the examiner as to exact location of the weld being examined. **{The inspector's observation demonstrates the importance of performance-based inspection, a questioning attitude, and understanding the subject matter of an inspection}.** The examiner indicated the weld's location and a brief discussion ensued. A review of the drawing provided to the examiner, during the pre-job brief, showed that the examination area was actually a forged taper approximately 7 1/8 inches above the actual weld centerline. The examiner had not confirmed the actual weld location by referencing the drawing but had instead visually identified the wrong examination area and commenced work. The examiner was subsequently shown the correct weld location, which was marked with equally spaced punch marks, as well as radiographic datum numbers.

As a result of this finding, the weld was subsequently 100 percent magnetic particle tested with volumetric exams also being considered. The licensee planned to conduct reverse pre-job briefs. While being observed by management, a worker would describe how he/she would positively identify a weld's location and other critical task aspects. Additional actions were expected after a more in depth analysis by a human performance specialist. **{As a result of the inspector's efforts, the correct weld was properly examined and the licensee undertook more extensive corrective actions to address the problem of examining the wrong welds during an inservice inspection}.**

This finding illustrates the importance of maintaining a critical eye and questioning attitude when performing any inspection activities and to question conditions which do not appear to be correct.

FOR MORE INFORMATION CONTACT: Tom Bilik, Reactor Engineer
RPT NUMBER: 50-341/04-008

(b)(6)

DID YOU KNOW THAT...... when not inspecting or involved in family activities, Neil O'Keefe, Senior Reactor Inspector, RIV, does wood working and carving. He builds furniture and has carved several rocking horses for his nephews. We asked for a picture of one of the rocking horses and were stunned by it's beauty and craftsmanship. Neil recently built a roof for his patio and in the last 3 years started playing the guitar. He's not ready yet to quit his day job!

OpE CORNER

Yikes, those folks have been busy–they recently filled two GG-15 Team Leader positions. Here is how the OpE section is organized:

Clearinghouse Team, Eric Benner, Team Leader
Analysis and Generic Communications Team, Ian Jung, Team Leader
Policy and Information Technology Team, Jack Foster, Team Leader

We think that the NRR Office Instruction, LIC-401, "NRR Operating Experience Program" (ML043570075) may be of interest to you. The OpE web-site is well maintained and has lots of good stuff on it–check it out at http://nrr10.nrc.gov/rorp/index.html. For assistance regarding operating experience, please feel free to get in touch with your regional OpE point of contact:

Region I	Omid Tabatabai	oty@nrc.gov
Region II	Ron Schmitt	rvs@nrc.gov
Region III	Ross Telson	rdt@nrc.gov
Region IV	John Kramer	jgk@nrc.gov

IT PILOTS

So far this year we have not identified any IT tools that will help you perform your job more efficiently. IIPB has conducted pilots on PDA's, pen scanners, tablet PC's, and —digital pens. If you know of an IT tool that may help you perform your duties more efficiently let's hear from you. IIPB's role is to conduct IT pilots, as appropriate.
Contact: Fiona Tobler

TIPS FOR USE WHILE INSPECTING ACCESS TO HIGH AND VERY HIGH RADIATION AREAS

ByJosé M. Díaz-Vélez, Health Physicist, R II

Sections 20.1601 and 20.1602, of the Title 10 Code of Federal Regulations, require licensees to prevent inadvertent and unwarranted overexposures to individuals, accessing high and very high radiation areas, at their facilities. A *high radiation area* means an accessible area in which radiation levels could result in an individual receiving a deep dose equivalent in excess of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source or from its radiation through adjacent materials. A *very high radiation* area means an accessible area in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rads (5 grays) in 1 hour at 1 meter from a radiation source or from its radiation through adjacent materials. An *accessible area* is an area that can reasonably be occupied by a major portion of an individual's whole body.

Regulatory Guide 8.38, "Access To High And Very High Radiation Areas In Nuclear Power Plants," issued in June 1993, provides guidance to licensees and NRC inspectors on this topic. However, recent inspection findings have caused the NRC to revisit this topic so that inspectors can be made aware of new trends and questionable compliance issues.

Figure 1. Simulation of actual condition with drum in front of shielded gate for locked High Radiation Area.

Figure 2. Access to a reactor cavity. Individuals can easily swing around this gate, and use the step ladder attached to the wall to go into the area. (digitally enhanced picture).

During plant tours, inspectors should be aware of (1.) objects adjacent to a radiation barriers and (2.) of ineffective barriers for high and very high radiation areas. Either of those two can cause a breakdown in the licensee's access-control program. For example, 55 gallon drums placed against the gate and/or a wall of a locked high radiation area (LHRA) barrier can reduce its effectiveness by aiding access to the LHRA (Figure 1). The inspector should be aware of additional structures near a radiation barrier that may allow it to be bypassed (e.g., step ladders either attached to the walls or nearby.)

While assessing the effectiveness of access controls to a radiation area, an inspector should do the following: (1.) Ensure that walls do not have openings and are of sufficient height (greater than 72 inches) so that an individual can not enter the radiation area with apparent ease. (2.) Watch for gates secured with relaxed chains, which could allow access pass the locked gate. (3.) Look for gates with adjacent barriers that are ineffective in limiting access, such that an individual could swing around gate and gain access to the area (Figure 2).

While proper posting and locking of these areas, along with the education of plant personnel, are elements of a good access-control program, the effectiveness of these controls are case specific. If you believe access to the area can be gained without any special effort, then you may have identified a weakness in the licensee's access-control program. Remember that LHRA barriers should not be easy to circumvent and are intended to deter unauthorized access due to lapses in judgement or misunderstanding of radiation work permit (RWP) requirements. They are NOT required to prevent unauthorized access due to an act of deliberate misconduct.

"My Rotation To Headquarters"

Are you thinking about a rotation to HQ? I'd give it some serious consideration if you want to broaden your perspective of the agency, and understand the dynamics of working at NRC headquarters.

I'm Mark Giles, the Senior Resident Inspector at the Calvert Cliffs Nuclear Power Plant. I've been in the resident inspector program for about 8 years, 6 years as the resident at Catawba, and the rest here at Calvert Cliffs beginning in August, 2003. After getting settled at Calvert Cliffs, I learned about the agency's mentoring program and decided to get involved. My mentor, Brian Sheron, and I decided that a rotation to HQ would help my continued career development. This rotation would allow me to learn more about the agency, as well as support the development of additional working relationships that could only benefit me in my current senior resident role.

My 3 month rotation to NRR began in August, 2004, working in DSSA's SPLB branch with John Hannon and Dave Solorio. I was assigned the Lead Project Manager (PM) role for GSI-191, Assessment of Debris Accumulation of PWR Sump Performance. As the Lead PM, I was intimately involved in the development and issuance of SECY papers, a Generic Letter, a Safety Evaluation, a Communication Plan, Bulletin responses and RAIs, as well as the coordination of team status update meetings and meetings with NEI and various licensee's. I also developed numerous briefing packages pertaining to GSI-191. With these challenges came excellent opportunities for which I was quite thankful. A few of the most notable opportunities included giving presentations during ACRS and CRGR meetings as well as the NRR Technical Bilateral exchange meeting with a group of Japanese visitors. The NEI workshop I attended at St. Pete Beach, FL in December was also a highlight.

I returned to Calvert Cliffs around November 1st and resumed my SRI role. I've stayed plugged into the GSI-191 team's efforts, however, and accompanied the team to an "active sump" demonstration conducted at a General Electric test facility in Princeton, NJ in January, 2005. In addition, the GSI-191 team will be visiting Calvert Cliffs on March 7th, during an ongoing refueling outage, to perform a containment walkdown. This should be very beneficial to the team since Calvert Cliffs is currently planning to install "active sump screens" in lieu of larger passive sump screens to ensure compliance with 10 CFR 50.46 and the revised sump blockage evaluation methodology. The resolution of GSI-191 will require plant modifications in most all PWR utilities.

Well, that's the summary of my rotation. My advice if you haven't done a rotation at HQ, go for it. If you like a fast-paced environment with plenty of challenges, you'll have fun. If you want more insights, or just want to chat, give me a call at 410-586-2626, or email me at mag@nrc.gov.

CONNECTING PEOPLE AND KNOWLEDGE
by Allan Barker IIPB

Inspector communications will take on a different look this month when the @InspectorCommunity Forum is released for use. The @InspectorCommunity Forum was developed through Regional support to deliver operating experience and to provide a message board for inspectors. The categories to post messages include inspection procedures and reactor type. Do you have some "How to" or "Have you seen" questions? The content of your message will be your personal view and not official agency guidance or policy. A simple rule to follow is to state facts not conclusions.

In addition to inspection procedures and reactor type there are categories for inspection technique, inspecting human performance and inspectors using operating experience. The inspection technique category is to describe techniques based on your experience that have worked well for you. The focus is to describe the technique and the reason(s) why the technique was used. Then other inspectors can apply the technique with their experience and post their own lessons learned.

How can you use human performance causal codes to prepare for an inspection? How can you organize and use operating experience during inspection preparation or field activities? How did you use that specific operating experience document? What we learn from these categories can further enhance the application of operating experience.

The remaining two categories are for communicating to the Headquarters Operating Experience Section and to collect feedback on the @InspectorCommunity Forum. The next phase will be to develop a library for each baseline inspection procedure. If you click on "BIP" for category 7111115 - Operability Evaluations, you can view a library format being considered. Your feedback on the library format and what it offers is welcomed!

When you register, consider the option in your profile to be a resource contact for a science and engineering technology and/or a specific reactor type. The search option of the @InspectorCommunity Forum will assemble a list of contacts for either one. The @InspectorCommunity Forum will require inspector participation, the resulting value will be connecting people and knowledge.

INSPECTOR NEWSLETTER

Our Goal is to Provide Useful and Succinct Information to Inspectors

May, 2005

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's inspection manuals.

CLOSED TASK INTERFACE AGREEMENTS (TIA's)

DLPM's POC for TIA's is Steve Monarque.

TIA #	PLANT	ISSUE	ADAMS #
2004-006	Hope Creek	Reactor Circulation & HPCI	ML050120255
2004-002	D.C. Cook	Degraded Voltage Protection	

OPEN TASK INTERFACE AGREEMENTS (TIA's)

TIA # STATUS	PLANT	ISSUE
2003-03	Turkey Pt. 3 & 4	Review of SBO strategy/analysis
2004-04	Surry 1 & 2	50.54X Clarification
2004-05	Salem 1	SFP Boric Acid Leakage
2004-03	Indian Point 2	Electrical Cable Separation
2005-01	Vermont Yankee	Ungrounded 480 VAC

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CHECKING THOSE LEAKS!

By Marc Ferdas, Hope Creek, RI

HERE'S WHAT HAPPENED: On February 8, 2005, unidentified leakage at Hope Creek increased from 0.15 gpm to 0.25 gpm. Over the next 90 days, the leakage continued to gradually increase until it reached 0.73 gpm on March 27, 2005. Chemistry samples taken by the licensee over the period indicated that the leakage had properties of reactor coolant system (RCS); however, the licensee could not determine if it was pressure boundary leakage. The licensee conducted a downpower and drywell entry on March 28, 2005, to identify the source of the leak. During the drywell entry, the source of the unidentified leakage was identified as being from a chemical decontamination connection (also known as the maintenance connection) on the 'B' reactor recirculation piping. Inspections in the drywell identified approximately a 4ft plume from this area. When the licensee removed the insulation from the 4 inch decontamination pipe connection to the 28 inch 'B' reactor recirculation piping (suction side of the pump) they found a weld crack that was approximately 3 inches long and through wall-- **YIKES!** Hope Creek was taken to cold shutdown to repair the leak

3" Long Through Wall Crack on 4" Decon. Connection

Reactor Coolant System Steam Leak from Crack in Decon. Connection (4ft Plume of Steam from Crack in Weld)

THE INSPECTION PROCEDURE: The resident inspectors tracked the leakage daily in accordance with IMC 2515, Appendix D, "Plant Status. Appendix D, revised in January, 2005 to incorporate lessons learned from Davis Beese and regarding assessing RCS unidentified leakage rate trends at PWRs and BWRs. The IMC provides action levels/triggers where the inspector should take actions to ensure the licensee is monitoring and taking appropriate actions to reduce RCS or unidentified leakage when significant leakage trends exist and to ensure that the proper levels of NRC management are informed of potential adverse trends in RCS unidentified leakage. The resident inspectors entered Action Level 1 on 2/19/05, Action Level 2 on 3/10/05, and Action Level 3 on 3/17/05. The residents implemented this revised IMC by developing a **spread sheet*** which calculated the action levels and on a daily basis tracked the unidentified leakage and compared the daily values to the action level/trigger limits

THE END RESULT: The inspectors identified that the licensee's administrative shutdown limit (1.5 gpm change in a 24 hour period) was not as conservative as they had intended and resulted in the licensee revising their administrative shutdown limit to a total leakage rate of 1.5 gpm.

*For your convenience the inspectors agreed to provide a copy of their spread sheet developed in Quatro Pro. Click here for a copy of that spreadsheet

FOR ADDITIONAL INFORMATION CONTACT:

Marc S. Ferdas, Hope Creek, Resident Inspector
Theodore Wingfield, Project Engineer, Region I
Jim Isom, IIPB, IMC-2515 Lead

INSPECTOR COMMUNITY FORUM

The purpose of the Inspector Community Forum is to facilitate communication between inspectors about items of interest and to develop libraries to aid inspectors preparing for inspections. The Forum does not contain official IIPB guidance. Dave Allsopp, IIPB, is now responsible for monitoring the Forum and is available to answer any questions you may have. We found several items that may be of interest to you:

> A new category, Temporary Instruction (TI) 2515/163, was added to the forum based on a request by regional inspectors. Updated FAQ's related to this TI are available by clicking on the "IMC" in the library for 2515/163.
>
> An unusual electrical failure mechanism (insulation offgassing that plates out on electrical contacts) was found at Fermi. Check out Tim Steadham's comments in the IP 71152 category.

NEXT STEPS: The IP historical references (developed in Region IV - see the lead article in January 2004 edition of the Inspector Newsletter) are being added to the library for each baseline IP. When complete, all the baseline IPs will display on the Forum.

RESIDENT ROTATIONAL SCHEDULES have been updated and posted on Digital City.

EMERGENCY DIESEL GENERATOR FUEL OIL FILTER POSITION

POINT BEACH, NPP
by Robert G. Krsek, SRI, Point Beach

Here's what happened: In January, 2005, the resident inspectors were performing a partial system walkdown of the emergency diesel generators at Point Beach following routine testing. The inspectors noted that on all four emergency diesel generators the fuel oil suction strainers and fuel oil filters had the duplex control valve lever set to both when proper operation of the system would have the control valve lever set to a single strainer or filter. Discussions with plant operators and system engineers indicated that the levers on all the diesels were always set to both. As part of the identification and resolution portion of the inspection procedure (71111.04Q "Equipment), the inspectors performed a search of the corrective action system to ascertain whether this issue had ever been identified at the site previously. The inspectors noted that this condition adverse to quality was previously identified and evaluated as requiring action one year prior; however, the action to correct the mispositioned control levers was closed with no actions taken.

The End Result: In this case, the inspectors identified that the failure to correct this condition adverse to quality was a Green Finding with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI.

Some facts about emergency diesel generators: : Fuel oil systems for safety-related emergency diesel generators typically have a fuel oil suction strainer assembly and a fuel oil filter assembly as part of the engine fuel oil system. For safety-related nuclear plant applications, both the strainer and filter were purchased with the diesel engines as duplex assemblies. The duplex assemblies have two strainer or two filter elements of equal capacity connected in parallel by a control valve assembly that allows the process stream to be diverted from one strainer or filter element to the other without interrupting flow. Therefore, when the diesel engine is in operation and a high fuel oil differential pressure alarm is received, manual operator action can be taken to manipulate the duplex control valve lever from the inservice fuel oil strainer or filter to the standby strainer or filter. This would then allow for the diesel engine to operate continuously without the need to shut the engine down to change either the strainer or filter.

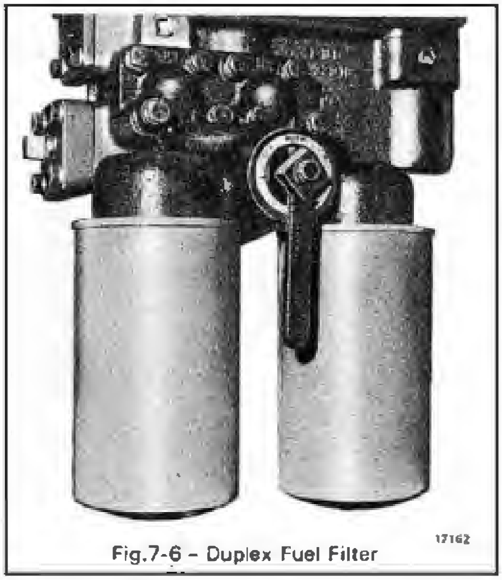

Fig.7-6 – Duplex Fuel Filter

NOTE that the duplex control valve lever can also be selected to the 'Both' position, which has both strainers or filters on the duplex assembly in service. Use of the 'Both' position defeats the purpose of having a duplex unit installed on the diesel engine, as the diesel engine is required to be shutdown to change the strainers or filters in the event of a high fuel oil differential pressure caused by strainer or filter clogging. Even though plant technical specifications require strict controls on the quality of fuel oil properties, it is anticipated that when diesel engines are run continuously for long periods of time the fuel oil filters may clog and would require swapping of filter elements. Therefore, the correct position of the control valve lever in the duplex assembly for this application is in the single element strainer or filter mode. In addition, since the diesel engines are typically only run for short periods of time for surveillance tests, increased fuel oil pressure during testing while in single element filter or strainer mode, can provide an earlier indication of diesel engine problems.

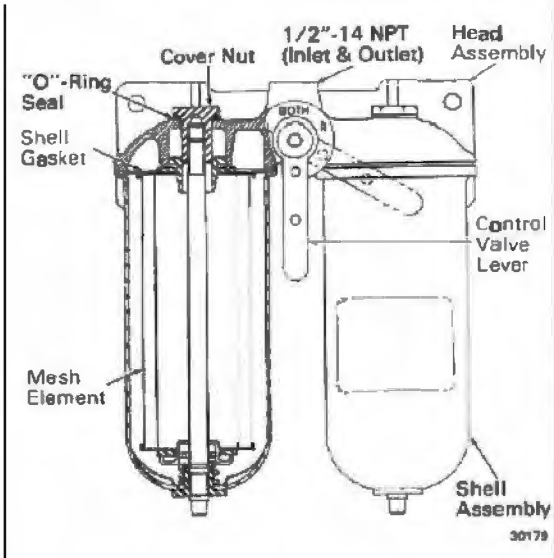

Fig.7-10 – Duplex Fuel Suction Strainer

For Additional Information Contact:
Robert Krsek, SRI, Point Beach

INSPECTOR HAPPENINGS

REGION I
Blake Welling, From Senior Reactor Inspector, DRS to Senior Project Engineer, DRP
Christopher Hott, From Reactor Inspector, DRS to Health Physicist DNMS
Michael Reichard, From Health Physicist, DRS to Health Physicist, DNMS
Chaudhary Suresh, From Reactor Inspector, DRS to Health Physicist, DNMS
A. Randolph Blough, From Director, DRP to Director, DRS
Brian Holian, From Deputy Director, DRP to Director, DRP
Brian Wittick, Ffrom Reactor Inspector, DRS to Resident Inspector, Indian Point 3, DRP
Kenneth Jennison, Senior Reactor Inspector, DRP, retired
Wayne Lanning, Director, DRS, retired

REGION II
Thierry Ross, to SRI@Browns Ferry
Tom Morrissey, to SRI @ Crystal River
Brian Anderson, to RI @ Vogtle
Kathy Weaver, leaving TP to position in NRR
Chuck Casto, from Director, DRS to Director, DRP
Vic McCree, from Director, DRP to Director, DRS
Joe Shea, to Deputy Director, DRP

REGION III
Greg Roach, Reactor Engineer to Braidwood Resident
Ray Ng, Reactor Engineer to Byron Resident
Carla Roque-Cruz, Reactor Inspector to NRR

DID YOU KNOW THAT..........

Every year Geoffrey Wertz, RII, Sr. Resident Inspector at the BWXT facility in Lynchburg, Virginia, donates a week of his time performing home repairs for a small coal mining town in Hurley, Virginia. His trip is sponsored by the Catholic Community in Lynchburg, Virginia. Members pay their own costs ($175) and strive to involve church youth.

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Geoffrey repairs roofs and floors, installs windows, paints and cleans, all of which to get houses ready for another winter. It's hard work but there are other planned activities such as evening discussions about coal mining and its environmental effects, a trip to a bowling alley, and basketball game with local residents. Most of the participants find this every rewarding and return the following year.

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The team in front of the Community Center. Geoffrey is in the far back on right side .

The Sheetrock Replacement Team on the porch of their project house.

Hurley is located in the coal fields and mountains of Central Appalachia. The community is isolated with a population of approximately 5,048. Seventy-five percent of the residents live on Black Lung Miner Disability or on Social Security Benefits. Most of these residents are unable to perform physical work. The Hurley Community Development project worked hard to establish mandatory trash collection in 1998. Prior to then, trash was dumped down mountains sides and at the mouth of hollows. During spring floods the trash would be washed down the many streams and creeks, littering banks and polluting water. There are no movie theaters or fast food establishments—the closet town with these amenities is 45 minutes away.

SEND US YOUR STORIES!

Reactor OpE Information Gateway

Continual Learning Through Knowledge Sharing

OpE Gateway - http://nrr10.nrc.gov/ope-info-gateway/index.html

Contacts: Jack Foster (jwf) and Brett Rini (bar3)

Daily Reports

- Event Notification (internal, external, search function)
- Power Reactor Status (by Region, summary info, 28-day hold)
- Morning Reports (current, archive)

OpE Information Sources - hyperlinks to explanations of the various OpE datasets with limitations and assumptions associated with the search capabilities

- Inspection Findings (ROP PIM search, ROP historical performance, performance indicator)
- Generic Communications (search function, cross-reference to IP)
- 50.72 Event Notifications (search function, archive)
- 50.73 Licensee Event Report (INEEL search, ADAMS search)
- Inspection Report (ADAMS search, action matrix, ROP)
- INPO SEE-IN Documents (SOER, SER, SEN, O&MR)
- Industry Trends Program
- Part 21 Reports (archive, ADAMS search)
- Morning Reports (archive, current, ADAMS search)
- Preliminary Notifications (archive, ADAMS search)
- International OpE (Incident Reporting System, International Nuclear Event Scale)
- Office of RES Studies
- Accident Sequence Precursor
- OpE Briefing (monthly briefings)

@OpE Community - http://nrr10.nrc.gov/forum/index.cfm?selectedForum=03

- Searchable Web-based forum for posting of significant OpE
- updated whenever a communication item is sent out to one or more topical distribution groups

Notable OpE Information

- updated list of recent issues, events, documents, and issues for resolution
- provides links to more information or actual documents (ADAMS accession nos)

Reference Documents

- LIC-401, "NRR Reactor Operating Experience Program"
- MD 8.7, "Reactor Operating Experience Program"
- LIC-503, "Generic Communications"
- Relevant Inspection Manual Chapters & NUREGs

Spiral Wound Gasket in Primary Circuit

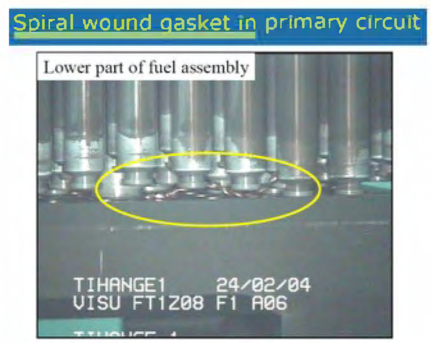
Belgium, Tihange Unit I, 2002

We thought you might be interested in this event. Sometime back you asked for articles on significant foreign events. Thanks to the OpE web-site we were able to easily find this event.

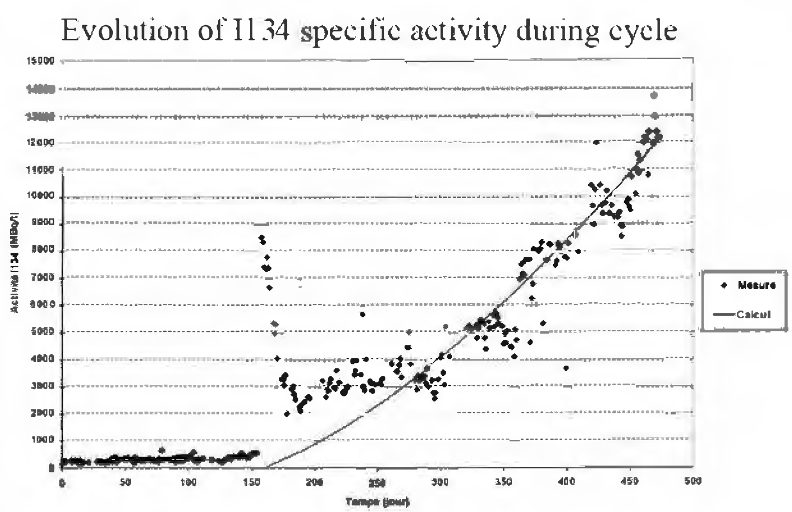
In October 2002, a leaking check valve was detected in the safety injection system at Tihange Unit 1, a PWR plant in Belgium. The leaking check valve was in the lineup of a safety injection train from the RWST to the primary circuit hot leg for loop number 1. Upon investigation, the plant personnel determined that the check valve was clogged with remnants of a spiral wound gasket. The gasket was removed and the check valve then functioned normally.


Destroyed gasket found in check valve

About a month later there was evidence of fuel damage in that the specific activity of Iodine 134 in the primary coolant increased approximately sixty times above normal levels. At the next refueling outage, it was determined that 15 fuel rods on 4 fuel rod assemblies had been damaged. There was also evidence of damage to steam generator tubes. The utility was forced to inspect all tubes in the steam generators and to look for additional damage in fuel rods.



The utility determined from this event that the Foreign Material Exclusion Program is a MUST. This program should be maintained and all personnel should abide by the rules of that program. The additional lessons learned were the following:



(1) Once debris are discovered take the necessary actions to remove ALL debris immediately from the primary system because of the potential damage to safety-related equipment (i.e. fuel rods, steam generator tubes, etc.), the possible increase in radiation levels in all primary system piping and associated equipment , and the potential damage to control rod drive mechanisms; (2) remember that the fuel assembly anti-debris filters can not remove all debris which can potentially damage fuel rods; and (3) do not flush piping systems and connected equipment since there is the potential that this may spread the problem to other areas instead of resolving the problem.

The OpE folks provided us with some additional information. Click here for a copy of IN 2004-10 "Loose Parts in Steam Generators" . For additional information on foreign material go to the Inspector Community Forum for on-going discussions

WE HEARD YOU

by Fiona Tobler and John Davis

In the last issue we asked for suggestions/comments on IT tools that would help you work more efficiently. We received two comments from RIV, that are discussed below. Remember that IIPB, working with OIS (formerly OCIO), is open to conducting pilots that would help you work more efficiently.

"One IT tool that would assist inspectors is a CD "burner". The comment was that with a CD burner on the desktop PC the inspector could quickly download various documents and make an inspection specific CD to take on the inspection–saving time and effort and allowing the inspector to use inspection time more efficiently. Here is what we found out------CD Burners can be purchased and installed by your Regional IT folks. In addition, if all you need is temporary storage for transporting data to and from work, Thumb drives are a quick and effective, reusable resource. Thumb drives can be purchased and come in capacities including 128MB, 256MB, 512MB, 1GB, and 2GB. They plug into your PC's USB port. If you have XP at home and at work, the thumb drives can be used on both. Note: USB ports are not active on Windows NT so if you have NT at home, you can not use a thumb drive. Finally, when your PC is next refreshed (replaced with newer hardware) they will come equipped with a DVD ROM and CD burner. OUR ADVICE: Make your regional IT coordinator aware of your needs.

The second comment was "what is being done to improve connectivity at resident sites". OIS has a project underway to re-architect the resident inspector access methods to increase performance and customer satisfaction. John Davis, OIS, is responsible for this initiative. You may have provided comments in a survey sent to RI's last year. A copy of the final report was sent to regional IT coordinators. Here's the status of this report in a nutshell. The surveys provided invaluable information that led to a new Resident Inspector Desktop design. Since speed and reliability were the most common issues, the new design will simplify login and make it faster. It will leverage the Citrix servers to provide most of the applications so speed is improved as is file sharing . Informs has been reconfigured to work locally on the PC though you must still be aware that locally stored forms may contain personal information (this has always been the case with Informs - but there is an initiative underway to replace Informs within the next year). The new image has been tested with Microsoft Office XP and is ready (most regions have licenses for MS Office - if you need MS word etc, ask your regional IT group). The new desktop image will be piloted this summer in selected locations. Pilot site selections will be made by each regional office.

> IN THE MEAN TIME:. RIII (Mike King and Tom Magee) found an interim solution to improve connectivity that works. This was blessed by OCIO and was shared with regional IT coordinators and is being deployed to the resident inspector sites in both Region III and Region IV.

Any questions regarding the above should be addressed to your regional IT coordinators.

INSPECTOR NEWSLETTER

Our Goal is to Provide Useful and Succinct Information to Inspectors

July, 2005

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's inspection manuals.

A NEW LOOK AT THE FEEDBACK PROCESS

The ROP Feedback page on the NRR website now has a new look. The coordinator of the feedback process has added a list of inspection procedures (IPs) and manual chapters (MCs). When an IP or MC is selected then you gain access to all the past and present feedback forms and their status - closed, open, or pending change notice related to that particular IP or MC. The data on this site will be updated on a monthly basis . Any comments or suggestions on this new face or on the feedback process in general should be directed to F. Paul Bonnett.
Go to: ROP Digital City

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RESIDENT ROTATIONAL SCHEDULES

have been updated and posted on Digital City.

CLOSED TASK INTERFACE AGREEMENTS (TIA's)

DLPM's POC for TIA's is Steve Monarque.

TIA #	PLANT	ISSUE	ADAMS #
2004-06	Hope Creek	Reactor Circulation & HPCI	ML050120255
2004-02	D.C. Cook	Degraded Voltage Protection	ML043480350
2004-03	Indian Point 2	Electrical Cable Separation	ML043440083 (non-publicly available)

OPEN TASK INTERFACE AGREEMENTS (TIA's)

TIA # STATUS	PLANT	ISSUE
2003-03	Turkey Pt. 3 & 4	Review of SBO strategy/analysis
2004-04	Surry 1 & 2	50.54X Clarification
2004-05	Salem 1	SFP Boric Acid Leakage
2005-01	Vermont Yankee	Ungrounded 480 VAC
2005-02	Hope Creek	Recirculation System Integrity
2005-03	Edwin Hatch	Leak Testing MS Valves
2005-04	VCSummer	Tornado Vulnerability
2005-05	Columbia	Leak Testing MS Valves
2005-06	Palisades	Seismic Design Issue
2005-07	Vermont Yankee	Offsite Direct Dose

ARE THE FLOOD WATERS RISING AT KEWAUNEE?

HERE'S WHAT HAPPENED:

While reviewing internal flood protection measures at Kewaunee Nuclear Power Plant in accordance with IP 71111.06, the inspector determined that an area adjacent to the turbine building basement (safeguards alley) which contains safety-related equipment such as the AFW pumps, 480 volt safeguards buses, emergency diesel generators, and the remote shutdown panel, was susceptible to internal flooding events. Specifically, the inspector determined that safeguards alley communicated directly with the turbine building sump via a direct piping run with no check valves to prevent water from backing up from the turbine building sump into safeguards alley. In addition, there were no installed flood barriers specifically designed to protect equipment in safeguards alley from turbine building floods. Further, the AFW pump lube oil coolers discharged directly into a trench in safeguards alley, which could further contribute to flooding events in safeguards alley during operation of the AFW pumps.

BACKGROUND INFORMATION ON THE POTENTIAL FOR FLOODING IN THE TURBINE BUILDING

In 1972, the AEC made an inquiry to the licensee about flooding that might adversely affect the performance of safety-related equipment . The licensee responded by stating that the failure of specifically identified non-category 1 (seismic) piping could adversely affect the performance of engineered safety systems but that the functional purpose would not be jeopardized because of the redundancy and arrangement of said equipment. The inspectors identified additional flooding sources other than those identified in licensee's response to the AEC in 1972 and asked the licensee to evaluate their affect on the equipment in safeguards alley.

The licensee's initial response to this issue was that flooding in the Turbine Building and its affect on equipment in safeguards alley was outside the plant's licensing basis and was therefore not an operability or reportability concern. The licensee recognized that the risk to the plant was higher than previously thought and implemented compensatory actions to address the concern. These actions included the temporary installation of sand bags in strategic locations and locating a flood watch in safeguards alley.

Figure 1 -NEWLY INSTALLED FLOOD BARRIERS AT KEWAUNEE

The inspectors did not accept the licensee's position that internal flooding events were not part of the plant's design basis and treated this issue as an unresolved item. The issue was turned over to the High Risk/Low Margin Engineering Team Inspection for further review. The resident inspectors worked closely with the engineering team and together, it was determined that the USAR designated equipment in safeguards alley as Class 1 and that measures should be undertaken to protect that equipment from flooding due to the rupture of a pipe or tank so that the Class 1 function was not impaired.

In addition, the inspectors became aware of a relatively minor flooding event which occurred in

2003. A tank located in the turbine building overflowed into the turbine building sump which then backed up into safeguards alley through the open pipe connecting the areas. The AFW pumps were operating at the time with the lube oil coolers discharging into the trench which, in combination with the water from the turbine building, resulted in water overflowing the trench in safeguards alley. The licensee had not taken any corrective actions for that flooding event. Therefore, this issue is an NRC-identified issue for which the licensee had previous opportunities to identify and correct.

THE END RESULT

Following extensive discussions with the inspectors and regional management, the licensee determined that the affects from internal flooding were part of the plant's licensing basis. Concurrently with this issue, the licensee was addressing NRC-identified design deficiencies with the AFW system. The licensee shut the plant down on February 20, just after conclusion of the High Risk/Low Margin Team Inspection, to address the AFW system design issues. The plant remained shut down until early July and during the outage, the licensee implemented permanent modifications to the facility to address both the flooding and AFW system design deficiencies. Region III is conducting final inspections to verify licensee assumptions associated with internal flooding events. This issue will be processed through the significance determination process upon completion of the inspection. **The Region III inspectors and staff involved with this inspection are to be applauded for their fine work.**

IIPB REGIONAL ROP COORDINATORS

The regional IIPB Coordinators are presented below at the request of regional management so that regional staff will know who to initially contact for ROP concerns.

REGION I - Serita Sanders - Phone - (301-415-2956) ; email - SXS5@nrc.gov

REGION II - Michael J. Maley - Phone - (301-415-2919) ; email - MJM3@nrc.gov

REGION III - Lois M. James - Phone - (301-415-1112) ; email - LMJ@nrc.gov

REGION IV - Jonathan Ortega- Luciano - Phone (301-415-1159) ; email -JXO4@nrc.gov

Inspector Spotlight of the Month

John X. Zeiler

John Zeiler (JXZ)
Sr. Resident Inspector

John Zeiler is in the Inspector Spotlight this month because of his outstanding performance at V. C. Summer during the week of May 30, 2005 in identifying the three findings below. **Good Work John!**

1.) While observing the plant's heatup to Mode 3 in the Control Room, he identified that the operators had failed to place the control switch, for a standby RHR pump, in the pull-to-lock position when RCS temperature rose above 250 degrees F. The control switch is placed in the pull-to-lock position to prevent the RHR pump from automatically starting and its suction valve to the RWST opening for an ESFAS signal per TS 3.5.3 in Mode 4. Flashing could occur if the standby RHR pump is aligned to the RWST due to the mixing of cold RWST water and hot RCS water since the RCS to RHR loop suction isolation valves are required to be open on both RHR trains until 300 degrees F for cold overpressure protection. The operators took immediate action to place the control switch for the RHR pump in pull-to-lock (at 262 degrees) and plant management was notified who directed that the heatup be halted until a subsequent review was conducted of the mis-configuration. A Design Engineering evaluation later calculated that flashing would not have occurred, taking into account the actual system conditions in the RCS and RWST.

2.) While preparing to observe reactor physics startup testing in the control room, he identified that the licensee had failed to update the Core Operating Limits Report (COLR) for the new operating cycle and the previous cycle COLR was still available for potential use. During startup testing, various core (i.e., fuel, control rods, poison configuration) and RCS parameters are referenced from the COLR. Upon identification, the licensee immediately obtained the current cycle COLR and initiated a Condition Evaluation Report (CER) to address why it was not issued prior to Mode 3 as required by procedures.

3.) Approximately 10% of the control room annunciators, associated with the A train equipment, failed in the alarm state, i.e., "locked-in" due to an annunciator power supply failure on March 24, 2005. He observed that the operators had not adequately assessed the situation in that they believed the annunciators would still reflash when they would not). Until being prompted by him, they had not implemented compensatory measures, such as alternate computer or local monitoring of equipment status that was impacted by the loss of alarm function. In addition, the board operators had not validated individual alarm conditions by reviewing Alarm Response Procedures until being questioned by him. He noted that the licensee did not have abnormal operating procedures to address the general loss of annunciators. He confirmed that the licensee had not lost >75% of the control room annunciators which would have met the declaration for an ALERT. All but one alarm was returned to normal within approximately two hours. The licensee completed an extent of conditions and industry benchmarking in May which cemented the decision to develop abnormal operating procedures for loss of annunciators and helped to establish the level of detail for those procedures.

INSPECTOR COMMUNITY FORUM

One of the purposes of the **Inspector Community Forum** (include link???) is to facilitate communication between inspectors. Here's an example of the use of the forum:

On May 18, 2005, Kenneth Kolaczyk, SRI, Ginna submitted the following question:

While touring the containment after a recent shutdown, I noticed that a light sheen of oil had collected around both reactor coolant pumps and the adjacent area. The licensee believes the oil was vaporized residue that had come from the four vents in an oil reservoir at the top of the RCPs. The licensee did not have to add oil during this past operating cycle. The condition appears to be a longstanding issue.

My questions for the forum are the forum are the following:

1.) Appendix R requires licensees to collect all of the oil that leaks from the RCPs, since the licensee is not collecting vaporized oil, is this a violation of Appendix R?

2.) Has anyone seen this condition during their plant tours?

Response posted to the website by David Allsop, IIPB on 5/26/05.

Appendix R does not specifically identify RCP vents as a source of lube oil that should be collected using the specified system. From the description, it appears that there is not enough oil to ignite and damage safe shutdown systems. However, judgments should be used as to such possibility, based on potential ignition sources and other combustibles in the area. The response was reviewed by Dan Frumkin of NRR/DSSA/SPLB.

INSPECTOR HAPPENINGS

REGION I

Mark Cox - from Resident Inspector at Indian Point 2 to SRI at Indian Point 2
James Wiggins, Deputy Regional Administrator, Region I to Deputy Director, Research
Jamie Benjamin, Reactor Inspector, Engineering Branch 2, DRS, to Resident Inspector, Millstone 3, DRP
Richard Barkley, Senior Project Engineer, Projects Branch 7 DRP to Senior Reactor Inspector, Eng. Branch 2, DRS
Kenneth Jenison, Senior Project Engineer, DRP, retired with 35 years service
Wayne Lanning, Director, DRS, retired with 31 years service

REGION II

William Russ Lewis - Reactor Inspector, DRS, hired
Louis Lake - Reactor Inspector, DRS, hired
Frank Ehrhardt - Operations Engineer, DRS, hired
John Tornow - Physical Security Inspector, DRS, hired
Michael King - Project Engineer, DRP, hired

REGION III
Pete Peterson - Sr. License Examiner to Chief, Operator Licensing Branch
Steve Burton - Monticello SRI to Kewaunee SRI
Carey Brown - Clinton Resident to Reactor Inspector DRS Branch 2
Allan Barker - NRR IIPB to Region III Project Engineer
John Cassidy - Radiation Protection Inspector, DRS Plant Support Branch, new hire
Ryan Alexander - Radiation Protection Inspector to Emergency Response Coordinator
Ron Gardner - DRS Project Manager for New Construction to Retirement
Martin Phalen - Radiation Protection Inspector, DRS Plant Support Branch, new hire

POTENTIAL UNMONITORED RELEASE PATH - GINNA

HERE'S WHAT HAPPENED:

While performing a fire protection walkdown of the service and intermediate buildings at Ginna in May of 2005, the senior resident inspector identified that when the intermediate and controlled access ventilation systems are turned off, air can flow from the plant's potentially-contaminated areas to its clean areas. The licensee was unaware of the potential for these unmonitored release paths under these system conditions.

BACKGROUND INFORMATION ON THE VENTILATION SYSTEMS

Air is circulated through the intermediate and service buildings at Ginna by a combination of forced and natural ventilation systems. Two of the forced air systems, are the intermediate building and controlled access area exhaust systems, which take suction from both clean and potentially contaminated portions of the intermediate and service buildings.

The potential for an unmonitored release exists because the exhaust ventilation systems for the intermediate and service buildings do not have backdraft dampers which would prevent the flow of air between the clean and potentially contaminated portions of the intermediate and service buildings. Although dampers with fusible links had been installed in these systems, they were designed to close only in the event a High Energy Line Break (HELB) had occurred. This condition appears to be an original design deficiency that may have been aggravated by subsequent modifications to the plant ventilation systems. On the next page is a hand sketch of a portion of the intermediate and auxiliary building ventilation systems. The service building ventilation system is similar to that of the intermediate building and has an identical design flaw.

THE END RESULT

The licensee is considering the following corrective actions: adding backdraft dampers to the effected ventilation systems, removing sections of the associated ductwork, or modifying system operating procedures.

This finding is considered value added, because the licensee is required by the plant ODCM to monitor, assess and characterize radioactive plant effluents. It is an example of the need for inspectors ,when conducting system walkdowns, to understand how the systems will respond when they are operating and de-energized. Ken Kolaczyk is the point of contact at the Ginna Resident Inspector Office. **Nice job Ken!!!**

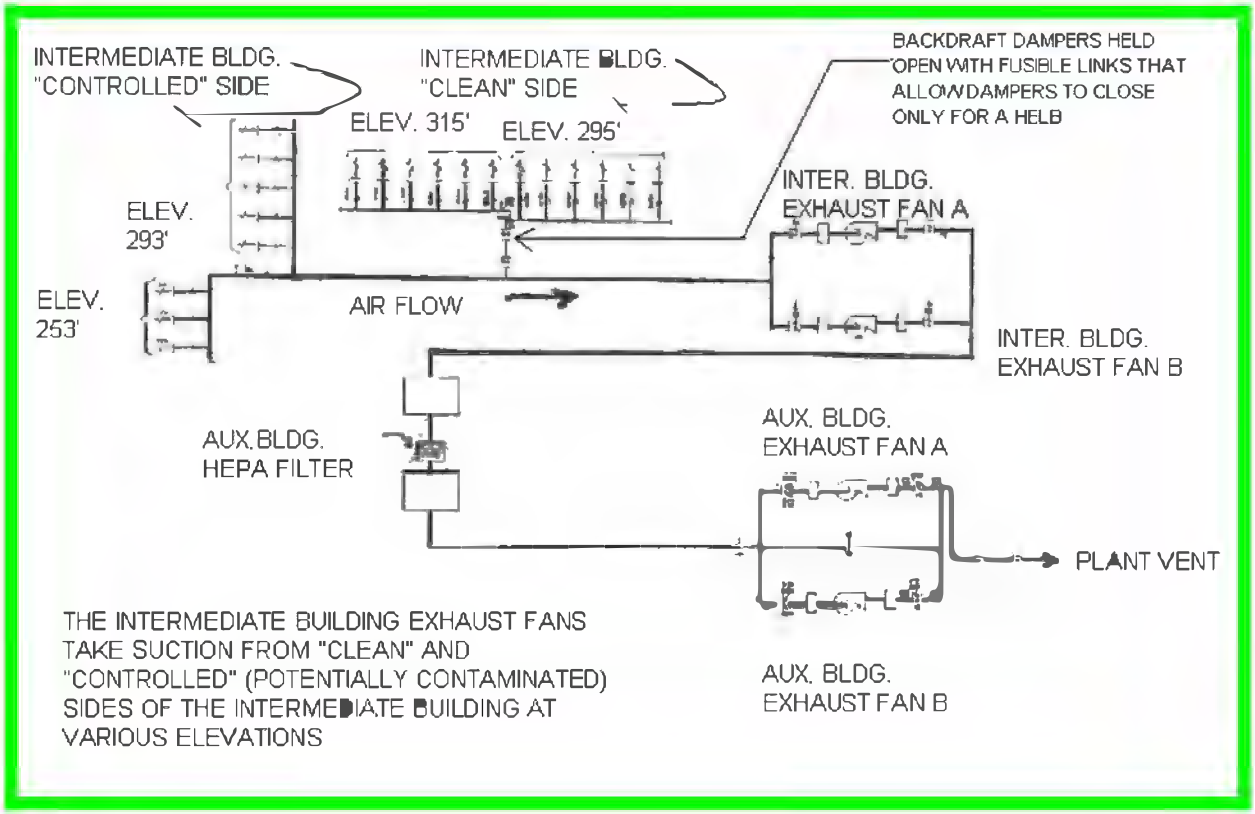

Figure 2 - Partial Diagram of Intermediate and Auxiliary Buildings Ventilation Systems at Ginna

DID YOU HEAR THE SIRENS

WHAT HAPPENED

On October 29, 2004 the NRC completed an EP inspection at Davis Besse. The inspection report also included the review of ANS performance indicator (PI) data submitted by the licensee in November 2004. The inspection focused on discrepant Alert and Notification System (ANS) PI data , the causes and responses to an unsuccessful scheduled ANS test on May 7, 2004, and the loss of capability of the Ottawa County Sheriff's Dispatch Center (SDC) to activate 54 Emergency Planning Zone (EPZ) sirens for 10.3 days prior to the unsuccessful test on May 7, 2004

BACKGROUND

The licensee's ANS consists of 54 sirens that Ottawa County officials may activate from the SDC. 49 of the sirens were in Ottawa County and the other 5 in Jerusalem Township of the neighboring Lucas County. The sirens can be activated by several control systems with each consisting of a Central Computer Unit (CCU) linked to a Radio Interface Device (RID) which transmits a radio signal to each siren's Remote Terminal Unit (RTU). The sirens in Jerusalem township were equipped with two RTUs with one able to be activated from Ottawa county and the other one from Lucas County. The Ottawa County control system used a touch screen control console to communicate to its RID instead of a CCU.

The ANS for the Davis Besse EPZ had several features that contributed to the failed test on May 7: a (1.) 'eavesdropping' feature that allowed all on line CCUs to monitor and record system commands and data, (2.) all online CCU time clocks were updated to match the time clock of the CCU, including a repair technician's portable CCU sending a pole command, (3.) the Emergency Operations Facility (EOF) daily poll updated all clocks but the Ottawa County SDC's touch screen control system, and (4.) a 'time synchronization' feature that prevented siren activation if there was a 90 minute difference between the time clock of the control device sending a signal to a siren's RTU and that RTU's time clock.

Several factors contributed to the test failure on May 7, 2004:

- April 5 - all CCU clocks reset to daylight savings (DSL) time (except SDC's touch control system)
- April 6 - EOF's automatic poll changed all RTUs to DSL (Ottawa SDC's RID, still on standard time, was now 1 hour behind RTUs and CCUs which were on DSL)
- April 26 - repair technician in error, by his portable CCU, set siren 101 RTU clock 1 hour ahead of DSL
- April 27- EOF's automatic poll of all EPZ sirens caused all CCUs and RTUs clocks to be 1 hour ahead of DSL (Ottawa SDC's RID now 2 hours behind all 54 siren's RTUs)
- May 7 - 'time synchronization' feature prevented Ottawa SDC's activation of all 54 sirens since greater than 90 minute difference between RTUs clocks and SDC's touch control system.

Prior to this failed test, the licensee's test plan , in procedure RA-EP-04400 Revision 2, for the ANS consisted of the Ottawa County SDC conducting a 60 second test on the first Friday of each month and a 3 minute annual test. Only these 13 scheduled tests would be counted as PI opportunities. The procedure did not clearly document whether tests of the five sirens in Jerusalem Township when activated by Lucas County could be counted as PI opportunities or not. Revision 3 (effective June 2004) of procedure RA-EP-04400 mainly added daily silent tests, using either the EOC CCU or SDC CCU, to the allowed PI opportunities. From April 2003 through September 2004, the Lucas County officials performed the monthly test on their five sirens.

The inspectors determined that the second and third quarter ANS PI data submitted to the NRC in November 2004 was discrepant for the following reasons: (1.) the silent tests were performed by the licensee staff rather than Ottawa County staff, (2.) the silent tests were being done using the EOF and SDC CCUs rather than the SDC touch screen control system, (3) there was inadequate pre-coordination with FEMA prior to implementing the change to the ANS testing program (licensee should not have made the change until next quarter after a FEMA review), and (4) the monthly tests performed by Lucas County officials on their sirens were not actual PI opportunities since the ANS test plan required Ottawa County SDC to perform all tests. Because the licensee had erroneously included so many successful test results and test opportunities in activating the 54 EPZ sirens in the PI data, the ANS PI results were classified as being in the GREEN performance band. The ANS PI value is the number of successful test results over the number of test opportunities. The inspectors recalculated the correct ANS PI value after eliminating those PI opportunities that should not have included and the new ANS PI results were now determined to be in the WHITE performance band.

This great inspection was made possible by the outstanding cooperation between Region III - Thomas Ploski and NRR- Robert Kahler. Both individuals have knowledge and expertise in Emergency Preparedness and in the methodology of activating and controlling sirens. **Great job Thomas and Robert!!!**

RESULTS

The licensee was informed on January 13, 2005 of a preliminary WHITE finding for the loss of the capability to activate the 54 sirens for 10.3 days and of an associated apparent violation of 10 CFR 50.47(b)(5) . In addition, the licensee was notified of a preliminary WHITE finding for the submittal of discrepant PI data for the second and third calendar quarters of 2004 and of an associated apparent violation of 10 CFR 50.9(a). The licensee was provided the opportunity for a regulatory conference or a written response. The licensee submitted a written response on February 14, 2005 which disagreed with both findings and SDP assessments. However, on May 5, 2005, the NRC sent a letter notifying the licensee that the original SDP assessments were upheld and that there was an NOV for the violation of 10 CFR 50.47(b)(5) and a non-cited violation against 10 CFR 50.9(a).

The licensee re-computed the PI value and submitted new PI data for the second and third quarters of 2004. Region III, NSIR EP, and NRR Inspection Program staff are coordinating licensee corrective actions and future onsite inspection in order to restore confidence that the licensee can accurately compute the ANSI PI data in accordance with NRC-endorsed criteria.

The licensee performed a root cause evaluation that includes corrective actions for the finding on the lost capability to activate the sirens for 10.3 days. The NRC needs to perform followup inspections to review those licensee corrective actions.

The licensee also coordinated with State of Ohio and Ottawa County officials and recently obtained FEMA's approval so as to revise the ANS testing program to include the results of ANS "silent tests". Those tests will be performed once a week by the Ottawa County SDC rather than by the licensee staff. These changes will be reflected in licensee's ANS PI submittals at the start of the fourth calendar quarter of 2005.

DID YOU KNOW THAT...... Julio Lara, Region III Branch Chief, is one of those unique NRC staff members that has had the opportunity to work in all four Regions, and occasionally in Headquarters during rotational assignments. While studying for his engineering degree, he was employed by the NRC as a Co-op student in Region IV and was assigned at the South Texas Project. His permanent assignments within the NRC have included Region I DRS inspector, Region II construction resident inspector at the Watts Bar plant, Region III resident and senior resident inspector, and currently Region III Branch Chief. While stationed at the Watts Bar plant, he was able to find time to become a Registered Professional Engineer.

He began riding motorcycles as a means to commute during his college days. He and (b)(6) (b)(6) so riding time is hard to come by these days and is a premium. He has been an avid motorcycle enthusiast for 15 years, owns a 2000 Harley Davidson Road King, and is considering making another road trip to Sturgis, SD, for the Black Hills Motorcycle Rally, later this year. Last year, the week before the rally began, he decided to make a solo trip to the rally, 8 years since his previous visit. Due to family and work schedules, he did not have much time to make the trip. Sturgis is about 950 miles from his home in Illinois. He began his trip on Friday, at 6 pm, after work and rode for 275 miles into Des Moines, Iowa, where he lodged for the night. He continued the journey at 6 am on Saturday morning, and reached Sturgis, SD, 13 hours and 750 miles later, with gas stops every 180 miles providing some rest. Once there, he pitched a tent at a campground, before taking in the rally events into the night. The next day, on Sunday morning, he went on a brief tour of local highlights, including Mount Rushmore and Crazy Horse monuments. At about 2 pm, he began his journey home. He rode for about 6 hours into Sioux City, Iowa, where he camped for the night. On Monday morning, he began his day at 7 am and rode until he arrived back home . The entire trip was 2,125 miles, in 68 hours, with about 30 hrs on the bike. The trip was long, but the weather cooperated, except for the obligatory thunderstorm and strong winds near Rapid City, SD.

Go Julio!

(b)(6)

Figure 3 - Crazy Horse Monument

DAY IN THE LIFE OF AN INSPECTOR BY MIKE HAY

My name is Mike Hay. I am currently the NRC SRI at the Waterford 3 nuclear facility located near New Orleans, Louisiana. Prior to this assignment I was the RI at Cooper Nuclear Station, a Region IV Reactor Health Physics Inspector, and served approximately 10 years in the US Navy nuclear program. A few months back I had the opportunity to participate in a news story being done by CNN that focused on the life of an NRC inspector. I was asked to write this article to provide some insights concerning the interview, along with my personnel thoughts about being an inspector.

Getting prepared for the interview was quite an experience. Thankfully, both Region II and IV public affairs officers provided many hours of support in preparation. When I found out CNN desired to start filming at my house you can imagine the initial reaction of my wife and two daughters. To my surprise, my wife thought this was a golden opportunity for the NRC to receive some positive media coverage that might possibly promote more public confidence in the NRC. CNN filmed my family and I interacting around the house and focused much attention on my six year old daughter. Matter of fact, the next day she woke up and asked if the film crew would be filming her again. CNN asked about my thoughts living close to a nuclear power plant, and did I feel my family was in danger living close to one? I'll let you watch the show to hear the exact answer. I do recall discussing that I would never move my family anywhere that I felt was dangerous and discussed several reasons why I felt the public is safe living near a plant.

A full day was spent filming at the Waterford 3 facility. We filmed at the control room simulator as a crew was performing training activities. CNN was impressed how controlled and effective the operators appeared and questioned if they would perform the same in a real emergency. They were interested in the safety of the plant with respect to how it would respond to major types of accidents including the immediate roles of the operators during such events. They questioned whether one malicious operator, or several working together, could cause a serious nuclear accident that could affect public health and safety. Filming continued in various areas including the main access security checkpoint, control room, spent fuel pool, emergency diesel generator room, and the turbine driven auxiliary feedwater pump room. At the spent fuel pool, as you would expect, questions focused on security of the fuel and the potential impacts from aircraft colliding into the building.

The overriding theme of questions throughout the day pertained to how safe are the plants from both operational and security perspectives and how does the NRC ensure this safety is maintained. They also were interested into what "motivates" an NRC inspector. I truly enjoyed answering these questions based on my experiences with the NRC over the past 10 years. I told CNN that NRC inspectors take great pride in performing their duties inspecting nuclear power plants and understand the enormous responsibility that is involved. I also discussed how the NRC is continuously assessing both operational and security safety issues at nuclear plants and implementing changes to the requirements and inspections to address these issues. The experience was a humbling one since as a regulator we are used to asking the questions and evaluating the answers. I have always felt great pride in our agency and truly believe that we do make a difference, hopefully the show will depict that message and continue to increase public confidence. **Mike represented the agency in a commendable manner!!!**

You will receive notification via agency-wide e-mail when the show airs!

FIRE!!! FIRE!!! FIRE!!!

This foreign event, obtained from the OpE website, is being included because of your expressed interest in significant foreign events. This event occurred at Cattenom Unit 2, a 1300 MW PWR plant located in France, on May 16th, 2004 when the plant was at 89% capacity. Plant personnel first detected an insulation fault on a 6.6 kilovolt (kV) and then the actual fire inside a fire-resistant wall penetration containing 6.6kV and 380 volt electrical cables that were routed between the turbine hall and the electrical building. The utility immediately disconnected power to Train A and all offsite power, and then re-powered Train B using a diesel generator. The plant went into shutdown mode using Train B. The utility requested external assistance with 38 fireman used to extinguish the fire in 2.5 hours after detection by dry chemical extinguishers and also water when there was no current detected. The electrical switchboards were repowered on May 17th with a reactor coolant pump being started up in the morning of May 18th.

The cause of the fire was the combustion of the PVC insulation of the 6.6 kV cables due to both the penetration being obstructed at both ends and the high operating temperature of those cables. The latter was due to the high current in those cables supplying the circulating system pumps with each pump demanding 9 megawatts (approximately 9000 horsepower) but the cables were sized for 5 megawatts. The reason that the penetration was obstructed at both ends was due to the replacement of one partition in 2003 without removing the second partition. Each penetration was approximately 6 inches thick to protect against fire propagation. The obstruction of the penetration at both ends by those partitions produced a 'furnace effect' a space from which heat could not naturally be evacuated.

The consequences of the fire are the following: (1) deterioration of 100 cables out of a total of 209, (2) the disconnection of Train A led to shutdown of electrical building ventilation systems, (3) during the fire, the pressurizer protection safety relief valves were used 3 times, and (4) deterioration of turbine and alternator bearings.

The utility undertook the following corrective actions: (1) all damaged 6.6 kV cables were replaced with cables of the same specifications as the original cables except that two cables were run per phase to each circulating pump to prevent overheating (this modification will be performed at all CATTENOM units, (2) all 380 V cables with insulation damage were replaced, (3) insulation tests were performed on 380 V cables between conductors and between ground to each conductor, (4) requalification tests wee performed on all cables in the penetration, (5) one concrete partition was eliminated as required by fire protection, and (6) the utility decided to inspect all double-partition penetrations to check the condition of the cables.

Lessons learned: (1) an electrical induced fire, due to non-safety cables, might significantly affect the plant safety, even though the fire is rapidly subdued, (2) greater vigilance is needed notably during the modification design with respect to the specific characteristics of units so as to properly analyze all possible consequences, and (3) risk analyses should be employed during modification studies.

INSPECTOR NEWSLETTER

Our Goal is to Provide Useful and Succinct Information to Inspectors
OCTOBER, 2005

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"Success is the ability to go from one failure to another with no loss of enthusiasm" —Winston Churchill

$$ RESIDENT INSPECTOR UPDATED RELOCATION INCENTIVES $$

Here's the bottom line: INCENTIVES FOR SITES HAVE BEEN CHANGED (both increased and decreased, but overall, amounts have increased). Go to http://www.internal.nrc.gov/HR/pdf/ri-relo-questions.pdf for questions and answers about resident inspector program relocation incentives. Go to http://nrr10.nrc.gov/rop-digital-city/newsletter/siteincentives.pdf for an alphabetical listing of site relocation incentives. When comparing percentages, It is very important to keep in mind that the old percentages were calculated on base pay excluding locality pay or resident inspector special rates while the new percentages will be calculated as a percentage of resident Inspector pay including special rates and locality pay. As a result, an incentive that appears to have decreased may well represent a higher dollar amount. For further information contact your DRP division director , Regional Personnel Officer or Nancy Johns, HR.

REGION II DEVELOPS OUTAGE TRAINING

Gordon Williams, Project Engineer, DRP, developed a set of slides for management of shutdown risk during outages. These slides include shutdown oversight perspective, recent shutdown issues, changes to the outage inspection procedure and sources of information and reference documents. Lois James, IIPB, is finalizing just-in-time web-based training for outages developed from these slides to be placed on ROPs digital city and Rich Laura, OpE, is in the process of providing additional resource information. Because this document is so awesome and since it important to get this out ASAP, we have made this information available on ROP Digital City. .Please use the **Inspector Community Forum** to chat about fall outage experience. We will use this feedback to further enhance these slides and make them available to you before the spring outage schedule. Stay tuned to digital city and the inspector newsletter for further developments.

WHERE HAS THE WATER GONE?

In June 2005, during a SSDPC inspection at ANO Units 1 and 2, the inspection team reviewed the heatup and inventory analyses for the emergency cooling pond which is the ultimate heat sink. The emergency cooling pond is a horseshoe, earthen structure with a earthen dam near the bottom end of one leg of the horseshoe. The dam is covered by a filter fabric and then concrete block on both sloping sides and the top. The concrete block is covered by an impermeable membrane fabric to deter erosion. The 6ft high dam both contains the pond's water and acts as a spillway when the pond has too much water. The excess water from the pond flows into the Dardanelle Reservoir. The inspection team determined that a calculation assumed an initial emergency cooling pond water level of 5 feet which was consistent with both Unit 1 and 2 Technical Specifications and credited the emergency cooling pond level as being increased to 5 feet and 4.5 inches by operator actions prior to loss of the primary heat sink (Dardanelle Reservoir). The inspection team questioned the design basis of the correlation between the pond's water volume and the specified height of the water in pond.

Figure 1 - View of Dam/ Spillway

Annually the water volume of the emergency cooling pond was verified by soundings taken at 50 foot intervals across the pond at various locations. The team questioned the adequacy of the annual emergency cooling pond sounding methodology. **This demonstrated a good questioning attitude** The first sounding was taken at 50 feet from the shore. The sounding's results were averaged to verify an "equivalent average depth" of at least 5 feet. The team determined that the depth near the shore was not being verified by the soundings and also the sounding acceptance criteria did not verify the capacity of the emergency cooling pond to contain a level of 5 feet and 4.5 inches as credited by the calculation. **This demonstrated that the team understood the interrelationship between the required water volume in the emergency cooling pond for various conditions and the sounding methodology.**

After further questioning by the inspection team, the licensee performed a visual inspection of the emergency cooling pond embankment on June 23, 2005. The licensee discovered that based on a design change, rip-rap (large stones) had been placed along the entire interior perimeter of the pond and had altered the slope of the pond's embankment from the expected value. This configuration was not reflected in the applicable design drawings and the main calculation for the emergency cooling pond. The licensee issued a condition report to address the failure to update the design drawings and calculation for that design change. In the condition report, the licensee established an administrative limit of 5.33 feet depth to ensure the pond's operability pending further analysis. Two additional condition reports were issued to address silt buildup not addressed in the soundings and the sounding acceptance criteria in regard to the credited level of 5 feet and 4.5 inches.

The same team also had another finding in relation to the emergency cooling pond. In 2002, two separate condition reports had been issued to address the impermeable membrane fabric, above the concrete block, being torn. The damaged membrane fabric was allowing water from the pond to erode the earthwork around the concrete blocks. At the time of this inspection in 2005, the licensee had not taken any corrective actions. In addition, there is an unresolved item for the lack of seismic design calculations for the dam. The licensee is in the process of performing a finite analysis to address this issue.

Figure 2 - View Looking at Rip Rap Along Edge of Pond

For additional details on the findings, please refer to inspection report 0500313/2005008. The team members were Joseph Tapia, James Adams, Breck Henderson, Chuck Paulk, and Craig Baron (contractor) Great work!

Periodic visual inspections, under the ROP, are required to ensure that any physical degradation of the an ultimate heat sink's structure is within acceptable limits so as to ensure the ultimate heat sink can fulfill its safety function

Figure 3 - View of Pond With Joe Tapia on Dam/Spillway (Rip Rap Is Evident And Impermeable Membrane Fabric)

RIS 2005-20/ REVISED GL 91-18 GUIDANCE

"Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety"

What Happened

- Guidance formerly contained in Generic Letter 91-18 was revised on September 26, 2005 by issuing Regulatory Issue Summary 2005-20.

- RIS combined guidance in two sections of the IM Part 9900, Technical Guidance

- New IM document is Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety

- Referred to as the Operability Determination Process **(ODP)** [RIS acknowledges that licensees may collectively refer to the processes as the "GL 91-18" process]

What changed and How Much did it change?

In general, there are incremental changes to the document that make things clearer, but no dramatic changes to the existing guidance.

- Rewritten to be clearer and more process-oriented

- Revised to reflect ongoing regulatory changes

- Clarifies selected issues in the guidance based on operating experience and industry feedback

Other Items

- IIPB will eliminate the old Part 9900 sections that have been superseded by this revised guidance.

- The new guidance is available on the NRC's public web site and on the ROP Digital City website at the Technical Guidance link STSODP.

Training

- Inspector training will be conducted by the region technical contact and the Technical Specifications Section at upcoming SRI/RI counterpart meetings.

- The Technical Specifications Branch will participate in NRR briefings and at an NEI-sponsored industry conference on this topic in November.

Technical Contacts:

Carl Schulten, NRR
E-mail css1@nrc.gov
James Trapp, RI
E-mail jmt1@nrc.gov

Randall Musser, RII
E-mail rxm1@nrc.gov
Stephen Burton, RIII
E-mail sxb3@nrc.gov

Charles Stancil, Jr, RIV
E-mail crs1@nrc.gov

CHATTING ABOUT - JOSÉ M. DÍAZ, Region II

Ever wonder what some of us do in our free time? Let's chat a little about José. He is a RII/DRS inspector who has been with the NRC since 1992. Most of his time with the NRC was in RII/DNMS as a health physicist, working as a license reviewer and inspector for the materials program. Prior to then, José was a Medical Physicist in San Juan, Puerto Rico. Enough about work!

José is currently the pastor of the Hispanic Fellowship ministry within the Roswell Street Baptist Church in Marietta, Georgia. He is currently pursuing a master degree in divinity with a concentration in biblical languages. The languages he is studying are Hebrew (with minor Aramaic), and Koine Greek. Let's not forget that he is also fluent in Spanish and English!

He was led to this path by (b)(6) (b)(6) In 2000, he was called and ordained to serve in ministry. His (b)(6) (b)(6) that helps establish and maintain faith-based employee assistance programs within corporations. Their (b)(6) (b)(6) He loves questions on biblical issues and likes to do research and apply logic to come up with answers.

We asked him, what drives such a life style? His answer was with a Greek word – "metamorphosis." He meant the transformation that happens to the people involved, their families and their community. He feels it is a byproduct that will live beyond himself. How awesome!

MEGA-QUESTIONS, MEGA-OHMS
(BRUNSWICK EDG SHUTDOWN)

Here's what happened:

On July 28, 2005, with both Brunswick units at full power, one of the four Brunswick emergency diesel generators (EDGs) received a lockout on generator differential overcurrent during monthly surveillance testing. The lockout occurred shortly after EDG startup and just following the EDG field flashing. The licensee's initial failure analysis determined that the cause of the failure was due to excessive carbon buildup on the exciter collector rings as indicated by reported low megger readings of approximately 200 ohms on the collector rings/brush rigging [high readings in the Kohm range meaning better resistance to ground is good]. The licensee postulated that the low megger readings caused the current to the generator field exciter to increase which caused the actuation of the generator differential overcurrent relay. The problem was corrected by cleaning the brushes and collector rings. Following successful preventive maintenance testing (PM), the EDG was declared operable.

Background:
Based on a review of the last performance of the generator brush/collector ring preventive maintenance on the site's four EDGs (required to be conducted annually), the licensee noted that the PM was last conducted 11 months earlier on the failed EDG and 12 months earlier on another. The other two EDGs had PMs conducted approximately 4 months earlier. Based on this information, the licensee conducted the PM on the 12-months-earlier EDG on July 30, 2005. The decision to conduct the PM on this EDG was also based on the EDG exhibiting brush/collector ring arcing during the last surveillance test. Megger readings were measured on this EDG and were found to be similar to the failed EDG. The EDG was returned to service later that day. Because the PM was performed in a relatively short time prior to this event on the other two EDGs, the licensee concluded that the problem exhibited by the failed EDG was due to the PM frequency, which may have been too long. Therefore, the licensee elected not to perform any other inspections on the other two EDGs or to evaluate any other possible cause of the EDG failure.

The inspectors **(Gene DiPaolo, SRI and Joe Austin, RI)** at Brunswick noted problems with the licensee's failure analysis of the EDG issue:

1. First, the licensee's determination that the PM frequency was inadequate was partly based on erroneous information. The decision to perform the PM on the second EDG was based on licensee information that indicated that the frequency of the PM used to be 6 months, but had been changed to 12 months. This would support the idea that the change may have been in error, indicating that the frequency really should be 6 months. However, the licensee subsequently determined that the PM frequency has always been on a yearly frequency since it was established in 1991. Also, the licensee subsequently identified that the as-found megger readings which were reported as 200 ohms during the initial testing, were in fact a measured value of 270 Kohms.

2. Second, the inspectors discovered that the licensee had not explored all other causes of collector ring brush degradation such as low brush spring tension, the collector ring irregularities or an inadequate PM.

3. Finally, the inspectors noted that the licensee had not performed a fault tree analysis to aid in determining other possible causes of the EDG failure. For example, during initial troubleshooting, the licensee discovered a failed fuse in the exciter surge suppression circuit. The troubleshooting performed for this failure did not eliminate an exciter failure mode as the cause of the failed EDG

Partly as a result of the inspectors' **questioning** the basis for the collector ring brush degradation being the cause of the EDG lockout, the licensee determined that some outside industry expertise was needed to fully address the basis for their decision. With assistance from several industry experts, a review was conducted which identified not only that the original cause determination was incorrect, but that the other 3 EDGs were susceptible to the same problem. The licensee found that the cause of the failure was inadequate margin between the no-load operating current of the exciter and the setpoint for the differential overcurrent relay. Based on this information and the lockout of another EDG during data gathering, the licensee declared all four site emergency diesel generators inoperable and shut down both units. Subsequently, the NRC conducted a Special Inspection (IP 93812) of the issues surrounding the event. Without the questioning by the resident inspectors, the licensee most probably would have determined that PM frequency was the cause of the problem, and continued operating both units with all 4 EDGs at least degraded, if not inoperable.

For additional information: IR 05000325, 324/2005010, dated September 15, 2005 or contact Gene DiPaolo, SRI, or Joe Austin, RI ,directly.

NEW: IMPROVED INSPECTION REPORT SEARCHABILITY ON THE WEB

A more comprehensive and easy-to-use inspection report search function has been created by IIPB. This function offers the capability to search inspection reports for key words during a certain time frame.

For **DIGITAL CITY**, the search function can be activated by going directly to "ROP inspection report search". The database consists of the ROP inspection reports available through the ROP List of Inspection Reports Web page. The database is updated twice a quarter along with the PI and inspection findings Web postings in accordance with IMC 0306. Reports that have been issued from inspections completed in the previous quarter are available 35 days after the completion of a quarter (e.g., early February, May, August, and November), then all inspection reports from the previous quarter should be available when the database is regenerated 60 days after the completion of a quarter (e.g., early March, June, September, and December). Click here to check this out: http://nrr10.nrc.gov/search/index.jsp

OPERATING EXPERIENCE UPDATE - Technical Review Groups (TRG)

What's Going On?

There is something NEW in the agency's OpE program-------Technical Review Groups (TRG) which are intended to increase the use of OpE data by the NRR technical groups. The TRGs supplement the normal OpE process by using technical experts to periodically perform a focused review of OpE data. The technical experts may better understand the importance of a particular OpE issue that otherwise may have been dismissed by the staff as inconsequential. This new change to the OpE process was initiated by a memo from NRR and RES (see ADAMS ML050970097).

What Changed?

There are 30 TRGs reviewing various technical areas every six months. Each group has a lead and members from the NRR technical groups. Each group is tasked with (1) reviewing all relevant Comms posted on the OpE forum website, and (2) searching and reviewing all other relevant OpE data streams. The lead for each TRG will issue the group's findings in an e-mail to the OES Branch Chief.

A Success of the New Process

Recently, there was a SUCCESS story that illustrated the potential value of the TRG process. A PWR experienced a dropped control rod event that led to a plant shutdown. The licensee determined that this event was cause by a degraded EQ splice which experienced higher than expected temperatures due to problems with CRDM fans. The RI staff **(Thomas Hipschman, SRI, and Brian Wittick, RI)** quickly and effectively communicated this matter to regional management, who informed NRR. A DE engineer **(Thomas Koshy)**, utilizing OpE search tools, found seven related industry events over the last five years, one of which was a repeat event at the very same plant. As a result, an Issue for Resolution (IFR) was opened and an information notice may be issued on this subject. **This event shows how the NRR technical staffs can apply recent OpE data by using search tools. Job well done**!

OpE Points of Contact

OpE staff are ready and available to help you. Contact Brett Rini for any search questions, and please feel free to provide any feedback to Richard Laura. Click here for a list of OpE points of contact: http://nrr10.nrc.gov/rorp/roe-contact-list.html

> "To succeed as a team is to hold all of the members accountable for their expertise"–Mitchell Caplan

INSPECTOR COMMUNITY FORUM

The purpose of the **Inspector Community Forum** is to facilitate communication between inspectors about items of interest. The Forum currently has 105 registered users and 84 posted messages. The Forum's homepage now displays all NRR baseline inspection procedures. Each procedure has a corresponding library which contains a link to the current procedure and to related generic communications. Related generic communications are being updated to add recently issued generic communications.

Check out Steve Jones' (SPLB) response to **Timothy Steadham's** question regarding start-up acceleration transients on Fermi's RCIC turbine. To read more go the forum on Digital City and click on 7111122- Surveillance Testing.

MANUAL CHAPTER	TITLE	LEAD REVIEWER
	Temporary Instructions	R. Matthew
IMC-0030	Policy and Guidance for Development of NRC Inspection Manual Programs	J. Isom
IMC-0040	Revision to Inspection Manual Chapters	M. Maley
IMC-0102	Oversight and Objectivity of Inspectors and Examiners at Reactor Facilities	J. Isom
IMC-0300	Announced and Unannounced Inspections	F. Tobler
IMC-0301	Coordination of NRC Visits to Commercial Reactor Sites	F. Tobler
IMC-0302	Inspection Program Evaluation Activities	R. Frahm
IMC-0305	Operating Reactor Assessment Program	B. Pascarelli
IMC-0306	IT Support for Operating Reactors	S. Anderson
IMC-0307	Self-Assessment Program	R.Frahm
IMC-0308	ROP Basis Document	S. Sanders
IMC-0309	Reactive Inspection Decision Basis for Reactors	D. Norkin
IMC-0330	Guidance for NRC Review of Licensee Draft Documents	F. Tobler
IMC-0350	Oversight ...in Extended Shutdown	R.Frahm
IMC-0608	Performance Indicator Program	D.Hickman
IMC-0609	Significance Determination Process	P.Koltay
IMC-0612	Power Reactor Inspector Reports	J. Isom
IMC-0620	Inspection Documents and Records	F. Tobler
IMC-0801	ROP Feedback Program	P. Bonnett
IMC-1007	Interfacing Activities Between Regional Offices of NRC and OSHA	J. Isom
IMC-1201	Conduct of Employees	F. Tobler
IMC-1202	Senior Resident Inspector Site Turnover	F. Tobler
IMC-1240	Inspector Access at Power Reactors	R. Mathew
IMC-1245	Inspector Qualification	L.James
IMC-2501	Early Site Permit	J. Jennings
IMC-2502	Pre-Combined License (COL) Inspections	P. Sekerak
IMC-2515	LWR Inspection Program-Operations Phase	J.Isom
IMC-2515	Appendix A, Baseline Inspection Program	J.Isom
IMC-2515	Appendix B, Supplemental Inspection Program	S. Sanders
IMC-2515	Appendix C, Special Inspections	S. Sanders
IMC-2515	Appendix D, Plant Status	R. Mathew
IMC-2509	Brown's Ferry Unit 1, Project Inspection Program	E.Kleeh
IMC-2530	Integrated Design Inspection Program	D. Norkin
IMC-2535	Design Verification Programs	D. Norkin
IMC-2901	Team Inspections	F. Tobler

IP	TITLE	LEAD
71114	Emergency Preparedness	R.Kahler
71121	Occupational Radiation Safety	R.Pederson, IOLB
71122	Public Radiation Safety	S.Klementowicz, IOLB
71150	Discrepant or Unreported Performance Indicator Data	J. Thompson
71151	PI Verification	D. Wrona
71152	Identification and Resolution of Problems	S. Sanders
71153	Event Follow-up	D.Norkin
93800	Augmented Inspection Team	D.Norkin
93812	Special Inspection	D.Norkin
95001	Inspection for One or Two White Inputs in a Strategic Performance Area	S. Sanders
95002	Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area	S. Sanders
95003	Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input	S. Sanders
IP 71111	TITLE	LEAD
01	Adverse Weather Protection	J. Ortega-Luciano
02	Evaluations of Changes, Tests, or Experiments	R.Mathew
03	Reserved	
04	Equipment Alignment	J. Ortega-Luciano
05	Fire Protection	P.Koltay
06	Flood Protection Measures	J. Ortega-Luciano
07	Heat Sink Performance	R.Mathew
08	Inservice Inspections	R.Mathew
09	Reserved	
10	Reserved	
11	Licensed Operator Requalification Program	P. Bonnett
12	Maintenance Effectiveness	P. Bonnett
13	Maintenance Risk Assessment and Emergent Work Control	P. Bonnett
14	Personnel Performance During Non-routine Plant Evolutions and Events	P. Bonnett
15	Operability Evaluations	A. Masciantonio
16	Operator Workarounds	P. Bonnett
17	Permanent Plant Modifications	R. Mathew
18	Reserved	
19	Post-Maintenance Testing	J. Ortega-Luciano
20	Refueling and Outage Activities	D. Norkin
21	Safety System Design and Performance Capability	R. Mathew
22	Surveillance Testing	J. Ortega-Luciano
23	Temporary Plant Modifications	D. Norkin

Last Update
9/28/05

NRR
Nuclear Reactor Regulation

@InspectorCommunity

Source of Inspection Preparation

Select [more] for reply option
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Topic	Replies	Recent Post	Started By
GE SIL 336, Rev. 1, Pg. 7, Section 4.b discusses the monitoring of start-up acceleration transients against a pre-established baseline. A deviation o ... [more]	1	9/6/2005 3:43:41 pm	Timothy Steadham
Containment Vacuum Breaker Preconditioning at Nine Mile Point Unit 1 NMP Unit 1 has a Mark I containment. In reviewing their surveillance/IST proc ... [more]	0	8/30/2005 11:15:20 am	Ed Knutson
Generic communications that relate to an inspection procedure (IP) have been added to the library in the Inspector Community Forum (ICF). To access t ... [more]	0	8/2/2005 10:49:51 am	David Allsopp

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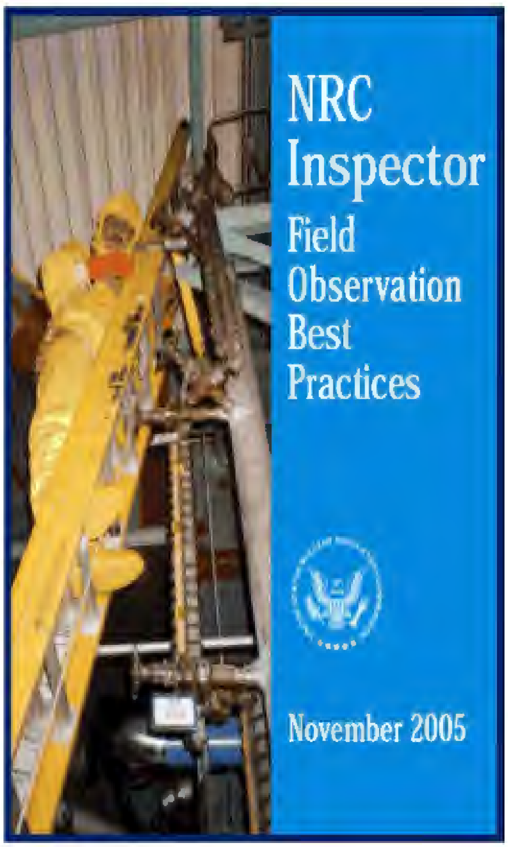
INSPECTOR NEWSLETTER

January, 2006

Our goal is to provide useful and succinct information to inspectors.

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's inspection manuals.



By now you should have received your pocket size copy of the **NRC Inspector – Field Observation Best Practices** booklet. This was developed primarily for new inspectors. In user-friendly language, it provides guidance and contains useful inspection tips. The material in the booklet was developed by inspectors and combines best practices of all four regions. Here's the team:

RI **Joe Schoppy**
RII **Malcolm Widmann**
RIII **Eric Duncan**
RIV **Mark Shaffer**
NRR **Lois James**
NRR **Fiona Tobler**

Some facts about the booklet:

NRR/IRIB owns the booklet and will re-issue as appropriate. E-mail feedback and inspection tips to PIPBCAL. Fiona Tobler is the POC.
NSIR is providing tips.
An 8 x 11 ½ version of the booklet is available on Digital City. Click for a copy:
http://nrr10.nrc.gov/rop-digital-city/index.html
IRIB is open to suggestions for other booklets (knowledge transfer tools) and/or helpful items for inspectors.

Table of Contents

REGION II COUNTERPART MEETING

Malcolm Widmann, Branch Chief, DRP, Branch 2, presented the following at Region II"s resident inspector counterpart meeting on November 29, 2005. The inspection findings are linked to the inspection tips on the back of the "NRC Inspector-Field Observation Best Practice" booklet.

PAY ATTENTION TO WHAT'S DIFFERENT DAY TO DAY. COMPARE UNIT TO UNIT.

During an EDG surveillance, June, 2005, the Crystal River Resident Inspector (RI), **Roger Reyes,** observed a fuel oil line vibrating excessively. The RI identified the issue to the non-licensed operator associated with the surveillance, who indicated that it would be looked at during the next month's surveillance. The RI noted that this line had maintenance performed on it in the previous weeks, compared the piping support configuration to the other EDG, and noted that it contained less supports. Thinking there was a possibility that pipe supports removed during the previous maintenance had not been re-attached, the RI elevated their concern to licensee management who initiated a CR to assess the condition. It turns out that some snubbers were not replaced after maintenance!!!!!!!

GET OUT IN THE FIELD, ESPECIALLY DURING TESTING AND OUTAGES. WHEN YOU KNOW WHAT "NORMAL" LOOKS LIKE "ABNORMAL" WILL JUMP OUT AT YOU.

In September, 2005, the Senior Resident Inspector (SRI), **Doug Simpkins**, at Hatch noticed a large crane performing a scaffold lift about 20 feet from the Unit 2 Main Transformer and directly over the non-safety 4160v exterior lines. Since the risk calculations for the week did not address switchyard work, the SRI questioned the work-week manager calculations of the risk profile. The SRI learned that the manager was unaware of the maintenance activities and he had, in fact, failed to account for the work in the risk profile.

FOLLOW THE STRING, EXTENSION CORD, TEMPORARY LABEL, OR ANYTHING OUT OF THE ORDINARY. THERE'S USUALLY A STORY.

In May, 2005, the SRI at Farley, **Charles Patterson,** questioned the wording on a caution tag on the hand switch in the main control room for the swing component cooling water pump. The tag stated the hand switch would not work sometimes and to cycle it several times. Locally in the pump room for the same pump, a caution tag and a deficiency tag indicated the disconnect switch used to change the power supply for the swing pump would not close correctly sometimes. At the prompting of the SRI, the licensee reviewed the tags and found the tag in the control room incorrectly worded.

SEND US YOUR SUCCESS STORIES AS THEY RELATE TO BEST PRACTICES. MORE IMPORTANTLY, SEND US YOUR INSPECTION TIPS SO WE CAN INCLUDE THEM IN THE NEXT REVISION OF THE BOOKLET

> "If you think you're too small to make a difference, you haven't been in bed with a mosquito" Anita Roddick

Potential Loss of Safety-Related Batteries at Quad Cities During Extreme Cold Temperatures

We (**Karla Stoedter** and **Mike Kurth**) reviewed the battery room ventilation systems as part of a quarterly maintenance rule inspection because of historic system operability problems. We found that the batteries might be inoperable if a station blackout were to occur during extreme cold temperatures.

In corrective action documents, we noted a reference to a calculation for the number of battery room ventilation heaters needed to maintain battery electrolyte temperature during a blackout. The calculation assumed an outside air temperature of -10°F and a battery room temperature of 55°F, for Unit 1. However, for Unit 2, these assumptions indicated that the heaters were inadequate. The licensee then re-calculated the number of heaters using temperatures of 0°F and 65°F. No explanation for the higher temperatures was given by the licensee.

From the USAR, we identified that the minimum outside temperature was -26°F. The licensee is currently evaluating the use of this value.

Also, we identified that a procedure used to ensure electrolyte temperature was greater than the Tech Spec limit of 65°F did not account for battery cells that were located along an outside wall. The licensee had operating experience that electrolyte in these cells could be colder than in cells in other parts of the room. The procedure required electrolyte temperatures be measured once the room temperature was 67°F or less. However, the instrument for room temperature was not located in the coldest part of the room. We were concerned that on a cold day, room temperature could be greater than 67°F while the electrolyte in the cells along the outside wall was less than 65°F.

The licensee evaluated our concern on a day when the battery room temperature was about 75°F and the outside temperature was -8°F. The electrolyte temperature for the cells along the outside wall was found to be about 69°F. As a result, the licensee concluded that using battery room temperature to determine when to measure battery electrolyte temperature was not appropriate. The licensee planned to resolve this concern by installing thermometers into the electrolyte of the coldest battery cells.

This article was written specifically for the newsletter by Karla Stoedter, SRI, Quad Cities. Karla, thank you for sharing this time sensitive information!

NORTH ANNA COLD WEATHER PROTECTION ISSUE

Here is what happened:

The resident inspectors (**Jim Reece** and **Gerald Wilson**) at North Anna identified a cold weather protection issue associated with the Woodward governors on the turbine driven auxiliary feedwater (TDAFW) pumps during performance of IP 71111.01, "Adverse Weather Protection," in December, 2005. **The inspection process demonstrated good questioning attitude, independent verification of licensee and vendor information, and prompt reporting of conditions impacting nuclear safety.**

Background:

Resident inspectors perform inspections of risk significant systems during extreme weather conditions in accordance with 71111.01. The inspectors selected the motor and turbine driven AFW pump rooms as one of the risk significant samples. The inspectors determined that the governor low temperature limit should be ~65 degF based on the viscosity limits of the oil from the vendor manual and the initial information received from the licensee's engineering group regarding the type of oil used for the TDAFW Woodward governors. Operation of a component below the required temperature band for the specific oil used can result in adverse viscosity effects. The inspectors determined that the governor oil temperatures were controlled by ambient room temperature. Moreover, the inspectors also knew that the emergency diesel generator (EDG) Woodward governors had a low temperature limit and that the licensee's cold weather procedure specified the installation of a temporary fan/heater to maintain temperature above this limit.

Results of Inspector Reviews:

The inspectors initially identified that Units 1 and 2 TDAFW pump rooms had low temperature alarm setpoints of 35 degF and 55 degF, respectively. According to the licensee's setpoint document, the Unit 2 setpoint should be equivalent to that of Unit 1. Additionally, an inspection using a laser pyrometer of Units 1 and 2 TDAFW pump governors indicated that governor temperatures were ~60 degF and ~55 degF, respectively. These temperatures are below the aforementioned limit of ~65 degF and suggest that the room low temperature alarm setpoint of 35 degF is nonconservative. Such a discrepancy would allow governor temperatures to drop below the vendor requirements before control room operators are alerted to the adverse conditions of the governors. Furthermore, the inspectors determined that the rooms' HVAC equipment for room/component temperature control was not in the licensee's Maintenance Rule program.

Licensee Corrective Actions and Inspector Followup:

The licensee initiated a potentially significant corrective action document. The resultant operability evaluation determined that the actual oil used, which was different from that originally reported by the licensee, resulted in a low temperature limit of 40 degF for the TDAFW governors. The licensee concurred with the inspectors' finding that the Unit 1 TDAFW pump room's low temperature alarm setpoint of 35 degF was nonconservative and has thus committed to perform an extent of condition review relative to the maintenance rule aspects of nonsafety-related HVAC components that support safety-related components. The licensee also reviewed the temperature limits of the lubrication oil used for the turbine and motor driven AFW components to ensure operability maintenance. The inspectors will review the licensee's responses under IP 71111.15, "Operability Evaluations." Additionally, the inspectors have a PI&R inspection sample involving the licensee's corrective actions, which specified the installation of temporary heaters in the EDG rooms in order to maintain operability of the respective Woodward governors.

OpE NEWS

NEED HELP! CALL YOUR OpE CONTACTS

Here's an example of how the regional OpE coordinator helped **Ryan Treadway**, RI, Oyster Creek, while out on a PI&R inspection at Calvert Cliffs. Ryan was looking into an issue regarding improper pump packing replacement maintenance on a TDAFW pump which resulted in a packing failure, the pump not passing its STP and being declared inoperable.

Here's what Ryan had to say "I was sure that there was OpE available to me regarding the significance of this issue at other plants or in the industry, but not sure what tools were available to me, and which would be most fruitful, since I have only been with the agency a year. I contacted my OpE counterpart at HQ (**Mark King**), and within 20 minutes, had links to several NRC websites and examples to look at regarding this issue that were very beneficial, and helped our team conclude that the issue was a violation. It was quick, concise, and a pleasure to have the people at OpE available to assist with this issue".

The OpE staff strives to be very responsive to any and all inspector requests related to searching OpE data streams including Inspection Findings, International OpE, Part 21 and 50.73 (LERs). We are learning that there is usually a plethora of OpE data available for most issues and the challenge is to be able to locate and apply relevant data when needed. In fact, Brett Rini has earned the distinction of being called the "Search King" and often brags that he can locate anything! In his spare time, Brett also works as a rowing coach. The OpE staff welcomes your input!

OpE Coordinators

Mark King
Carla Roque-Cruz
Tim Mitts

Any of us can help you!

OpE IT Update!

Have you been taking advantage of the Operating Experience Community forum? If you haven't, it's now easier than ever. In the past you had to send an e-mail to the OpE Branch requesting that your name be added to the list. With the help of the NRR IT staff, the OpE Branch has launched an OpE Community subscription site. Now you can subscribe to any group(s) that you want by visiting the new site at http://nrr10.nrc.gov/rps/dyn/subscription1.cfm. Enter your LAN ID, select the groups that you're interested in, and an e-mail will be sent to your account verifying those groups. Whenever an item is posted to one of those groups on the OpE Community http://nrr10.nrc.gov/forum/index.cfm?selectedForum=03), you will receive an e-mail notification. You can change your subscriptions at any time by visiting the subscription site.

Hug-a-Book

HAVE YOU HUGGED A GOOD BOOK TODAY?

Read any good books lately? If so, please share your experience with interested inspectors. Recommended books could be about technical subjects, leadership techniques, personal growth, change and/or time management, quality of life, or just a feel-good and/or mind-expanding topic. Please feel free to share your reason for recommending the book and the targeted audience. If you're having trouble getting a particular book, please e-mail Fiona Tobler at ftt@nrc.gov. You can e-mail you recommendations to Fiona or to any of the editorial board members.

A DRS inspector (**Joe Schoppy**) in Region I recommended "Who Moved My Cheese?" by Spencer Johnson. He strongly recommends this book for **ALL** NRC employees who want to succeed in changing times. Here's what Joe has to say: "The book is a quick read and fun. The change management techniques are simple, fast, and work quite well (in your personal life as well as at the office)". Which of the four characters are you?

A lending library may be developed based on inspector feedback.

> "Failure will never overtake me if my determination to succeed is strong enough" Og Mandino

WHAT DO YOU WANT TO SEE IN THIS NEWSLETTER? HOW CAN WE HELP YOU DO YOUR JOB BETTER?

Please email us with comments/feedback!

HIDDEN DESIGN DEFICIENCY

Here's what happened:

During the 2ndrd quarter of 2005, NRC inspectors (**Chuck Phillips and Mina Sheikh**) and the Illinois Emergency Management Agency (State) inspector (Bob Schulz) were reviewing issue reports for maintaining secondary containment pressure at the required differential pressure (dP) per Technical Specifications (TS) and discovered multiple instances when the licensee did not meet this requirement.

Background:

The standby gas treatment system (SBGT) is required to restore secondary containment dP to -0.25 inches of vacuum within 5 to 15 minutes of its initiation per TS by using reactor building ventilation system ductwork and controls to ensure radioactive particles are processed through the SBGT prior to being released to the environment. One reactor ventilation system dP controller controlled 14 area dP control dampers (including refuel floor damper), to ensure the reactor water cleanup regenerative and non-regenerative heat exchanger rooms were maintained at a negative pressure relative to the refuel floor by throttling down all 14 control dampers when necessary. If the refuel floor damper is in the open position then increased air flow is available to the SBGT. However, if the refuel floor damper gets throttled down, air flow available to SBGT becomes significantly reduced.

Results of Inspector Reviews:

From January 14, 2005 to May 20, 2005, there were 8 occasions when the SBGT failed to restore secondary containment dP per the TS time requirement. The worst failure was when it took 56 minutes to restore secondary containment dP in April 2005. **Due to the inspector's questioning attitude and thorough knowledge of this ventilation system**, the licensee identified that the refuel floor damper had been in the failed open position from before 2003 to February 8, 2005 and had masked the hidden design deficiency of the reactor building ventilation system throttling down on dampers and thus reducing flow to the SBGT system. This deficiency may have existed from the original design of the plant. Once that damper was repaired, there were significant time delays experienced in restoring secondary containment dP using the SBGT. The hidden design deficiency is that when the refuel floor damper is throttled down that the SBGT can not restore secondary containment dP within the TS time requirement. The inspection results are more fully described in inspection report 05-08 and Region III value added finding 39 for 2005.

Licensee Corrective Actions:

The inspector's efforts were recognized by the licensee making a plant change in that the refuel fuel floor damper for each unit was gagged open by 80 per cent.

IR numbers 50-249/2005008 and 50-237/2005008

ROP REALIGNMENT EFFORT

INSPECTION PROCEDURE REVISIONS

The following inspection procedures were revised to incorporate recommendations resulting from the ROP realignment effort during CY 2005. As part of the ongoing efforts to evaluate the effectiveness of the ROP, IIPB established a working group to review the distribution of inspection resources within the ROP. The working group consisted of representatives from IIPB and each of the four regions. In October 2005, the working group met and reviewed data on each of the inspection procedures in the baseline inspection program. The group attempted to gauge the effectiveness of each of the inspection procedures and examine the inspection resources (both estimated hours to perform as well as range of inspection samples) used for each procedure. The following changes to the inspection procedures (IPs) were made based on recommendations from the ROP realignment group:

71111.11Q Licensed Operator Requalification Program

Inspection resource was increased to 4 hrs/quarter (net increase of 4 hours/year) to more accurately reflect the time spent by resident inspectors during their quarterly observation of operator requalification activities.

71111.12 Biennial Maintenance Effectiveness

Inspection frequency was changed from a biennial to a triennial frequency based on a mature industry maintenance program. Additionally, estimated inspection hours were changed to 36 hours every 3 years or annualized estimate of 12 hours based on the actual inspection resources expended to complete this inspection procedure during last several ROP cycles. The change resulted in reduction of 8 hours of DIE per year.

71111.15 Operability Evaluations

Increased the estimated resources required to complete this inspection activity (30 additional hours per year was added to complete this IP) based on increased inspection hours charged to this IP during last several ROP cycles.

71111.16 Operator Workarounds

Operator workaround (OWA) IP was deleted based on satisfactory industry performance in this area. A requirement to inspect for cumulative effects of OWA was added to IP 71152 as one of its annual samples.

71111.22 Surveillance Testing

Reduced the estimated resources (reduced by 27 hours per year) required to complete this inspection activity based on inspection hours charged to this IP during last several ROP cycles.

71111.23 Temporary Plant Modifications

Sample size and estimated inspection resource required to complete this IP was reduced (reduced by 14 hours per year) because most plants do not have many temporary modifications to inspect.

71152 Problem Identification and Resolution

A requirement to inspect for cumulative effects of OWA to IP 71152 as one of its annual samples was added. Also, the annual sample size and the estimate inspection resources required to complete this IP was increased to support review of operator work arounds. Added 6/8/10 hours per year to support review of operator work arounds at single, dual and triple unit sites. Also, added 33/34/39 hours to perform either daily or semi-annual trend review.

Jim Isom, IRIB, is the POC for this effort.

OPEN TIAs ASSIGNED TO NRR

PLANT	TIA NO. AND SUBMITTAL DATE	SUBJECT	ML#
Surry 1&2 Region II	2004-04 Submitted 08/26/04	ACCEPTABILITY OF PROCEDURALIZED DEPARTURES FROM TECHNICAL SPECIFICATIONS (TS) REQUIREMENTS	ML051800320
Salem Unit 1	2004-05 Submitted 10/13/04		
Hope Creek	2005-02 Submitted 04/21/05	RELATING TO THE INTEGRITY OF THE REACTOR RECIRCULATION SYSTEM AT HOPE CREEK	ML051430110
Hatch Region II	2005-03 Submitted 04/26/05		
VC Summer Region II	2005-04 Submitted 04/28/05	LICENSING BASIS FOR TORNADO MISSILE VULNERABILITY OF OUTDOOR COMPONENTS THAT ARE RELIED ON FOR SAFE SHUTDOWN AT THE V. C. SUMMER NUCLEAR STATION	ML051190027
Columbia Region IV	2005-05 Submitted 05/03/05	EVALUATION OF MAIN STEAM ISOLATION VALVE LOCAL LEAKAGE RATE TESTING AT COLUMBIA GENERATING STATION	ML052580603
Palisades Region III	2005-06 Submitted 05/12/05	LICENSING BASIS FOR, AND SEISMIC DESIGN OF,THE PALISADES INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)	ML052900004
Vermont Yankee	2005-07 Submitted 05/31/05	ADEQUACY OF THE OFFSITE DIRECT DOSE CALCULATION AT VERMONT YANKEE	ML051520022
Cooper Region IV	2005-08 Submitted 08/26/05		
Dresden Region III	2005-09 Submitted 08/29/05		
FitzPatrick Region I	2005-10 Submitted 10/07/05	OPERABILITY DETERMINATION POLICY RELATING TO THROUGH-WALL CRACKING OF TORUS	ML053070268

CLOSED TIAs ASSIGNED TO NRR - FY 06 YTD

2005-01	Vermont Yankee Nuclear Power Station		ML052980085

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INSPECTOR NEWSLETTER

March 2006

Our goal is to provide useful and succinct information to inspectors

WHO YOU GONNA CALL?

We serve as regional point of contacts for the Reactor Oversight Program. If you can't track down a subject matter expert at http://nrr10.nrc.gov/rop-digital-city/pts-of-contacts.pdf and need help, call us!

			Back-up Coordinators
Region I	Mark Tonacci	met@nrc.gov	Bart Fu
Region II	Jim Strnisha	jms6@nrc.gov	Fiona Tobler
Region III	Z. Bart Fu	zbf@nrc.gov	Mark Tonacci
Region IV	Fiona Tobler	ftt@nrc.gov	Jim Strnisha

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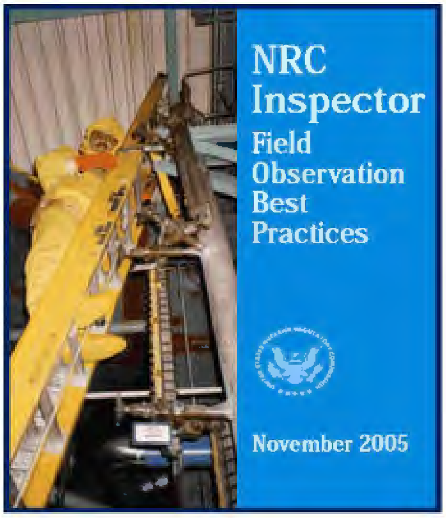


BEST PRACTICE COLUMN

Check out the NRC Inspector--Field Observation Best Practices booklet, pages 19 and 20 for tips on Containment Conditions.

Remain alert for new and exciting opportunities (touring containment **"as found"** & **"as left"** is a must, tour areas normally off limits due to ALARA, inspect service water piping and HX internals, observe infrequently performed testing, etc..). An outage is ripe with opportunities for a questioning mind - **"nothing substitutes for being there."**

Listed below are two Region I findings with "**red**" links to the Best Practice Booklet.

Make sure that your field observations align with the design basis and good engineering judgment.

Anne De Francisco (formerly Passarelli), RI, Susquehanna, identified a case of licensee personnel incorrectly implementing a TS surveillance requirement for the stand-by liquid control system (SLC) pump suction temperature. Anne discovered that PPL auxiliary operators were incorrectly implementing this requirement by using a procedure that confirms SLC heat trace circuits are operable even though there are thermocouples attached to the suction piping that can be used to directly measure suction piping temperature.

PPL changed the procedure used to implement the surveillance requirement by requiring the auxiliary operators to take direct temperature readings from the suction piping.
This finding demonstrates importance of maintaining a questioning attitude when verifying the correct implementation of surveillance requirements. (VAF 05-19, 9/12/05)

You can get a lot of good leads from attending the daily reactor operators brief in the control room.
Engage control room personnel by discussing observations.

George Malone, RI at Salem, was in the control room gathering plant status. He learned that Unit 1 was planning on running 12 charging pump early that morning to prepare it for the surveillance test later that day. The operators responded to inspector questions that this was a routine practice for all of the centrifugal charging pumps and it was done to raise and stabilize lube oil temperatures. George then informed the Control Room Supervisor (CRS) and the In-Service Testing (IST) Program Engineer.

The IST Program Engineer was not aware of the practice of running the pumps prior to the surveillance test to stabilize temperatures and immediately recognized the potential for preconditioning. The engineer verified that the practice inappropriately preconditioned the three valves and transmitted this information to Operations.
This finding demonstrates the importance of monitoring control room activities, knowledge of procedures, and questioning attitude. (VAF 05-17, 9/9/05)

INSPECTOR TIPS!

How to defuse hostility, anger, and frustration that arises on the part of the licensee during a meeting. Advice from a Resident Inspector.

1. Listen to the licensee. Write down notes on what they say and read the notes back to them so they know they are being heard and understood. Make corrections, if appropriate, to your notes. Ask them questions that are clearly intended to help you understand their points rather than to criticize them. Don't react and remain calm.

2. Defer your response to a different time or defer to a higher authority.

3. Discuss concerns with your Branch Chief right away.

4. Reconvene a meeting with the licensee when you have integrated their feedback into your notes and explain why you agree or disagree. Do not skip any of their points. Ask them if you have missed or misunderstood anything.

Do you have anything to add? We would love to hear from other inspectors on this topic and/or on any other inspection related tips.

> "Continual improvement is an unending journey."
>
> -- Lloyd Dobens and Clare Crawford Mason

INSPECTOR NEWSLETTER CONTRIBUTORS

The inspectors listed below received awards, in the form of NRC imprinted logo shirts, for their contributions to the January Inspector Newsletter. They either significantly re-wrote recommended Value Added Findings or provided articles, approved by the board, of interest to all inspectors.

Joe Schoppy, RI
Ryan Treadway, RI
Gene DiPaolo, RII
Gerald Wilson, RII
Jim Reece, RII
Karla Stoedter, RIII

> "Government's first duty and highest obligation is public safety." Arnold Schwarzenegger

Susquehanna Scaffolding Causes Inoperability of ADS Input

During the Biennial PI&R inspection at Susquehanna (PPL), Inspectors identified a scaffold fastened to the 1D RHR pump in the Unit 1 Reactor Building. The scaffold was also resting upon two rigid pipe supports for the pump discharge pipe. The inspectors questioned the location of the scaffold and whether an engineering evaluation was done as to the seismic implications of this build. No engineering evaluation had been done and the issue was entered into PPL's corrective action program.

Later in the week, the inspectors did another plant walkdown, this time in the Unit 2 Reactor Building. The inspectors identified another scaffold in the 2D RHR pump room which also raised seismic concerns. The scaffold midrail was found to be in contact with the discharge pressure tubing of the 2D RHR pump (Figure 1). The scaffold was also restricting vertical movement of the 2D RHR Heat Exchanger inlet header. The inspectors determined the discharge pressure tubing was an input to the Automatic Depressurization System (ADS). These inputs are Emergency Core Cooling System (ECCS) signals to ADS. In order for ADS to open the relief valves, it first waits for adequate discharge pressure signals from either the RHR or Core Spray pumps. This scaffold was resting upon tubing which fed two of these inputs (Detail 'A').

The inspectors immediately notified the control room of the issue. After an inspection by PPL, Operations entered Technical Specification LCO 3.3.5.1 for function 5f of LPCI permissive for ADS initiation. The issue was immediately entered into the PPL corrective action program. PPL found that this scaffold was built one year earlier and had been documented as being removed nine months ago. The scaffold was immediately removed and the LCO exited. Due to the vast redundancy of required permissives for ADS actuation, this issue would not have kept ADS from performing its safety function, but rather caused the inoperability of two inputs.

With two scaffold deficiencies identified by the NRC PI&R team, PPL initiated a site-wide inspection of all scaffolding to determine the extent of condition. PPL senior management put all scaffold work on hold and a 24-hour inspection effort was begun by engineering, maintenance and operations. The results of the inspection were alarming to PPL. **Of approximately 150 scaffolds installed in the plant, almost 100 of them had compliance issues with respect to clearance and attachment issues.** There were also scaffolds found with industrial safety hazards. PPL identified numerous seismic issues with scaffolding, including one which was built in such a way that it connected the containment building to the reactor building. This also violated their seismic requirements. Another scaffold was fastened

FIGURE 2

to the suppression pool hatch. With so many scaffold deficiencies, PPL generated over 100 CRs as a result of the Inspectors' questions and observations. Other scaffold deficiencies identified during the inspection included scaffold bracing in contact with high voltage conduits (Figure 2) and scaffold uprights in contact with spring can hangers (Figure 3).

After the PI&R team provided feedback, PPL took this opportunity to make a positive step change in the way they view their plant's housekeeping and scaffolding program. The inspectors' questioning attitude and meaningful findings resulted in valuable input for PPL. Region I reactor inspectors Barry Norris, Tom Setzer, Andy Rosebrook and Alan Blamey are the contacts for this issue.

This article was written by Tom Setzer, PE, Region I. Tom started with the NRC in 2004, prior to then he worked as a Rotating Equipment Mechanical Engineer and Maintenance Supervisor for PSEG Nuclear at their Salem and Hope Creek facilities for 8 years. Tom, thank you!

HAVE YOU HUGGED A GOOD BOOK TODAY?

Hug-a-Book

Gordon Hunegs, SRI, FitzPatrick, NPP, recommends "The Industrial Operator's Handbook" by Hop Howlett. Here's what he has to say about the book:

"Valuable overview of case histories of several accidents and analysis of human error. Included are fatal gas release at Bhopal, several infamous airline disasters, Titanic, Chernobyl, TMI and Exxon-Valdez. The accidents are used to illustrate how the lack of sound operating principles such as monitoring critical parameters, independent verification, communication, procedure use, pre-job brief and casualty control, etc can result in catastrophes".

NOTE: Gordon peaked our curiosity so we bought a copy of "The Industrial Operator's Handbook" and made contact with the author to discuss lecture possibilities. We will keep you posted. Here are some of the chapter titles: Common Components of Accidents, The Alert Well-Trained Operator, Controlling Equipment and Process, Understanding and Using Procedures, Independent Verification, Communicating Vital Information, Recognizing Abnormalities, Overseeing Maintenance, Modification, and Testing, Investigating Abnormal Events and Evaluating Operating Performance

The book cost $85.00 and it appears as though the second edition, dated 2001, is only available thru the author's website. The books foreword is from Lando W. Zech, Jr, former NRC Chairman. The book is sitting on my desk and available for your review–just send me an email if you would like to borrow the book. ftt@nrc.gov

For another good read, especially before coming to Oswego in the winter, Gordon recommends "The Ice Master: The Doomed 1913 Voyage of the Charlock" by Jennifer Niven. "There are several lessons in this book on leadership both good and bad".

WHAT'S GOING ON WITH THE NEW REACTOR **CONSTRUCTION** INSPECTION PROGRAM?

By Jason Jennings, IRIB, NRR

A lot has happened since the last update in the January 2005 newsletter. The passing of the Energy Bill has utilities looking at new reactors to meet their electricity needs more than ever. NRC has responded to this interest by establishing a goal to hire 300 new employees to NRR alone!

Artist's view of the Westinghouse AP-1000

What's the big deal? NRC has inspected reactor construction before...

True - but we learned a lot of lessons and are looking to making the process work more efficiently. That's where the Part 52 Combined License (COL) process comes in. Licensees will receive a license to build and operate the reactor all at once instead of separately. If they choose to build a plant with a design certified by NRC, such as the AP-1000, the process will move even more efficiently since only site specific information will need to be reviewed.

So how are we planning on inspecting these new reactors?

That's where the Part 52 Construction Inspection Program comes into the picture. This will include 4 basic parts:

IMC 2501 Early Site Permit
IMC 2502 Pre-Combined License Phase
IMC 2503 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)
IMC 2504 Construction Inspection Program for Non-ITAAC Inspections

Manual Chapters 2501 and 2502 are already issued if you're looking for some light reading to learn more. Manual Chapters 2503 and 2504 will be issued very soon, if not already out by the time you're reading this edition of the newsletter. Just in case they're not out and you're dying to know more...
In a nutshell IMC 2503 describes the inspections the NRC will perform to ensure that the Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) have been satisfactorily completed and verified by the licensee. IMC 2504 will describe the inspections to be performed on licensee operational programs and will provide the bridge to cross between construction land and the world of the ROP and IMC 2515.

This is all just wishful thinking for the near future anyway, isn't it?

Think again!!! Core boring samples (part of site characterization) should already be underway at the Calvert Cliffs site by the time you're reading this - which means the more days go by the closer we are to seeing the real action start!

Still want to know more???

We're planning on having a construction inspection article in future newsletters until we run out of things to tell you or we stop getting questions. In the mean time, more info can be found on Part 52 in the CIP framework document.

If you're interested in what's going on in the new reactor licensing world, Steve Bloom sends out a weekly update called New Reactors Hot Topics and has agreed to add interested inspectors to his email distribution. Among other things Hot Topics includes a forecasted schedule of anticipated COL applications by utility, location and anticipated design choice. Just drop Steve a line (SDB1@nrc.gov) and he'll add you to the list.

Got a construction related topic you want covered in the next newsletter or a question on the construction program? Send me, Jason Jennings, an email (JRJ3@nrc.gov) or give me a call! (301)415-3297.

New Reactor Licensing Activities
As of March 6, 2006
~~**Internal Use Only**~~

Organization	Designs endorsed or under consideration	Sites under Consideration	Planned Applications	Date	Basis
General Electric	ESBWR		Design Certification	8/25/2005	8/25/05 Application Submitted
Framatome ANP	EPR		Design Certification	12/2007	Letter 11/4/05
Southern Nuclear Operating Company	AP1000	Vogtle	ESP and COL	8/2006: ESP 3/2008: COL	Letters 7/26 and 8/17/05 Mtg Summary (ML052710018)
Constellation	EPR	Nine Mile Point Calvert Cliffs, plus 2	COL	6/2008 and 6/2009	Press Release 11/2/05 Mtg Letter 11/4/05
Dominion	ESBWR	North Anna	COL	9/2007	DOE solicitation award and press release Letter 11/22/05
Duke	AP1000	TBD (2)	COL	Late 2007 or Early 2008	Letters 3/4/05 and 10/25/05
Progress Energy	AP1000	Harris (2) Florida (2)	COL	Late 2007	Letter 8/24/05 11/1/05 Mtg Press Release
NuStart Energy	AP1000 ESBWR	Bellefonte Grand Gulf	COL COL	4th Qtr 2007 4th Qtr 2007 or 1st Qtr 2008	Letters 12/7/2004 and 11/17/2005, press release
Entergy	ESBWR	River Bend	COL	Early 2008	Press Release 11/15/05 Mtg Letter 12/5/05
South Carolina Electric and Gas	AP1000	Summer (2)	COL	3rd Qtr 2007	Letter 12/5/05

Safety Culture Enhancements to the Reactor Oversight Process

Background

Safety culture has always been an important element in providing for safe plant operation. Safety culture is defined as (http://www.nrc.gov/what-we-do/regulatory/enforcement/safety-culture.html):

> *That assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance.*

Many aspects of safety culture are already touched on in the Reactor Oversight Process (ROP), as it was initially developed and as it has evolved. More recent events, such as those that occurred at Davis Besse, re-emphasize the importance of safety culture and demonstrate that significant problems can occur as a direct result of safety culture weaknesses that aren't recognized and addressed early. The Commission directed the staff to strengthen our oversight process, in conjunction with industry efforts, to better address these weaknesses before they manifest themselves in significant safety concerns (http://www.nrc.gov/reading-rm/doc-collections/commission/srm/2004/2004-0111srm.pdf). To this end, we formed a team made up of representatives from the Office of Nuclear Reactor Regulation, Office of Enforcement, Office of Nuclear Regulatory Research, Office of Nuclear Material Safety and Safeguards, and each of the regions. The regional representatives included Gene Cobey from Region I, Bob Hagar from Region II, Bob Lerch from Region III, and Linda Smith from Region IV. Further, we engaged internal and external stakeholders on a regular basis throughout the development process in order to benefit from the diverse views and experiences of these stakeholders.

Changes to the ROP

We have identified enhancements to the ROP that are consistent with the regulatory principles that guided the development of the ROP and preserve the graded approach based on licensee performance. The presumption remains that plants in the Licensee Response Column are performing in a manner that warrants only routine (Baseline) inspection and oversight. As performance deteriorates and plants move across the Action matrix, inspection and oversight become increasingly more intrusive to ensure safe plant operation.

The proposed enhancements:
(1) make adjustments within the existing cross-cutting areas to more closely align with safety culture (reflected in Inspection Manual Chapter 0305);
(2) provide a structured way of determining the need for a safety culture evaluation of plants in the Degraded Cornerstone Column of the Action Matrix (reflected in Inspection Procedure 95002 and Manual Chapter 0305); and
(3) provide a process for the NRC to independently evaluate the safety culture of plants in the Multiple/Repetitive Degraded Cornerstone Column of the Action Matrix (reflected in Inspection Procedure 95003).

Next Steps

The following procedures and manual chapters have been modified and drafts circulated for comment:

- Inspection Procedure (IP) 71152, "Identification and Resolution of Problems"
- IP 71153, "Event Followup"
- IP 93800, "Augmented Inspection Team"
- IP 93812, "Special Inspection"
- IP 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area"
- IP 95002, "Inspection for Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area"
- IP 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input"
- Inspection Manual Chapter (MC) 0305, "Operating Reactor Assessment Program"
- MC 0612, "Power Reactor Inspection Reports".

Inspectors can expect 1-2 hours computer-based read and sign training in April that will provide an overview of the procedure changes and topics to be discussed at the counterpart meetings, followed by a 4-hour training session at the spring counterpart meeting. The safety culture enhancements to the ROP will be effective on July 1st.

Points of contact:

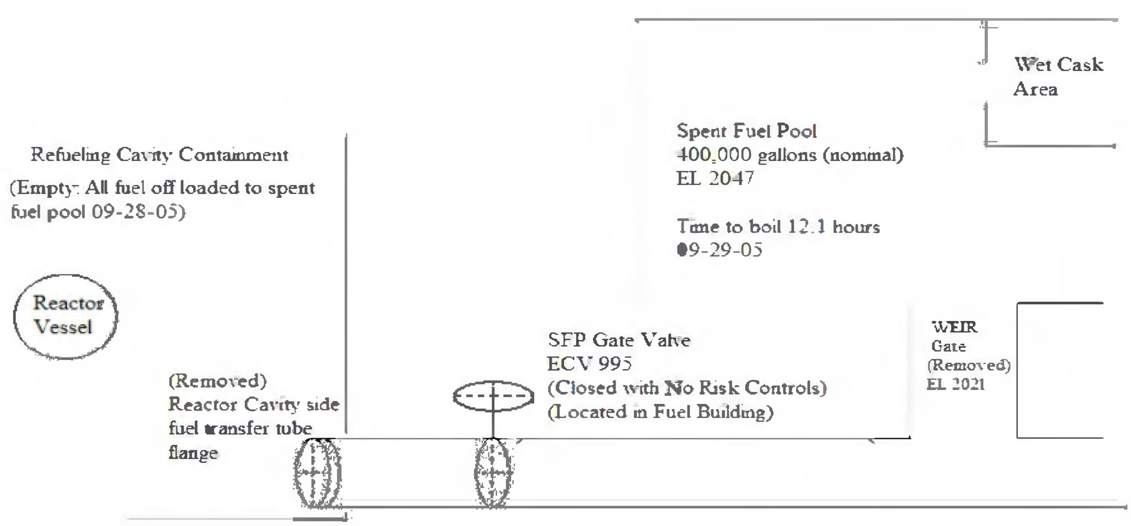
RI:	Gene Cobey (610-337-5171; ewc@nrc.gov)
RII:	Bob Hagar (843-383-4571; rch2@nrc.gov)
RIII:	Bob Lerch (630-829-9759; rml5@nrc.gov)
RIV:	Linda Smith (817-860-8137; ljs@nrc.gov)
NRR:	Jim Andersen (301-415-3565; jwa@nrc.gov)
OE:	Isabelle Schoenfeld (301-415-3280; iss@nrc.gov)

JUST IN TIME OUTAGE STORIES

REFUELING OUTAGE CONFIGURATION RISK

(CALLAWAY NPP)

During a fuel building tour to observe fuel shuffles and also followup on how the licensee manages configuration control and outage risk the refueling SRO was asked what measures were in place to ensure the spent fuel pool was not drained to the empty reactor building refueling cavity. The SRO believed the transfer tube gate valve (ECV995) was closed and that the flange on the cavity side was in place. The weir gate connecting the spent fuel pool to the transfer canal was not in place. When asked for confirmation he discovered the flange was not in place. This lead to the question whether admin. controls existed for the gate valve. The SRO was sure there must be controls in the form of a lock or out of service (clearance). He checked and discovered that there were only procedural controls, nothing at the gate valve. Operations was willing to rely on a spent fuel pool level alarm set at 4 inches below normal. This willingness had not considered the length of time needed to gain access to and close the 112 turn valve or install the weir gate.



Relying on a single valve with passive controls preventing the spent fuel pool from being drained down to the notch between the spent fuel pool and the transfer canal was not sensitive to outage risk and configuration control. Licensees usually place the weir gate in the notch area or reinstall the flange on the cavity. Many licensees will tag out of service the gate valve to prevent its inadvertent opening. Followup revealed that Wolf Creek (sister plant to Callaway) does place a "hold card" on the gate valve.

The control boundary to the reactor cavity is significant also in that it provides worker protection for workers that enter the cavity for reactor head work, surveys, FME inspections etc. It was confirmed that RP technicians had entered the drained reactor cavity following the core offload.

The licensee initiated a CAR to evaluate the need for a lock or out of service clearance and decided that a lock was necessary to address immediate safety concerns. A subsequent Independent Technical Review group review concurred that controlling the valve as part of the locked valve program was appropriate to reduce risk of possible misalignment.

Configuration control is critical during outages. Licensee's experience significantly more examples of loss of configuration during such outages. Outage risk is most significant during conditions of low inventory with fuel in the reactor. This however does not mean that licensees can ignore the controls and risk associated with fuel in the spent fuel pool. Newly discharged fuel has significant heat capacity as evidenced by the short time to boil in the spent fuel pool. This case had the time to boil at 12 hours with 24 feet of water above the many discharged fuel assemblies. If several feet had been lost in the spent fuel pool the time to boil would decrease and dose rates in the fuel building could become significant. For this case the licensee demonstrated inconsistencies. It had considered it important to protect the spent fuel cooling train and had provided barriers to ensuring nobody inadvertently interrupted power to the "protected" fuel pool cooling train but considered it acceptable to not have a barrier controlling the sole valve protecting the water inventory. This inconsistency demonstrated that the licensee did not completely address risk control associated with outage planning.

This write-up was provided by Dave Dumbacher, RI at Callaway, NPP. Thank you, Dave! For more information you can read IR No: 2005-005

Inadequate Control Of Materials Brought Into Containment

(TMI, NPP)

On October 6, the inspectors attended the morning plan-of-the-day meeting, and questioned discussions involving materials that would be brought into the reactor building (RB) containment in preparation for the upcoming refueling outage. Specifically, the inspectors questioned the controls in place to ensure plant design limits were not impacted, including the presence of zinc and potential for hydrogen generation. The inspectors also noted that engineers' had established several limits for loading of materials in containment, but it was unclear how these limits were controlled. The engineering limits prohibited the use of unqualified coatings and aluminum, and required that all lead shielding be stored in closed boxes and that items brought in containment be properly secured or otherwise proper distance be maintained to safety-related SSCs (including the RB containment liner).

Engineers evaluating the inspectors' concerns, determined that there was no supporting documentation to ensure proper controls of materials that had already been loaded into the RB containment. Further engineering review identified that approximately 26,000 pounds of lead blankets had been loaded into containment without the proper storage in closed metal boxes. A prompt investigation was initiated to

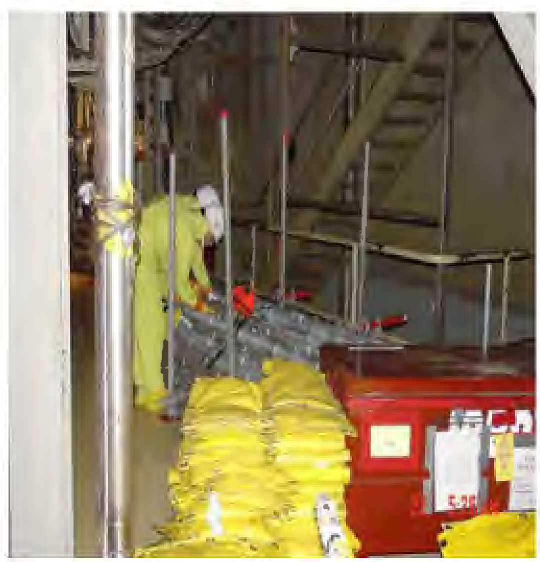
Lead insulation blankets not stored in steel boxes & unqualified coating on scaffolding poles.

address a RB sump operability concern due to potential sump screen blockage that could be caused by failure of the lead blanket vinyl covering material during a design basis loss of coolant accident (LOCA). Station management notified the NRC and the operations shift manager entered a one hour plant shutdown per TS 3.0.1. The plant shutdown was aborted after approximately 15 minutes due to late breaking vendor information that indicated that the lead blankets would maintain their structural integrity during a LOCA and operability of the containment sump was not affected.

On October 20, the inspectors accompanied plant personnel during the extent-of-condition walkdowns inside the containment building while at 100 % power operation. Several other discrepancies were identified which increased the potential for combustible gas generation, RB sump blockage, and equipment damage during a seismic event. During these walkdowns, the inspectors identified a weakness in the licensee's extent-of-condition walkdown because they failed to notice several thousand pounds of aluminum toe kick plates which were specifically prohibited by the engineering instructions. Other deficiencies or materials brought into containment included: unqualified coating materials used in scaffolding, tie-wraps, plastic bags, paper work orders, scaffold identification tags, several hundred feet of electrical cables in plastic wrapping, several aluminum fiberglass ladders, and numerous improperly tied scaffolding materials.

The engineering evaluation concluded that although the amount of aluminum brought into containment reduced the available equivalent margin specified in TMI calculation for hydrogen generation in containment (40 pounds of aluminum), by half, operability of the RB containment was not affected. This was due to the stacked loading configuration of the aluminum plates, since only a small fraction (24 pounds) of the aluminum would be exposed to generate hydrogen during a LOCA. The engineers also concluded that the other deficiencies identified did not impact the seismic analysis of the plant, and that the increased material would not have resulted in containment sump blockage during a LOCA.

This finding was dispositioned as a Green NCV. This write-up was provided by Javier Brand, RI, and Dave Kerns, SRI, TMI. For more information read IR No:50-289/2005-009.



More lead blankets!

INSPECTOR NEWSLETTER

MAY 2006

Our goal is to provide useful information to inspectors

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's inspection manuals.

INSPECTOR NEWSLETTER CONTRIBUTORS

The inspectors listed below received awards, in the form of NRC logo shirts for their contributions to the March Inspector Newsletter:

Gordon Hunegs, RI
Javier Brand, RI
David Kern, RI
Thomas Setzer, RI
Michael O. Miller, RIV
David Dumbacher, RIV

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INSPECTOR NEWSLETTER EDITORIAL BOARD

We want feedback and articles! Contact any of us! We have a member, Louis (Lou) Carson, from RIV--now we have two top notch senior inspectors!

Jim Trapp, RI Jmt1@nrc.gov
Joe Schoppy, RI jgs@nrc.gov
Joel Munday, RII Jtm@nrc.gov
Pat Louden, RIII Pll@nrc.gov
Bill Jones, RIV Wbj@nrc.gov
Louis Carson, RIV lcc1@nrc.gov
Fiona Tobler, IRIB ftt@nrc.gov
Adam Nielsen, IRIB* Adn@nrc.gov
*on rotational assignment from RII

RIII VALUE ADDED FINDING

Failure to Maintain Fire Barrier IAW Design Basis - Missing Fire Dampers

While performing a quarterly fire protection walkdown of the fuel handling building (FHB) at Braidwood, using IP 71111.05Q, a recently qualified inspector and NSPDP graduate on temporary assignment identified two ventilation ducts that did not have fire dampers installed, although these dampers were specified in design basis documents.

On April 12, 2006, during a fire protection walkdown of the FHB, an inspector noted that two ventilation ducts (shown below) in the 3 hour firewall separating the spent fuel pool heat exchanger room and the auxiliary building did not appear to have fire dampers installed. Having reviewed the fire zone design basis documents during the preparation phase of this inspection, the inspector found it questionable that safety-related ventilation ducts to rooms that housed safety-related equipment, i.e. spent fuel pool pumps and heat exchangers, did not have installed fire dampers.

The inspector questioned the fire protection system engineer regarding the requirements of the ducts and their apparent lack of dampers. As a result, the licensee performed an independent walkdown and design basis document review, and confirmed that fire dampers were not installed, although required by the Braidwood fire protection report (FPR). The FPR, which described the fire area analysis for the FHB, stated that "fire dampers are provided in the firewall separating the FHB and the auxiliary building," except where an evaluation has been performed and approved to allow a deviation. No evaluation or exemption existed to justify this as-found configuration. The licensee entered the issue into their corrective actions program for resolution, implemented compensatory measures that included hourly fire watches, and notified Byron Station of the condition, which was later confirmed to exist there as well. This configuration has existed since original construction.

This VAF highlighted the importance of plant walkdowns, particularly in areas that are not conveniently, or easily, accessible. In order to effectively observe the condition of the ducts, inspectors safely traversed a number of physical obstacles, i.e. crawled under heat exchangers and low hanging pipes. Also, as highlighted in the "NRC Inspector Field Observation Best Practices" handbook, an inspector should always "Make sure that your field observations align with the design basis and good engineering judgment," and "If it doesn't seem right... it probably isn't." Contact Rob Ruiz of DRP/Branch 6 with any questions or comments regarding this issue.

ROB–Thank you for the great write-up. The photos and the link to the "NRC Inspector Field Observation Best Practices" booklet are awesome. This is a great way to transfer knowledge.
RPT NUMBER:2006-003

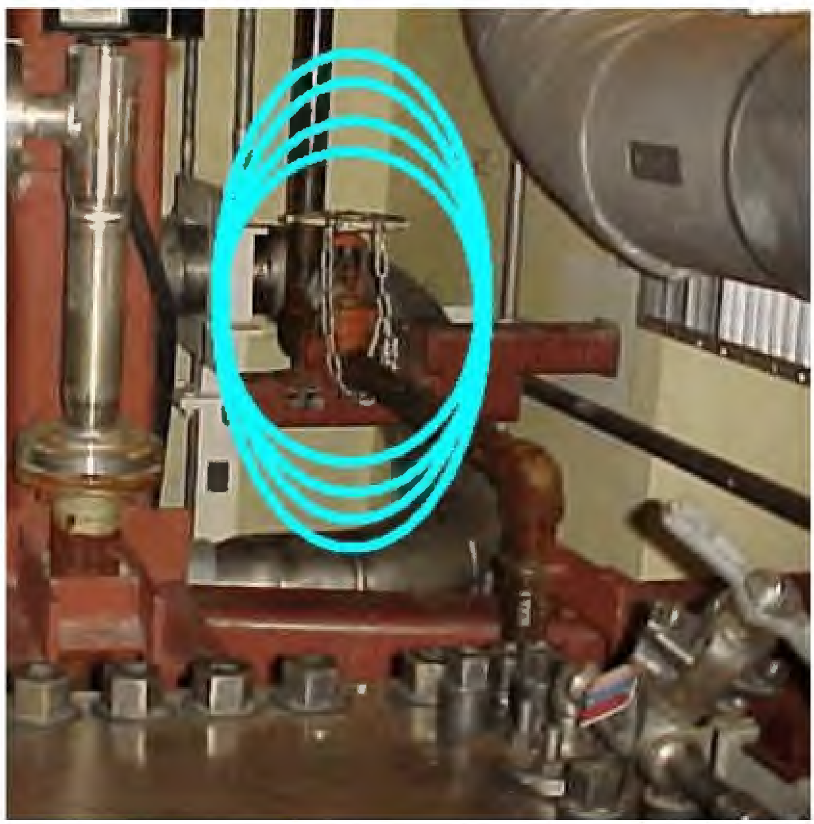
Inadequate Evaluation of Degraded Component Cooling Water System Flows

Seabrook NPP

NOTE: This finding demonstrated several key aspects of basic inspector techniques including: 1) using your senses/listening for changes; 2) questioning "it's always been that way"; 3) "following your nose" with selection of samples; 4) listening/interviewing the licensee; 5) conducting document research; and 6) overlaying it all with a good questioning attitude.

During system alignment inspections, the resident inspectors identified three potential operability issues on the component cooling water (CCW) system **1)** misposition of a throttled CCW valve to the safety injection (SI) pump; **2)** degraded CCW flow below accident design limits to the enclosure air handling cooler and the residual heat removal pump; and **3)** a possible degraded isolation valve which had not been investigated nor evaluated.

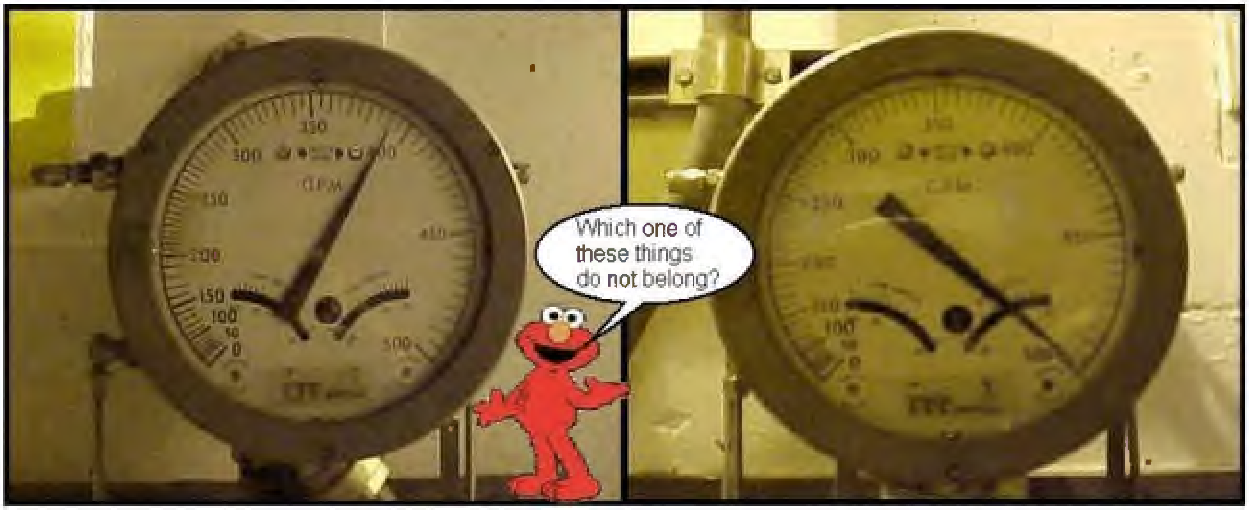
ISSUE (1): While conducting a system walkdown of the SI system, the inspectors heard a slight rattling noise by the throttled CCW valve to the SI pump. Although told by some operators that "it has always been that way," the inspectors pursued the issue with the shift manager and the system engineer. After further investigation, the licensee determined the valve had been mispositioned during the refueling outage approximately seven months earlier. The valve was 5/8 turn open versus the required 1 5/8 turns open. The flow had decreased approximately 15 gpm due to the mispositioning, but system engineering monitoring had not flagged the decreased flow to investigate since it remained well above required flow for the SI pump.



Mispositioned valve with light banging sound located by "Getting Dirty" - Inspectors climb obstacles to resolve issues

ISSUE (2) : After recognizing the deficient flow monitoring of the system and recognizing that the CCW system was rebalanced a few years earlier, the inspectors conducted an equipment alignment inspection of the CCW system. During the walkdown, the inspectors noted that the CCW isolation valve to the spent fuel pool heat exchanger was tagged as having potential leakage. This tag had been in existence since the previous refueling outage; however, the licensee had not evaluated the leakage for this valve and its impact on operability. Based on NRC concerns, the licensee conducted additional tests and verified the leakage past this valve would not impact operability.

ISSUE (3) : Through interviews and review of system engineering walkdown data, the inspectors identified two CCW flows (flow to the enclosure air handling cooler and the RHR pump) that neared their design limits. Examining their design documents and calculations, the inspectors determined that the CCW flow during accident conditions would decrease to these components and would drop below design limits (based on flow diverted to other components such as containment building spray heat exchanger). The licensee took immediate actions to perform operability evaluations to accept the lower flows and to increase the actual flow in the field. It was determined that the lower flows would not impact operability of the components. The degraded flows also had existed since the last refueling outage approximately seven months earlier.



Component Cooling Water flow to SSC

Glenn Dentel, SRI, is the point of contact at the Seabrook Resident Office. Glen provided this article for the May Inspector Newsletter.

ROP Feedback Program Changes and Tips

By Paul Bonnett, Feedback Coordinator

The ROP Feedback Program was revised recently to improve program efficiency and effectiveness. All feedback forms will be assigned a ***high, medium, or low priority***. Our goal is to resolve feedback issues with a ***high priority immediately***, a ***medium priority within 90 days***, and ***low priority feedback forms within 180 days***. The feedback form has been updated to give you the opportunity to recommend the appropriate priority. The new form and revised IMC-801 "Feedback Process" can be obtained from the ROP Feedback Web Page @ http://nrr10.nrc.gov/rop-digital-city/feedback.html.

THE NEUTRON JOKE

A neutron walks into a bar and orders a drink. The bartender comes over and brings him a strong cocktail. The neutron finishes the drink and motions the bartender back. "That was great", says the neutron, "how much do I owe you?" The bartender looks at him and says, "For you, no charge..."

FIELD OBSERVATION BEST PRACTICES - EP

NOTE: The practices below were developed by NSIR. These tips and others will be posted under Digital City, Inspection Checklist Tips. Many thanks to **Jeff Laughlin and Bob Kahler**, both of NSIR, for providing these best practices.

Declared Emergency (E-Plan entry):

- If onsite when an emergency event is declared, your first priority is to assist the resident staff. If possible, observe the licensee's response, i.e., activities associated with event classification, notification, and personnel protective actions, without interfering with shift operators who are engaged in mitigative actions. Request copies of all event documentation for further review. Assist the residents by observing the licensee's initial event critique.
- Review the event classification for accuracy and timeliness. This may involve a review of shift logs, chart recorder printouts, alarm responses, etc. as well as EALs and EPIPs.
- Review the event notification to state/local authorities and NRC for accuracy and timeliness.

Alert Notification System (ANS, i.e., sirens):

- Familiarize yourself with the licensee's siren testing program by reviewing the FEMA-approved ANS design document and the licensee's test procedure. Observe a scheduled siren test (annual full sounding is optimal), either at the offsite location where the test is initiated or in the field with a siren observer. Note how siren failures are documented, and the priority placed on fixing inoperable sirens. Verify that the licensee properly assessed all documented siren failures in the Alert Notification System (ANS) performance indicator data.
- If the licensee does not perform the siren testing and maintenance, check to see how they periodically verify its proper conduct for quality control.
- If Tone Alert Radios are part of the ANS system, verify that the licensee makes a best effort to identify individuals who need a radio, and provides assistance to maintain the radios in working order.

Shift and Augmentation Staffing:

- Review the E-Plan shift staffing commitments and verify that all positions are filled during normal business hours and off-normal hours. For example, if the E-Plan states that the shift complement includes a rad tech and a chemistry tech, verify that both positions are filled on a 24-hour basis, and not combined into one position during off-normal hours. Note: Tech Spec staffing may be less restrictive than E-Plan staffing.
- For any events at the Alert level or higher, verify that minimum augmentation staffing was achieved in a timely manner, and that the emergency response facilities (ERFs) were activated in the required time per the E-Plan. Also, verify that all response positions were filled by trained and qualified responders (i.e., on the ERO roster).
- Observe a licensee report-in augmentation drill from one of the ERFs and verify that responders arrived in a timely manner to meet facility activation goals. Construct a time-line, noting key times such as event declaration, ERO callout (when pagers were sounded), when facility minimum staffing was achieved, and when the facility was operational. Compare the observed times with the licensee's E-Plan commitments.

Emergency Response Facilities (ERFs):

- Walk down the ERFs and verify that they are maintained ready for use, noting such things as: procedures are the correct revision, licensee and NRC phones are in working order, Emergency Action Level (EAL) wall-charts are consistent with the EAL wording in the E-Plan, storage locker inventories are correct, and rad monitors are calibrated and in working order.
- If the licensee takes an ERF out of commission for maintenance or refurbishment, verify that this activity was coordinated with the NRC and state/local authorities, and that compensatory measures were put in place.
- As applicable, verify that ERF back-up power supplies (e.g., TSC and/or EOF) have been tested/maintained per licensee procedures and that identified problems were resolved.
- If applicable, tour the licensee's back-up or alternate EOF to verify it is in an adequate state of readiness.

Plant Configuration Changes Affecting E-Plan Implementation:

- Be familiar with the 16 Planning Standards of 10 CFR 50.47(b) in order to identify plant configuration changes which could potentially impact E-Plan implementation. For example:

    - Security Plan changes which could impact EAL implementation for event classification or ERO response timeliness. These changes may revise security contingency plans, which could affect the wording of EALs for security events; or they may implement security upgrades which could impact ERO augmentation times.
    - Changes to plant instrumentation which is referred to in the E-Plan may result in the inability to fulfill E-Plan commitments. For example, changes to meteorological or seismic instrumentation could impact event classification or State/local notification.

ERO Training:

- On a sampling basis, verify that ERO members have received annual re-qualification training in accordance with E-Plan commitments.
- Verify that ERO decision-makers (i.e., Shift Managers, Emergency Directors) receive periodic EAL training (classroom and drill participation) to maintain proficiency.

INSPECTOR COMMUNITY OUTREACH

Mark Marshfield, RI at Ginna, conducted two hours of lecture to a class at St. John Fisher College in Rochester, NY. The class consisted of secondary and primary school teachers in the Rochester area taking a continuing education course on energy for their teaching credentials. Mark discussed the basics of nuclear power electric generation including boiling and pressurized reactors (basic fission process, etc.), secondary systems, environmental impact, and waste processing. This was set up through the Ginna American Nuclear Society.

INSPECTOR AESOP'S FABLES

The Lone Ranger, Tonto, and the STAR* Principle

The Lone Ranger and Tonto stopped in the desert for the night. After they got their tent all set up, both men fell sound asleep.

Some hours later, Tonto wakes the Lone Ranger and says, "Kemo Sabe, look towards sky, what you see?"

The Lone Ranger replies, "I see millions of stars."

"What that tell you?" asked Tonto.

The Lone Ranger ponders for a minute then says, "Astronomically speaking, it tells me there are millions of galaxies and potentially billions of planets. Astrologically, it tells me that Saturn is in Leo. Time wise, it appears to be approximately a quarter past three in the morning. Theologically, it's evident the Universe is all-powerful and we are small and insignificant. Meteorologically, it seems we will have a beautiful day tomorrow. What's it tell you, Tonto?"

Tonto is silent for a moment, then says, "Kemo Sabe, you dumber than buffalo chip. It means someone stole tent."

Application of Inspector Best Practices:

- Challenge yourself to find what's different day to day.
- Careful not to overanalyze by overlooking beyond the obvious.
- Looking at SSCs from a different angle may shed new light on an old issue.
- Sometimes, it's not a matter of "what's there" but "what's not there that should be."

*STAR Principle = STOP-THINK-ACT-REVIEW

WHAT ARE WE DOING TO TRAIN NEW CONSTRUCTION INSPECTORS?

Good question! The construction inspector qualification journal (Appendix C-9 to IMC 1245) is currently under development and nearing completion. The completed qualification program won't look much different than those that already exist and will include ISAs, etc. Additionally, there will be fields of specialization. This will include civil/ structural, mechanical, electrical/ I&C, and start-up. While we're looking into training courses that are already available from external sources to support these specialized fields, we also plan to look into the development of new courses specifically for NRC. The final version of this appendix will go through the normal review process for IMC 1245, which includes a review by the Regional offices.

Credit for training and skills that an inspector already possesses will be given, just like we already do for IMC 1245. For example, an individual qualifying as a civil/structural specialist with a degree in civil engineering and structural inspection experience outside of NRC will require less training than an electrical engineer straight out of college qualifying in the same area. Many of our inspectors currently perform inspections during outages that are equivalent to the types of inspections that will be performed during construction. For these individuals, certification will be straightforward. For new employees with little experience, the certification process will be less flexible and will require completion of the training listed in the new qual journal. We expect to have a fully capable staff ready to go when construction activities commence.

So what procedures will the inspector be using to perform these inspections?

There's already a major inspection procedure overhaul in progress. Harold Gray in Region 1 is leading the way on coordinating inspection procedure development to support IMC 2503 (Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)). Pat Sekerak at Headquarters is coordinating the revision of inspection procedures that will support IMC 2504 (Construction Inspection Program for Non-ITAAC Inspections). If you're willing to help out in your field of specialization as either an author or reviewer for these procedures, please contact your Regional CIP representative:

Region I: Brice Bickett
Region II: Caudle Julian
Region III: Roger Lanksbury
Region IV: Joe Tapia

Got a topic you want covered in the next article? Send me (Jason Jennings) an email (JRJ3@nrc.gov) or give me a call! (301)415-3297.

NEW TRAINING ON DIGITAL CITY

Ya, ya, here's what's new:--Safety Culture Training and Post Transient Review Training (developed by Region I) is available on the Read and Sign Web site.

Risk-Management Technical Specifications (RMTS)

What's going on?

The staff and industry are developing improvements to technical specifications consistent with the Commission's policy statements on technical specifications and the use of PRA. These improvements are intended to maintain or improve safety and to bring technical specifications into congruence with the Commission's other risk-informed regulatory requirements, in particular the maintenance rule risk management requirements of 10 CFR 50.65(a)(4).

Initiative 4b,"Risk-Informed CTs, use of a configuration risk management program (CRMP)

Current technical specifications (TS) contain equipment-specific outage times; known as TS completion times (CTs) and also referred to as allowed outage times (AOTs). The TS contain limiting conditions for operation (LCO) action statements and associated CTs (e.g., if the diesel generator is inoperable, restore within 7 days; if not restored, take actions to proceed to plant shutdown within 24 hours). Current TS address systems independently, and do not generally account for the combined risk impact of multiple concurrent equipment out of service conditions. The maintenance rule configuration risk assessment requirement was added to address this consideration, but does not obviate compliance with current TS requirements. These current TS requirements may present inconsistencies with the maintenance rule requirements, and may require plant shutdown, or other actions, that are not the most risk-effective actions given the specific plant configuration. The proposal involves a combination of the current TS CTs, a quantified (a)(4) based risk assessment to determine CT extension feasibility, and CT backstop limits. The CT backstop limits ensure that low risk safety functions are not permitted to be inoperable for an indefinite period of time. This initiative would permit, contingent upon the results of a plant configuration risk assessment, temporary revision of the existing CT within an LCO using a quantitative implementation of 50.65(a)(4).

Initiative 5b, "SR Frequency Control Program in TS

Current technical specifications provide specific surveillance requirements and surveillance test intervals (frequencies). Compliance with these requirements are necessary to retain operability of the equipment, and avoid entrance into action requirements. The goal of this initiative is to develop a risk-informed process that would establish surveillance frequencies based on risk insights, equipment availability and reliability factors, performance history, etc., to determine an "optimum" SR frequency. The intent is to retain the existing surveillance requirements in the technical specifications, but to remove the equipment-specific surveillance frequencies. Surveillance frequencies would be controlled through an NRC approved process that is defined in the Administrative Controls Section of TS, and contained in a licensee controlled document.

How Will This Affect You---The Inspector?

"South Texas and Ft. Calhoun are the two pilot plants selected for the 4b completion time initiative," said Bob Tjader, project manager for the RMTS. The goal is to grant a license amendment for each plant by the end of the year. Present plans are to perform a plant readiness inspection in June and July '06 for the respective plants. This inspection will ensure that the licensees have an adequate PRA in place as well as the risk management program to implement changes to the completion times and manage the risk. An inspection procedure is being written in headquarters to implement the site readiness inspection. Headquarters personnel will lead the teams. Inspectors and branch chiefs at the affected plants have been involved in advising headquarters on implementation.

Initiative 5b for surveillance frequency changes also has a pilot plant - Limerick. Granting a license amendment for this plant is planned for this year. Initiative 5b is not expected to have a significant effect upon the Resident Inspectors.

What about inspector training?

When a license amendment is granted to a plant to adopt one of these initiatives, inspectors will need to understand what the new processes involve and inspect. So when a licensee implements a risk-informed completion time or surveillance frequency - what can an inspector do? Good question!! Dave Allsopp who leads the inspector training program and Paul Bonnet an SRA in IRIB got involved. Paul said "The desire is to train but also to provide scenarios that simulate what an inspector might really get involved with." The learning objectives were developed with the input of the inspectors at the pilot plants. In his feedback John Hanna, SRI at Ft. Calhoun, noted "We need very specific guidance to show how an inspector can independently validate that the extended AOT is valid ... how do we verify assumptions made?" This was some great input for the learning objectives that was incorporated and sent to the IMC 1245 working group for comment. These learning objectives will provide the basis for training to be developed by the Technical Specifications Branch.

How can you get more information?

Stay tuned for more updates. About once a month there will be an update on RMTS on the Friday ROP call lead by Fiona Tobler. In the mean time, the project contact is Bob Tjader at 301-415-1187. As an alternative, inspectors can call Mark Tonacci at 301-415-4045. Information is also available on the Technical Specification Branch Web site.

Temporary Assignment in the Office of the Executive Director for Operations (OEDO)

On January 9, 2006, I started a three-month rotation in the OEDO. There are two sections in the office: the Technical and Regional Programs Section (TRPS) of which I was a member, and the Corporate Management and Infrastructure Section (CMIS). My primary role was to serve as the EDO staff contact for the Division of Preparedness and Emergency Response (DPR). I also served as the backup coordinator for NSIR.

A typical day in the office consisted of arriving around 6:30 a.m. and reviewing the Daily and Security event reports, the EDO daily notes and any correspondence/ e-mails that had been sent to me overnight. It was important to read such materials so Bill Kane could be kept aware of issues that occurred in areas that he was responsible for before the 8:00 a.m. EDO events brief that was chaired by Luis Reyes.

At the EDO events brief, which was attended by all three Deputy Executive Directors (DEDO)s, and the heads of the various NRC offices such as NSIR and Research, Luis was briefed by a member of the TRPS staff on the events that had occurred overnight, and other issues that may be of concern. If you ever wondered why resident inspectors got urgent calls from EDO staff members at 7:00 a.m. asking for more information, it was because of this 8 a.m. meeting! The events brief lasted no more than 30 minutes since Luis had a meeting with the chairman at 08:30. At 9:00, Luis conducted a short 15 minute meeting with members of the EDO staff where he established new staff priorities based upon information from the chairman.

The various EDO staffs then conducted their assignments. In TRPS, this involved a wide variety of tasks including coordinating meetings between various staff offices and the DEDOS, the Commissioners and the staff, and the staff and Commission technical assistants (T/A)s. The TRPS staff also reviewed correspondence between the Commission and the staff to ensure information was consistent with agency policy and balanced recommendations were presented.

My rotation was a valuable learning experience because it allowed me to work with issues and offices that I would not normally encounter in my current assignment. I now have an improved understanding of how the agency works and obtained several "take aways' including the following:

- The EDO and his direct reports do a good job insulating the Regions, and especially the sites, from outside distractions that could adversely disrupt the inspection program.
- The new reactor program, and how it may impact staffing levels and the agency workload is an area of high focus.
- The emerging agency focus on new reactor licensing/construction should not take away from the importance of the operating reactor inspection program.
- Since a large portion of the issues that headquarters deals with are policy related, issues must be coordinated with several different offices, and as a result, are resolved much more slowly. Therefore, good communication and coordination skills are essential.

Article provided by Ken Kolaczyk, Region I, SRI Ginna. Got questions–contact Ken.

Inspection Checklists for the Boric Acid Corrosion Control (BACC) Program Implementation for IP 71111.08P

FYI–This checklist was sent to the program office via a feedback form. The feedback form lead, Pat Sekerak had enough sense to recognize the immediate value of this checklist for all inspectors so we sent the list out to your technical support leads last month. We received feedback from two Region I inspectors: **Joe Schoppy and Javier Brand**. Their feedback was forwarded directly to Pat and is not included below. These tips and others will be posted under Digital City, Inspection Checklist Tips. **Mel Holmberg** developed the awesome list!!! Remember this is not official ROP guidance–see the disclaimer on the top of the newsletter. **MEL**—thanks tons!

1) Resident Inspector Observations of Licensee BACC Examination Methods

The following checklist is provided to aid the resident inspector to assess the licensee's performance during observation of the licensee's boric acid walkdown/examination which normally occurs in Mode 3 just prior to the outage. The resident inspector should record the dates of his/her observation of this walkdown and record the names of the licensee staff observed or interviewed in conducting this inspection. It is suggested that the Resident use this checklist during his observation and then interview the licensee staff after the observation period to avoid bias. The Region based ISI inspector will use this information and the results of this checklist towards completion of the boric acid program review required by IP 71111.08P.

Licensee Inspector Name(s) & Date(s) & Plant Location(s) Examined ___________________
____

____

Do the licensee inspectors:

☐ use procedures during the inspection and if so what was the procedure number(s) and how was/were they used? (e.g. reference use, step by step etc)?

☐ consider bolted joints, gasket and flanged connections, valve packing, and seal welds as potential leak locations and know the specific joints/areas which have had prior leakage indications?

☐ focus special attention or use bare metal examinations on areas in the RCS with Inconel Alloy 600 and Inconel Alloy 82/182 welds and Alloy 600 RPVH penetration tubes on the vessel head?

☐ know the weld locations that have had extensive/recent field modifications and do they focus special attention on these areas? (Sensitization, Weld Heat Affected Zones)

☐ know that martensitic stainless steels (e.g. fasteners) are susceptible to BAC, and are these materials included in the inspection scope? (e.g. Alloy 410)

☐ knowledgeable of the various forms of boric acid and the meaning of the deposit types? (White powdery, brownish boric acid crystals, or reddish rusty deposits) Brown, red, and pink colored deposits may be indicative of carbon steel corrosion. Although these types of deposits may appear to be dry and the result of old leakage during system walk-downs, they may be indicative of active leakage during plant operation.

☐ investigate each possible indication of leakage such as surface streaks, boric acid residue at insulation seams, or bulges in insulation for the areas examined?

☐ use a checklist, P&ID, or compartment drawings to aid in tracking the completion of their examinations?

- ☐ request removal of insulation when there is reason to suspect leakage?

- ☐ make use of ladders, binoculars, mirrors or other remote viewing devices to examine areas/components not readily visible and accessible for general examination?

- ☐ use flashlights, lanterns, or rely on in-plant lighting and was this lighting sufficient for the examination?

- ☐ verify adequate illumination level by use of VT-2 cards or light meters?

- ☐ perform a check of visual resolution under existing illumination or supplemental illumination (e.g. flashlights) at the maximum examination distances and did the maximum examination distance exceed 6 feet?

- ☐ examine component surfaces at an angle of more than 30 degrees to the surface examined?

- ☐ document boric acid leaks or component corrosion on a standard report tracking form?

- ☐ miss documenting any potential areas of leakage or corrosion which the NRC inspectors observed?

- ☐ measure or estimate the component corrosion induced material loss or leakage rates? if so was this done accurately?

2) **Inspection Procedures (Resident or Region Based Inspectors)**:

Does the inspection procedure(s): ____

- ☐ provide guidance for cleaning the boric acid crystals, and does it provide a definition of what a clean surface is?

- ☐ contain instruction for the evaluation of the effects of boric acid leakage on carbon steel components including measuring corrosion loss?

- ☐ require a bare metal examination of Inconel Alloy 600 welds or components?

- ☐ provide proper written guidance on how to document evidence of boric acid leakage and does this include:
  - ☐ Photographs or digital images of leak location?
  - ☐ Size and physical appearance of deposit?
  - ☐ Assessment to determine if leak is active?
  - ☐ Color and chemical composition assessment of deposit?
  - ☐ Radiochemistry assessment of the age of the deposit?

☐ require maintaining a database or log of all boric acid leak locations (active or inactive)?

☐ require that BAC inspection records be treated as quality records?

☐ specify inspections to verify that the following equipment is free of boric acid residue or deposits indicative of RCS leakage:
  - ☐ CRDM shroud fans?
  - ☐ Containment air recirculation (CAR) fan coils?
  - ☐ Containment fan cooler units (CFCU)?
  - ☐ Airborne Filters?

☐ include instructions to assess the collective significance of alternate inspections and monitoring devices? Such as... Changes in containment ventilation equipment, fans, atmospheric radiation monitors, and changes in containment temperature and humidity monitors. Specifically changes in the following parameters:
  - ☐ Airborne particulate radioactivity?
  - ☐ Airborne gaseous radioactivity?
  - ☐ Humidity?
  - ☐ Temperature?
  - ☐ RCS water inventory?
  - ☐ Containment air cooler thermal performance?

☐ provide guidance for how to complete an engineering evaluation to leave a leak in service?

☐ provide specific frequencies or conditions for performing boric acid walk-downs?

☐ require the source of any boric acid deposit be tracked until the leak source is positively identified and evaluated?

3) BACC Evaluations and Corrective Actions (Region Based ISI Inspector):

Did the BACC evaluation/ corrective action No(s): ________________________________

☐ do an initially evaluation of each leakage source/cause prior to cleaning?.

☐ include the location, and whether the leak has degraded other material around it?

☐ document if it was wet or dry and if wet quantify the leakage rate?

☐ identify the quantity and color of corrosion products or boric acid deposit?

☐ identify all carbon steel components contacted by boric acid and was this condition entered into the site's corrective action program?

☐ include a significance assessment and appropriate actions (e.g. immediate corrective action needed, no action required, need to document and follow / monitor with an established monitoring frequency supported by an engineering evaluation)

☐ document minor corrosion to track this condition for future reference?

☐ get a review by the BACCP owner?

☐ require input from design engineering, ISI engineer, operations, maintenance, and health physics?

☐ include adverse trend evaluation for locations which have required repeated boric acid cleanings?

☐ include a bare metal inspection to characterize the extent of corrosion?

☐ for components and bolted joints that experience repeated leaks, consider replacement?

☐ apply Section XI corrective actions for boric acid leakage at bolted connections which includes removal and VT-3 inspection of affected fasteners (IWA- 5250)? Alternatively, the bolts do not need removal if they evaluate fasteners iaw approved Code Case N-616 Alternative Requirements for VT-2 Visual Examination of Class 1,2 or 3 Bolted connections (approved in RG 1.147) with the following restrictions:

- Insulation must be removed for type 410, type 17-4 ph or A-286 stainless steel type studs or bolt materials.
- 10 minute hold at pressure prior to inspection of uninsulated systems.
- 4 hour hold at pressure prior to inspection of insulated systems.

☐ apply Code Section XI acceptance criteria and corrective actions for corrosion resulting in loss of thickness affecting Code pressure retaining boundary material - 5% for fasteners iaw IWB-3517 and 10% for valve bodies iaw IWB-3519.

~~FOR INTERNAL USE ONLY~~

INSPECTOR NEWSLETTER

AUGUST 2006

Our goal is to provide useful information to inspectors

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved ROP guidance is promulgated in NRC's inspection manuals.

MAY INSPECTOR NEWSLETTER CONTRIBUTORS

The inspectors listed below received awards, in the form of NRC logo shirts, for their contributions to the May Inspector Newsletter:

RI **Glenn Dentel**	RIII **Mel Holmberg**
RI **Ken Kolaczyk**	RIII **Rob Ruiz**
RI **Mark Marshfield**	NSIR **Jeff Laughlin**

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NEWSLETTER EDITORIAL BOARD

We want feedback and articles! Contact any one of us!

Jim Trapp, RI	**Pat Louden, RIII**
Joe Schoppy, RI	**Louis Carson, RIV**
Paul Fredrickson, RII	**Fiona Tobler, IRIB**

Opps, we forgot say **"thank you"** to **Justin Fuller**, DRS Reactor Engineer Inspector, RII, for his contributions to the Inspection Checklist for the Boric Acid Corrosion Control Program Implementation for IP 71111.08P in the May 2006, Inspector Newsletter.

GROUND-WATER CONTAMINATION AT REACTOR SITES DUE TO UNDETECTED LEAKAGE OF RADIOACTIVE WATER

Louis Carson, Stephen Klementowicz, Adam Nielsen, and Stacie Sakai

One of 11 vacuum breaker valves and pit located on the effluent discharge line at Braidwood Nuclear Power Plant. These valves have had recent and historical leakage resulting in 3 million gallons of water spilled during one event.

THE ISSUE

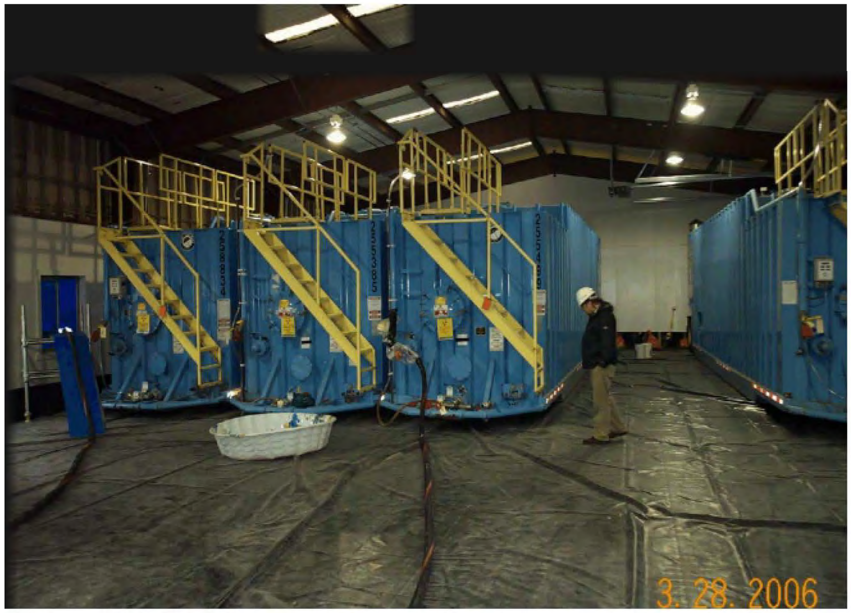
Radioactive contamination of ground-water has occurred at multiple facilities in areas that were not expected due to undetected leakage from facility structures, systems, and components that contain or transport radioactive fluids. The primary contaminant is tritium. Specific events that have been evaluated by Regional Inspectors have occurred at the following plants:

Braidwood, Byron, Dresden, Haddam Neck (decommissioned), Indian Point, Callaway, Three Mile Island, Salem, Palo Verde, and Watts Bar.

We are concerned about these abnormal discharges because radioactive effluents from reactor operations can have environmental impacts – on man, animals, plants, and sea life. To mitigate the impact, the NRC verifies during the licensing process and throughout the operation of the nuclear power plant, that facility operation does not have a significant impact to plant workers, members of the public, and the environment. NRC accomplishes this by requiring that releases of radioactive effluents to unrestricted areas be As Low As is Reasonably Achievable (ALARA). To date, all of these events resulted in little to no dose impact to members of the public. However, there was and continues to be concern voiced by the public, state, and local governmental officials. This resulted in significant interaction by the NRC with these groups. In some cases, NRC Regional staff is still engaged with public and governmental stakeholders on the events.

NRC RESPONSE

In response to these events, NRR and Regional DRS staff have taken the following actions; issued two Information Notices (IN 2004-05, SPENT FUEL POOL LEAKAGE TO ONSITE GROUNDWATER and IN 2006-13, GROUND-WATER CONTAMINATION DUE TO UNDETECTED LEAKAGE OF RADIOACTIVE WATER), revised Inspection Procedure 71122.01, Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems, and chartered a Lessons Learned Task Force.



Region III Health Physics Inspector, John Cassidy inspects the indoor fixed rear axle collector (FRAC) tanks at Braidwood Nuclear Power Plant. The licensee had up to seven tanks located in this area during maximum storage. These are 20,000 gallon storage tanks that provided temporary storage for contaminated water that was spilled due to undetected leakage from vacuum breaker valves.

In order to have a complete and thorough review of the inadvertent liquid release events and NRC's regulations, the EDO chartered a Task Force for the purposes of conducting a lessons-learned review of all the relevant information. Although the levels of tritium and other radionuclides measured thus far do not present a health hazard to the public, the Task Force members, (comprised of representatives from all major NRC offices, as well as the state of Illinois), have been asked to identify and recommend areas for improvement applicable to the NRC and to industry, by reviewing and evaluating the following: industry experience; health impacts; the regulatory framework; NRC inspection, enforcement and reporting aspects; industry actions; international perspectives; and communications with external stakeholders. The Task Force will issue its report to the EDO on August 31, 2006.

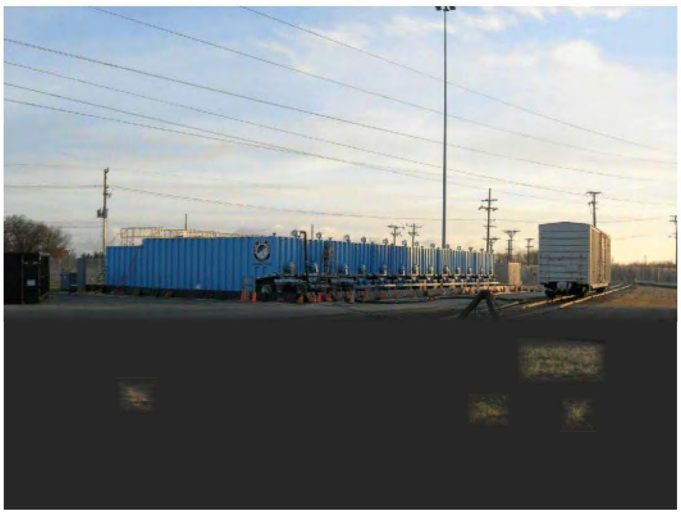
HOW WE INSPECT

The NRC inspection program in this area is directed at inspecting the adequacy and effectiveness of a licensee's evaluation and control of radioactive material released to the environment, that could result in potential doses to the public. The inspectors review implementation of regulatory requirements contained within the station's Technical Specifications and its Offsite Dose Calculation Manual, as well as associated guidance documents (e.g., Branch Technical Positions and Regulatory Guides).

The inspection consists of direct observations and reviews of documentation. The inspector conducts walk-downs of gaseous and liquid release systems to observe material conditions and confirm the system configuration is found as specified in the Final Safety Analysis Report. The inspection provides for observation of routine processing and release of radioactive liquid and gaseous effluents as well as a review of projected radiation doses to members of the public. Also included is a review of dose calculations to ensure monthly, quarterly, and annual dose calculations to members of the public were properly calculated. The inspection procedure provides for review of abnormal releases or releases made with inoperable radiation monitors to verify appropriate compensatory sampling and radiological analyses were conducted, consistent with requirements and to verify appropriate public dose projections were made. The inspection program provides for review and verifications of changes in systems or the ODCM. Special

emphasis is placed on understanding historical changes in projected doses. The inspection includes reviews of instrument calibrations for both laboratory counting instrumentation and effluent radiation monitoring instrumentation and reviews of the adequacy of the quality assurance of the effluent sampling and
analysis program, including inter-laboratory comparisons. The onsite segment also includes a review of a licensee's problem identification and resolution program to ensure associated problems are identified, characterized, prioritized, entered into the program, and resolved.

HP inspectors also conduct a review of the licensee's Radiological Environmental Monitoring Program (REMP) biennially during performance of inspection procedure 71122.03. This consists of a comprehensive audit of offsite monitoring capabilities such as air samplers, water samplers, and vegetable garden locations. The purpose of the licensee's REMP is to verify that their effluents program is conservative in its estimates of dose to the public. No changes to inspection procedure 71122.03 were made as a result of the groundwater contamination issue.



13 outdoor FRAC tanks at Braidwood. As of July 28, 2006, the licensee had about 1.5 full FRAC tanks of the 20 that were once used. Other tanks were processed to reactor primary water standards and transferred to the primary water storage tanks

CONCLUSION

The issue of inadvertent and/or undetected releases of radioactive contamination at reactor sites is one that the agency will continue to follow to ensure that licensees exercise strict control over their radioactive effluents from all sources. We also expect that there will be changes in NRC's requirements related to radiological effluent and environmental monitoring, based on forthcoming recommendations in the Lessons Learned Task Force Report.

MORE INFORMATION

For more information visit the Groundwater Contamination website at:
http://www.nrc.gov/reactors/operating/ops-experience/grndwtr-contam-tritium.html

OR

Contact Stacie S. Sakai, NRR/DIRS, (301) 415-1884.

A tritium fact sheet has also been developed and can be accessed at:
http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/tritium-radiation-fs.pdf

ROP SAFETY CULTURE INITIATIVE STATUS UPDATE

Article provided by Bob Gramm and June Cai

On July 1, 2006, the safety culture changes arrived in the Reactor Oversight Process. With the issuance of Change Notice 06-015, the following Inspection Manual Chapters (IMCs) and Inspection Procedures (IPs) were revised to incorporate safety culture aspects:

IMC 0305, Operating Reactor Assessment Program (John Thompson - lead)
IMC 0612, Power Reactor Inspection Reports (Jim Isom - lead for all 0612)
IMC 0612, App D, Guidance for Documenting Inspection Procedure 71152, Identification and Resolution of Problems
IMC 0612, App E, Examples of Minor Issues
IMC 0612, App F, Examples of Cross-Cutting Aspects
IP 71152, Identification and Resolution of Problems (Serita Sanders - lead)
IP 71153, Event Followup (Don Norkin - lead)
IP 93800, Augmented Inspection Team (Don Norkin - lead)
IP 93812, Special Inspection (Don Norkin - lead)
IP 95001, Inspection For One Or Two White Inputs In A Strategic Performance Area (Serita Sanders - lead)
IP 95002, Inspection For One Degraded Comerstone Or Any Three White Inputs In a Strategic Performance Area (Serita Sanders - lead)

HOW HAS THE REACTOR OVERSIGHT PROGRAM CHANGED?

For starters, there are new terms for you to become familiar with, like the 13 safety culture components. A list of the new terms and their definitions are available on the ROP Digital City webpage. Some other changes include:

(1) IMC0305 has been structured to provide a graded agency response in the safety culture area.
(2) Under certain circumstances, the NRC has the option of requesting a licensee to perform a safety culture assessment, and the NRC can perform its own assessment of a licensee's safety culture.
(3) Safety culture components have been aligned with the cross-cutting areas.
(4) The inspection report documentation for findings related to cross-cutting areas has been modified in IMC 0612 to better support the assessment process.

There is one last IP (IP95003) that needs to be finalized to incorporate safety culture changes, the IP is currently out for regional review.

WHAT'S HAPPENING NEXT AS PART OF THE 18 MONTH INITIAL IMPLEMENTATION PERIOD ROLL-OUT?

Phasing in a change to the ROP can lead to a number of transition implementation issues. Regulatory Issues Summary 2006-13, "Information On The Changes Made To the Reactor

Oversight Process To More Fully Address Safety Culture" was issued on July 31, 2006 (ML061880341) and outlines how the staff will handle a number of implementation transition issues. These transition details have already been worked out with the regional offices. The ROP Digital City web page is going to be updated in August to include a set of safety culture Frequently Asked Questions (FAQs) that came out of the safety culture training during the Spring 2006 resident counterpart meetings. The plan is to keep the FAQs a living document as questions continue to come in. Also, the new safety culture terminology has been added to the ROP Digital City webpage. A Safety Culture ROP Focus Team is going to be established to help ensure uniform implementation of the safety culture changes across regional boundaries. So far, Scott Schaeffer (RII DRP branch chief) and Marvin Sykes (RI DRS branch chief) will be two of the focus team regional members, the others are TBD. The new focus team will also review findings with potential cross-cutting aspects in the Safety Conscious Work Environment (SCWE) cross-cutting area before issuance in an inspection report.

In addition to discussing safety culture during the monthly ROP public meetings, the staff is preparing to meet with the industry in upcoming national and regional utility group meetings to discuss the changes to the ROP relative to safety culture and receive feedback from the industry. And finally, efforts are underway to enhance inspector training classes to include safety culture topics and to modify the MC1245 qualification program to ensure new inspectors receive appropriate training on safety culture.

If you want to obtain more information on safety culture (such as related Commission papers, Staff Requirements Memoranda, public meeting materials, and other relevant documents), a good place to start is the NRC safety culture public webpage at: http://www.nrc.gov/what-we-do/regulatory/enforcement/safety-culture.html

CONTACTS: The NRR Performance Assessment Branch point of contact for safety culture is Bob Gramm (rag@nrc.gov, 301-415-1010) and the NRR Operator Licensing and Human Performance Branch safety culture technical point of contact is June Cai (jxc11@nrc.gov, 301-415-5192).

PI Program - What's New ?

Article provided by Mark Tonacci, IPAB

We have eliminated the old Unavailability Indicators replacing them with MSPI (Mitigating Systems Performance Index).

There's more news!! A new PI, **Unplanned Scrams with Complications**, is under development! This PI will replace the current Unplanned Scrams with Loss of Normal Heat Removal. Jim Trapp (RI), Russ Bywater (RIV) and Don Hickman (HQ) have been negotiating the details of this PI with an industry working group for about a year. Jim Trapp noted in a recent conversation, "This PI should have more greater-than-green results than the old PI." The current draft now includes not only loss of main feedwater, but also stuck rods, failure of a turbine trip, loss of power to an ESF bus, safety injection, and entry into EOPs that are considered complications from a simple trip. Russ Bywater, when discussing the PI with industry at the last meeting noted that, "For each complex trip or scram, MD 8.3 is reviewed to determine if a reactive inspection is needed. The inspection gives the staff a look at the licensee for that specific challenge. However, from a broader perspective, we are looking for a PI that can identify licensees that are having a number of challenging scrams". Right on Russ - We are currently discussing thresholds and more negotiations with industry are needed to finalize the details. Implementation is currently targeted for next year. If you want more details on this new PI contact:

Jim Trapp	**610-337-5186**
Russ Bywater	**817-860-8182**
Mark Tonacci	**301-415-4045**
Don Hickman	**301-415-8541**

Check out the PI FAQs

The approved Frequently Asked Questions (FAQs) have been updated. Several new FAQs were posted last month, predominantly for emergency planning (EP) and MSPI. To review FAQs go to http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html#section6
Don't forget to check the draft FAQs! These are FAQs the licensee has submitted and will be presented and discussed at the next ROP meeting. Each month licensees have an opportunity to draft a FAQ that an industry working group screens. If the FAQ has merit it will be presented at the monthly Reactor Oversight Program (ROP) meeting with the staff, NEI, and industry.

INVITATION!

If you are involved in a draft FAQ you are invited to either call in or come to the ROP meeting. Mark will provide you with conference call information. At the meeting the FAQ will be presented to NEI and NRC staff by industry. So call in and hear first hand what goes on–we would love to have you participate!!

WHY DO WE NEED A POLICY FOR HUMAN RESOURCES MANAGEMENT SYSTEMS?

(This was extracted from Region I's "Read and Sign" training)

Everyone knows that it's important to charge time accurately, but you may not be aware of all the reasons that it's important. Licensees are billed for inspection activities, so it is important that you charge time to the correct docket and report number. Regional management uses HRMS data to monitor our performance at meeting program requirements, and analyzes the data to identify program refinements and support budget formulation.

The guidance available for charging time had not been updated for some time so two Region I staffers, Tracy Walker and $hri Iyer, took the lead. They shared this information with their regional counterparts (Binoy Desi, RII, Hollis Turner, RII, Tom Kozak, RIII, Rebecca Nease RIV and Loretta Williams, RIV), RPS folks and Armando Masciantonio, IPAP, all of whom reviewed the draft and provided input (**GREAT EXCHANGE OF INFORMATION AND SHARING OF KNOWLEDGE**).

NOTE TO INSPECTORS: This guidance was developed for Region I by Region I. The other regional contacts are using this guidance as a basis to create their own region-specific guidance which should be available to you soon.

REGION I'S READ AND SIGN TRAINING AND POLICY GUIDE

Region I is requiring their technical staff complete "Read and Sign," posted on the DRP page on the RI web site at http://r1ntweb.nrc.gov/drs/policies/hrmsreadsign.pdf Region I's new policy can be found on their DRP web page at http://r1ntweb.nrc.gov/drp/DRP%20Policy/HRMSguidance.pdf.

Construction Inspection Program Launches Website

A website has been established to help keep Regional staff informed on the latest and greatest in the development of the Construction Inspection Program(CIP). On this site you'll find a brief description of the CIP with links to historical information, resources available to the folks who are revising and writing the inspection procedures we'll be using, Design Control Documents for the AP1000 and ABWR designs, and most importantly a Frequently Asked Questions (FAQ) section. If you don't get an answer to your question from the existing website information, feel free to ask by emailing: Construction_Questions@nrc.gov

Check out the website by clicking http://nrr10.nrc.gov/CIP/index.html. This link can also be found on the NRR homepage. **Got a topic you want covered in the next article? Send me (Jason Jennings) an email (JRJ3@nrc.gov) or give me a call! (301)415-3297.**

NEW SUPERVISORY EXCELLENCE GROUP

Article provided by Ken Kolaczyk, SRI, Ginna

Are you a new supervisor, or team leader? Do you have questions regarding your roles and responsibilities and would like to discuss them with peers? Do you want to improve your coaching skills? If you answered yes to these questions, then you may want to become part of COINS - the Community of Interest for New Supervisors.

COINS was formed in February 2006 by a group of newly-minted supervisors and team leaders from headquarters and regional offices, for the purpose of discussing mutual items of concern and sharing effective leadership tools and techniques. The group meets once a month for an hour in headquarters, with regional and site personnel members tied in via conference bridge. The discussion topics are varied and have ranged from how to prepare for mid-cycle performance reviews with direct reports, to effective approaches for knowledge management transfer.

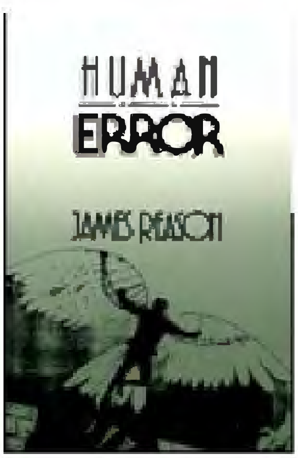
Membership is open to any supervisor/team leader, however, the COINS target audience is for individuals with less than five years of supervisory experience. If you are interested in joining COINS, and wish to be informed of the next meeting announcement simply e-mail Tom Blount, Chief Operations Branch, Division of Preparedness and Response, Susan Daniels, Team Leader, Standards and Quality Assurance Team or Mary Jane Ross-Lee, Chief Operating Experience Branch, Division of Inspection and Regional Support.

HAVE YOU HUGGED A BOOK LATELY?

Mike Kunowski, RIII, DRP/PE sure has-----He provided us with his summer book report on **Human Error** by James Reason. Here's what Mike had to say about the book:

I first became aware of this book during **Problem Identification and Resolution (PI&R)** inspections when I noticed it was often referenced in licensee cause evaluation guidelines and support documents, particularly for definitions of **skill-based, rule-based, and knowledge-based errors.**
The book itself consists of a textbook-type description of basic concepts in human error, from an occasionally wordy, abstruse social science perspective, and a review of American and European past and current (current as of the late 1980s) research. Reason makes frequent reference to the U.S. nuclear power industry for examples, including, of course, Three Mile Island Unit 2 (1979), a 1982 event at Ginna involving a stuck-open power-operated relief valve, and the1985 loss of feedwater at Davis-Besse. But he also discusses examples of human error where people actually died: Bhopal, Challenger, Chernobyl, and Zeebrugge.

I was initially interested in the three types of errors (**skill-based, rule-based, and knowledge-based errors**) that are explained in Chapter 3 "Performance Levels and Error Types". I read this chapter and most of the book in the evenings in Chattanooga during two weeks of simulator requalification training at TTC in June. During the days, my very experienced instructors, Phil Finegan, Gary Callaway, Roy Hickock, and Bobby Eaton, provided me with numerous opportunities to reinforce what I had read, and in the spirit of learning I regularly committed all three types of errors, numerous times, and in various combinations and permutations.



Also of interest in the book was Reason's discussion of **latent errors**. In contrast to **active errors**, whose effects occur immediately, such as when an operator turns off a pump in one train instead of the other train and causes a reactor trip, latent errors can remain un-manifested for years until the right combination of circumstances occurs. These errors are caused by people removed from actual front-line operation of a system or plant, such as high-level decision making managers, construction workers, and design engineers. Reason argues that latent errors pose more of a threat to safety in complex systems than active errors.

James Reason is a professor of psychology at the University of Manchester, England. And is well published in the research area of human error, with an emphasis on errors that occur by trained operators of complex control systems, such as nuclear power and chemical plants. **WANT TO READ THE BOOK?** Contact Mike Kunowski at MAK3@nrc.gov —he will lend you a copy!

Temporary Alteration Fails to Meet Design Analysis Assumptions

Article provided by Tom Setzer, RI

THE ISSUE

During a baseline inspection sample of an emergent work item, the inspectors identified that a modification was performed contrary to the modification instructions, which failed to preserve the structural integrity of a steam generator feedwater regulating valve, and resulted in the valve being declared inoperable.

THE STORY

- Before cap screws were ground

FCV-447, the 24 steam generator feedwater regulating valve, had a history of packing leaks which, as a remedy, required adjustments to the gland packing follower. Further adjustments of the gland packing follower were becoming impossible as the cap screws holding the valve actuator onto the valve body were physically inhibiting its movement (*see Figure 1*). To provide for further adjustments, clearance between the cap screws and the gland follower was achieved through a modification package which instructed maintenance to grind the cap screws at an angle (*see Figure 2*). A specific amount of material to be ground was prescribed in the modification package. FCV-447 is a seismically-qualified component which has a safety-related function to isolate its associated feedwater line following a feed or steam line break inside containment in order to minimize peak containment pressure.

- After cap screws were ground

While reviewing the work instructions in the modification package, the inspectors identified that more material had been ground from the cap screws than had been allowed, and that the licensee's's structural integrity evaluation failed to consider seismic stresses. Based on the inspectors' observations, The licensee declared the valve inoperable and entered a 72 hour action statement as required by Technical Specifications. The licensee later showed that the cap screws on FCV-447 would remain operable under design conditions in the as-left condition, and exited the action statement.

In addition to the cap screw grinding modification, the licensee created a temporary alteration package to cut out portions of the gland packing follower in order to remove the area of interference. The licensee's engineering justification for this modification was based on a finite element model and analysis performed by the vendor for a new gland packing follower that was shaped to remove the interference area. The inspectors reviewed this package and found significant differences between The licensee's and the valve's vendor calculations and assumptions. The inspectors raised these differences to engineering management and as a result, the licensee elected not to perform the alteration until it was reviewed by the vendor. The vendor performed the review and calculated that had the alteration been performed, the allowable stresses of the component would have been exceeded based on the material properties of the gland packing follower. This could have resulted in failure of the gland packing follower and gross leakage of feedwater out of the valve.

THE LESSON

This finding shows the importance of walking down modifications in the field and a careful review of all assumptions made in an engineering analysis to ensure they are consistent with as-built conditions. The inspectors were instrumental in preventing a condition that could have adversely impacted plant and personnel safety.

THANK YOU TO Indian Point Unit 2 Senior Resident Inspector **Mark Cox** and Resident Inspector **Greg Bowman.** Contact either Mark or Greg for additional information.

NSIR TRAINING UPDATE

Provided by Ralph Costello

Regional DRS representatives, TTC representatives, and NSIR staff are scheduled this week to begin discussions and work on review of MC 1245 C4 improvements. The ultimate objective will be to evaluate current requirements and work toward requirement improvements and training availability improvements that meet the needs of the inspection staff.

FIELD OBSERVATION BEST PRACTICE "FOOD FOR THOUGHT"

"Intellectuals solve problems, geniuses prevent them."
(Albert Einstein reminding us to use the Field Observation Best Practices guidance to find problems during walkdowns before they find the licensee during events.)

"It's not that I'm so smart, it's just that I stay with problems longer."
(Albert Einstein on how he manages to identify so many value added findings.)

INSPECTION REPORT AUDIT FORM

Some of you have asked for a copy of the audit form the program office used to conduct their annual assessment audit-----the audit form has been placed on Digital City under ROP Program Guidance.

INSPECTOR NEWSLETTER

OCTOBER 2006

Our goal is to provide useful information to inspectors

NSIR UPDATE

Provided by Ralph Costello

NSIR staff are working closely with all four Regions in developing a presentation on security principles and requirements for the upcoming Residents counterpart meetings. If an inspector has a specific topic area they would like covered during this presentation please pass that on to your Regional meeting point of contact or James Vaughn at NSIR (telephone number 301-415-7653)

INSPECTOR INTERNAL ROP SURVEY 2006

The Agency is seeking feedback from the staff responsible for implementing the ROP (that's you) as an approach of continuous improvement. The survey runs until November 17 2006, and can be accessed from the link below. Your participation is greatly appreciated. We want to hear from you! http://nrr10.nrc.gov/survey/rop2006/rop-survey.cfm

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New Ultra-Low Sulfur Diesel Fuel Oil Could Adversely Impact Diesel Engine Performance

Article provided by Phil Niebaum, DRP, Project Engineer, RII

Synopsis: New ultra-low sulfur diesel fuel oil (ULSD) has different lubricity characteristics, may be incompatible with the existing lubricating oils, has a lower energy content, may degrade seals, and may react with fuel additives and result in increased particulates. This could impact Emergency Diesel Generators (EDG), Diesel Driven Fire Pumps, Diesel Driven Auxiliary Feedwater Pumps. See NRC Information Notice 2006-22, dated October 12, 2006 (ML062710079).

RII DRP Talk: During RII's DRP August 23rd daily safety meeting, a short presentation was given regarding the new ultra low sulfur diesel fuel oil (ULSD). This presentation was based on a recent OpE article by Timothy Mitts, Reactor Systems Engineer, OpE

This picture shows evidence of abnormal piston and cylinder wear on a diesel engine.

WHAT'S HAPPENED SO FAR IN RII-- The presentation was sent to all the Region II resident inspectors. Although additional responses are expected, the first came from Crystal River. In early September, the Senior Resident Inspector (SRI) asked the licensee about the new ULSD. He was assured that their corporate engineering group (Progress Energy) was developing a process to evaluate the long term use of the new fuel for all of its nuclear sites. Additionally, the licensee stated that internal stops existed that would prevent a delivery of ULSD until their engineering evaluation was complete. In spite of these assurances, ULSD was delivered the very next day. It was later determined that approximately 1500 gallons were added to all three of the diesel fuel oil storage tanks (2 of which are safety related). The licensee and the residents performed an operability inspection and found the EDG's remained operable. Additionally, the diesel storage tanks had acceptable sample results. However, the non-safety related tank, which is about one third the size of the other tanks, did have higher particulates and will be recirculated through a filter to reduce the level of particulates. There is no impact to the EDG, but filter D/P will be monitored more closely. The licensee has taken action to write a Nuclear Condition Report (NCR) to address the change management and any potential long term effects to the EDG's. The Crystal River licensee staff will also inform the other Progress Energy sites of this issue. The SRI also communicated this issue with other Progress Energy resident inspectors.

Concurrently, the resident inspectors at the Hatch Nuclear Plant questioned the licensee about ULSD. It was discovered that earlier this year, the Hatch EDG owner's group hired a consultant to evaluate the impact of ULSD. However, their results of this evaluation were inconclusive. At this time, the licensee is pursuing more detailed evaluation of ULSD before it actually arrives on-site.

WHAT'S HAPPENED SO FAR IN RI--In September 2006, Millstone Units 2 and 3 found that the rate of particulate in the diesel fuel storage tank increased. It was found that the primary supplier of diesel fuel for Millstone uses a lubricity additive for ULSD. This is necessary since the sulfur content aids lubricity characteristics of diesel fuel. According to several laboratory fuels specialist, escalating fuel costs are driving refineries to use wider qualities of fuel and introduce additives to supplement the fuel quality. These additives are sometimes incompatible and can cause compounds to come out of solution. Newer diesel fuels may also be more susceptible to instability as a result of refineries using a chemical cracking process vs. the more traditional distillation process. The licensee initial action was increasing the sample frequency and recirculating the diesel fuel through a filter arrangement. Most recently they decided to drain and refill the alpha and bravo fuel oil day tanks. This requires a 72 hour LCO for each drain and refill.

In August 2006, Nine Mile Point's initial diesel fuel oil test results were satisfactory, but subsequent testing by an offsite laboratory showed the diesel fuel was actually a blend of Low Sulfur and Ultra-Low Sulfur diesel fuel with a sulfur concentration of 45 ppm. The licensee did not have an analysis of the acceptability of the Ultra-Low Sulfur diesel fuel (below 500 ppm).
Potential Nuclear Safety Concern: Refiners also supply this ultra-low sulfur diesel (ULSD) fuel oil to licensees that gets used in safety applications (e.g., EDGs). Many EDG engines were designed to run on No. 2 low sulfur diesel fuel oil (500 ppm sulfur fuel), or No. 2 diesel fuel oil (5000 ppm sulfur prior to 1993). These EDGs can use the new ULSD No. 2 fuel, and will actually run cleaner using the new fuel. However, the sulfur was part of the overall lubricity package. Many fuel components (injector pumps and injectors) rely on the lubricity of the fuel to keep them operating properly. The reduction in sulfur definitely reduces the lubricity of the fuel. Licensees should be aware of this imminent change in diesel fuel oil and evaluate it to ensure no adverse impact on EDG availability, reliability, and/or capability. Also, certain engine seals are subject to failure due, in part to the lower aromatics of the new ULSD. Aromatics normally absorbed in seals will cause them to swell. However, certain seals have been shown to shrink when exposed to fuel with lower aromatics such as ULSD. Failure occurs due to the reduced elasticity of seals that have been in service for longer periods.

INSPECTOR TIPS:

1. Has the licensee applied adequate engineering rigor to evaluate this permanent plant change to ensure no adverse impact on EDG performance and capability and other diesel engines?
2. Verify the cetane rating for the new fuel will be maintained at or above that of the current fuel. The minimum value for diesel fuel is 40. The new fuel may not meet engine manufacturer recommended cetane rating. Higher cetane results in more power and quicker starts and may also impact the fuel consumption rate.
3. Based on industry OpE (see NRC Information Notice 96-67 highlights below), what changes, if any, is the licensee making to its diesel engine maintenance and monitoring program (including PMs)?
4. What about availability? Has the licensee verified that their supplier can continue to meet their delivery requirements (including any UFSAR and/or licensing bases commitments needed for long-term diesel engine operation)?
5. What about microbe growth? The new fuel will still support microbe growth. In fact, early reports indicate that the microbe colonies may grow even faster in the new fuel than they did in the old.
6. What about water contamination? Water contamination will remain the principal contaminate of the new fuel.
7. What about long term storage? There have been some questions about long term storage of the new ULSD.

LOTS OF OTHER HAPPENINGS REGARDING ULSD CAN BE FOUND AT:

http://nrr10.nrc.gov/forum/forumtopic.cfm?selectedForum=03&forumId=EDG&topicId=1267

Acknowledgments:

Special thanks to Haywood Anderson (Calvert Cliffs CDBI mechanical contractor) who informed NRC Region I and to Joe Schoppy & Karl Diederich (610) 337-5342 (NRC Region I, DRS Engineering Branch 1) for sharing this Region I OpE Moment.

ROP Safety Culture CHIT CHAT !

What about training? Did you miss the Spring 2006 counterpart training on safety culture? If so, check out the ROP Digital City webpage for links to the training that was provided at Region IV. Alternatively, check with your regional Safety Culture Focus Team representative to find out how you can borrow a DVD of the counterpart training.

Something new and interesting for you-----Added to ROP's Digital City webpage is a set of safety culture Frequently Asked Questions and Answers.

Some new developments--Workshops were recently held at the industry Regional Utility Group (RUG) meetings for Regions II and IV. The workshops were very well received by the industry and served as a forum to explain how the ROP changes would affect licensees. The RI and RIII workshops will be held in November, 2006.

IMC-0612 and IMC-0305 Stuff-----As a reminder, remember that when you hold an exit (and pre-exit) meeting and a finding is identified that has a cross-cutting aspect, that the licensee should be informed of the associated cross-cutting aspect. If circumstances change following the exit with the cross-cutting aspects, Residents and Branch Chiefs should communicate with their licensees so that there are no surprises when the inspection reports are issued. In addition, you should also follow the new IMC 0612 , "Power Reactor Inspection Reports" guidance (section 06.03.c (5)) which directs that for findings that have with a cross-cutting aspect, the reasons why that cross-cutting aspect is a significant contributor to the finding should be documented using language that parallels the descriptions of cross-cutting aspects in IMC 0305, "Operating Reactor Assessment Program" (section 06.07.c) .

The Safety Culture Focus Team members are:

Marvin Sykes (RI),
Scott Shaeffer (RII),
Ken O'Brien (RIII), and
Linda Smith (RIV).

Headquarters Contacts:

Bob Gramm (rag@nrc.gov, 301-415-1010), NRR, Performance Assessment Br.
June Cai (jxc11@nrc.gov, 301-415-5192), NRR, Operator Licensing & Human Perf. Br.

INSPECTOR NEWSLETTER CONTRIBUTORS

The inspectors listed below received awards, in the form of NRC logo shirts, for their contributions to the August Inspector Newsletter:

Tracy Walker, RI
Shri Iyver, RI
Greg Bowman, RI
Mark Cox, RI
Adam Nielson, RII
Justin Fuller, RII
Mike Kunowski, RIII
Louis Carson, RIV

Region II Construction Inspection Organization

By now you've probably heard that the new plant construction inspection organization will be based in Region II. Well that organization will become effective on October 1, 2006. An Internal Communication Plan was issued to support this group. It includes such information as a Q&A section and information on the staffing plans for construction inspectors. Check it out by clicking here and let us know if there's anything else you want to know about this or other construction related items for the next article. Submit your questions to:

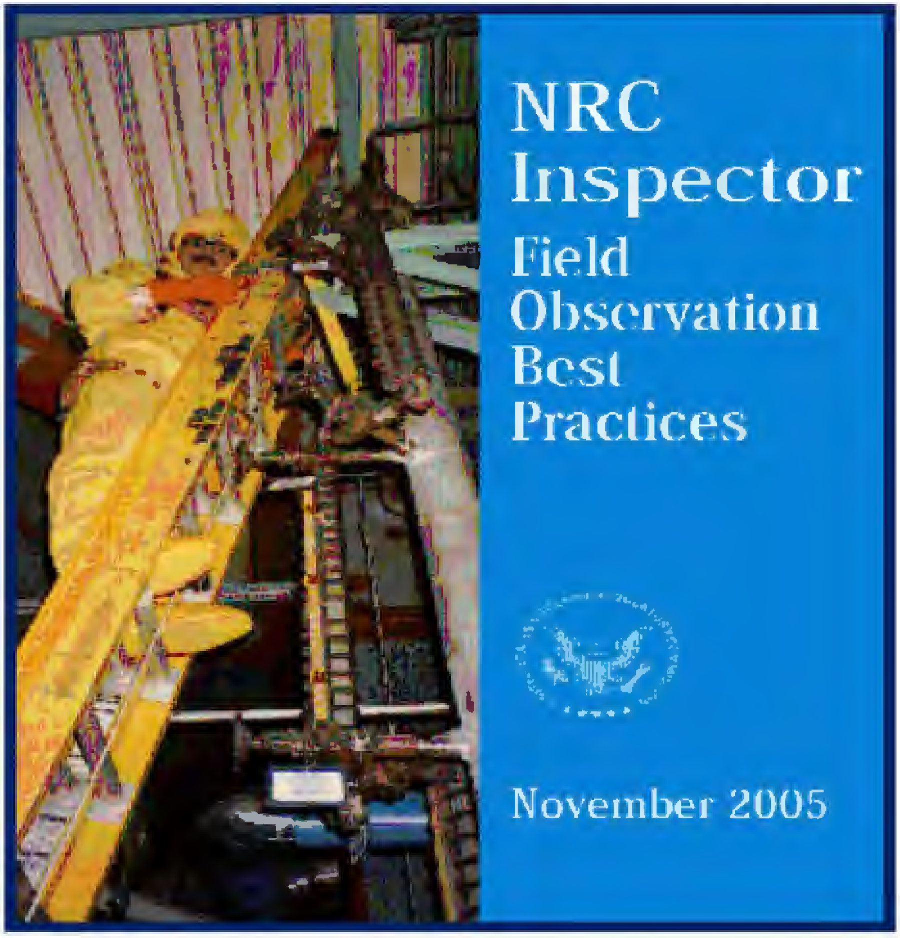
Construction_Questions@nrc.gov

Farewell from the Inspector Newsletter Editor

I am leaving the Reactor Inspector Branch and moving on to the New Reactor Office. This is my last newsletter. I will truly miss working with you and with all the great people in the regional offices. It has been an honor to work on the Inspector Newsletter since it's inception on January, 2003. I am leaving you in good hands—Ron Frahm, Senior Reactor Engineer and Brian Smith, Reactor Engineer, both of the Performance Assessment Branch, will take my place (yes, it takes two guys to replace me :)----I just could not resist! I wish everyone much joy!

Sincerely,

Fiona



WHERE CAN I FIND THIS BOOKLET?

GO TO ROP'S DIGITAL CITY OR CLICK ON:

http://nrr10.nrc.gov/rop-digital-city/newsletter/nrc-inspector-best-practices.pdf

"Keep on going and the chances are you will stumble on something, perhaps when you are least expecting it. I have never heard of anyone stumbling on something sitting down."

Charles F. Kettering (Engineer and Inventor) on getting out and doing thorough walkdowns using the Field Observation Best Practices.

"The key to wisdom is knowing all the right questions."

John A. Simone Jr. (theater, film, music, & book critic) on finding the time to review the Field Observation Best Practices for insights on many of the right questions to ask.

Quote and links to the Field Observation Best Practices Booklet submitted by Joe Schoppy, RI, DRS Inspector and one of the contributors to the Booklet. Thank you, Joe!

"COMMUNITY OF PRACTICE" FOR RISK-INFORMED REGULATION"

It's brand new--- Be the first to chat and we'll feature you in the next newsletter–How can you refuse? **:)**

Who developed this and why-----Staff in NRR's Division of Risk Assessment developed this to give **YOU** another resource when you have questions about risk-informed regulation. As part of an overall effort to enhance NRR staff knowledge of risk-informed regulation, they created the new **@Risk-InformedCommunity** website (http://nrr10.nrc.gov/forum/index.cfm?selectedForum=08). This site is a web-based bulletin board for Q&A on risk-informed activities.

Feel free to post questions when you'd like an NRR risk expert's perspective on **the significance determination process, safety-significant systems, or other risk-related topics.** (You'll need to fill out a brief registration form and log in before you post, although no login is needed to read previous posts.) You can also use the archived posts on the web forum as a resource. No question is too simple - if you're confused, many other inspectors probably are as well! The forum administrators will ensure that the right person answers the question and that the answer is posted to the website for future use.

This new "community of practice" is an excellent tool for both knowledge exchange and knowledge management for the future. We look forward to seeing your questions! For more information, contact Theresa Valentine Clark, NRR/DRS (TXV, x4048).

RII TFPI INSPECTS BASICS, GETS FINDINGS

by

Paul J. Fillion, Fire Protection Team Leader/Division of Reactor Safety, RII

A triennial fire protection inspection (TFPI) was performed at Surry Power Station in June 2006. **This inspection provided evidence of how independent checking of the most basic system attributes can uncover long standing design problems and how knowledge of the design basis can erode over time.**

The TFPI team selected three fire areas for review. Two of these fire areas, a switchgear room and a cable vault, are protected by a low-pressure total flooding carbon dioxide (CO_2) fire extinguishing system. Design calculations for the CO_2 systems were not available, however documents existed which identified the room volumes and quantity of CO_2 that the systems would inject into the rooms.

A discrepancy was identified during the in-office preparation week when Brian Melly, the fire protection engineer on the inspection team, calculated the volume of the switchgear room from drawings obtained during the information gathering visit. Brian recognized that the volume of the switchgear room is about 50 percent larger than volume the licensee's documents indicated. Using Brian's estimate of the true room volume and the quantity of CO_2 shown in the documents, the concentration of CO_2 would be significantly less than the 50 percent required to extinguish “deep seated” cable fires. The licensee was informed of this finding. They performed an independent calculation that confirmed our finding, declared the system inoperable, posted fire watches and took other precautions against fire initiation.

Later, Brian identified that the cable vault also had significantly more volume than indicated on the documents, which again translated to less than required CO_2 concentration. By the end of the inspection, the licensee had reviewed all 10 fire areas protected by a total flooding CO_2 system. The CO_2 concentration in five of the ten areas was calculated to be less than 50 percent. A major contributing cause, if not the root cause, of this situation was errors in the calculation of the room volume, a critical parameter in designing a CO_2 system.

The team found that the licensee’s knowledge of the CO_2 system design basis had eroded over time due to staff turn over, inadequate CO_2 system discharge testing and misplaced records. Since initial plant startup, only one of the ten CO_2 rooms received a complete discharge test to confirm the system capability. Over time the test data sheets were misplaced, and all that remained of the testing records was a signed document stating that CO_2 testing had been completed. Until the test records were recently retrieved, current engineers optimistically assumed that all the CO_2 areas had received and passed a discharge test.

(b)(6)

Brian Melly

Another example of how the design basis for the CO_2 systems degraded over time was a modification to the switchgear room dampers. The design basis documents stated that all ventilation dampers at the envelope of an area protected by CO_2 would automatically close upon initiation of the CO_2 system. However, the switchgear room fire dampers did not have any CO_2 initiated automatic close feature. The licensee had previously evaluated this issue and determined that other ventilation dampers located upstream in the ductwork (and in another room) were designed to automatically close upon initiation of the CO_2 system. However, the team found that the motor on these damper actuators had been removed. As a result, whenever these manually operated dampers were open, a large leakage path was created for CO_2 to exhaust from the fire area. We later learned that the licensee removed the damper motors 10 years ago as part of a modification to increase the cooling capacity the HVAC system. Records indicate that the field change may not have been reviewed by the fire protection engineer. The inspection team noted that even if the damper had worked, design calculations did not take into account that having a remote isolation damper effectively increased the room volume by the volume of the ductwork involved.

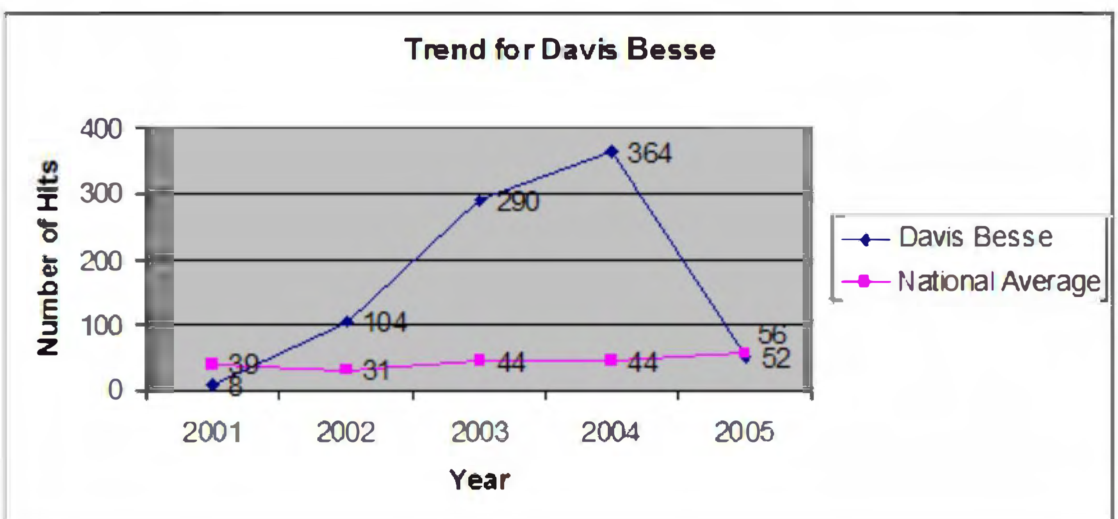
HERE’S THE BIG LESSON: The Surry TFPI illustrated how independent checking of **basic attributes** can reveal long standing design problems and how knowledge of the design basis can erode over time. Region II’s evaluation of the significance of these findings is ongoing.

For additional information go to IR2006009 or contact Paul Fillion.

Human Factors Information System

WHAT IS THIS? The Human Factors Information System (HFIS) is a database managed by OLHPF?/NRR to track and trend information about human performance problems/issues at nuclear power plants. The information sources for HFIS are Inspection Reports (IR's) and Licensee Event Reports (LERs) (excluding any reports with security/safeguards information). Descriptions of human performance problems/issues from the reports are coded and recorded on several dimensions, including type of problem/issue, the work being performed, and the personnel involved. Data is available from 1997 and added to the system approximately three months after reports are entered into ADAMS. The main HFIS data categories are: 1) training, 2) procedure and reference documents, 3) fitness for duty, 4) oversight, 5) problem identification and resolution, 6) communication, 7) human system interface and environment, and 8) work planning and practices. Each of these categories is further divided into areas and details.

HOW CAN THIS HELP YOU–THE INSPECTOR? HFIS has several report functions which can generate a variety of reports and analysis. For example, if you are interested in knowing which IR's and LERs over a certain period of time have human performance problems/issues documented, HFIS can produce such a list for the inspector's review. HFIS can also provide a variety of reports on various trends and comparisons of site's human performance problems/issues. Two example reports are shown below.



Example 1: This graph shows the number of "hits" (problems/issues) documented for Davis Besse compared to the national average for 2001-2005.

2005 Top Contributors

Code	Number of Hits	Percentage of Total
188 Work practice or craft less than adequate (Work Planning and Practices)	1034	18%
190 Failure to stop work/non-conservative decision making (Work Planning and Practices)	564	10%
111 Procedure/reference document technical content less than adequate (Procedure and Reference Documents)	497	8%
144 Audit/self-assessment/effectiveness review less than adequate (Problem Identification and Resolution)	337	6%
148 No action planned (Problem Identification and Resolution)	305	5%

Example 2: This table shows the detail codes which has the most number of "hits" (problems/issues) across the industry for 2005.

HOW CAN I GET THIS RESOURCE? HFIS is available internally to all NRC employees. To gain access to the system or to obtain more information, please contact June Cai (415-5192, jxc11@nrc.gov).

IF I DON'T HAVE THE TIME, HOW CAN I GET INFORMATION? If you are interested in seeing any data or analysis from HFIS, please contact June, and she will be glad to produce customized reports for you.

HERE'S WHAT CHUCK CASTO, DIRECTOR, DRP, RII HAS TO SAY ABOUT HFIS-" HFIS has provided me with invaluable insights on human performance. It can give you a perspective on human performance at both the site and industry levels."

~~FOR INTERNAL USE ONLY~~

Senior Resident Interviewed by CNN

Finally reaching television, the much and long anticipated broadcast of Mike Hay's interview with CNN at Waterford's nuclear facility hit the airwaves on August 17th. After being bumped from schedule twice, the second time by President Bush's press conference discussing the most recent terrorist plot on British airliners, CNN aired Mike's interview with reporter Jonathan Freed focused on nuclear security at commercial power plants.

Mike discussed with CNN an overview of recent enhancements to nuclear security at Waterford which included additional guard towers added and improvements to security training. Mike highlighted that NRC is doing all they can to ensure safety in a post 9/11 world.

Want to see the video, click on What's New on Region IV's web page.

Check out Mike Hay's Interview with CNN's Jonathan Freed on Region IV's Website

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

REACTOR INSPECTION PROGRAM NEWSLETTER

Issue 96---01 April 9, 1996

Contents of this Newsletter

Revised IMC 0610, "Inspection Reports"

Background

In April 1995, the Inspection Program Branch (PIPB) began a major revision to Inspection Manual Chapter (IMC) 0610, "Inspection Reports." This effort included a thorough review of regional and headquarters reporting practices, including variations in report content, format, and style. A May 30, 1995 Federal Register notice solicited public comment on NRC inspection reports and the reporting process. Meetings were held in each region to discuss the proposed scope and content of IMC 0610, and to engender discussion and achieve consensus on report-related issues. Various headquarters offices, including the Office of Nuclear Material Safety and Safeguards (NMSS), the Office of Enforcement (OE), and several groups within NRR, also provided essential input. After an extensive review and comment period, PIPB released the new revision to IMC 0610, "Inspection Reports," on February 2, 1996.

Scope of Changes: Report Content

"Observations, Findings, and Conclusions": the revised IMC 0610 introduces these three terms as a way of referring to the logic of developing and presenting inspection information. Observations are the basic issues, the bare facts gathered during the inspection (e.g., the pump failed, or the procedure wasn't followed). Findings are observations placed in context and assessed for significance: that is, who found the issue, what was the root cause, what corrective actions were taken, etc. Conclusions involve integration--relating one finding to another, or relating several findings to the larger context of a Systematic Assessment of Licensee Performance (SALP) functional area or sub-area.

"Thresholds of Significance": this term refers to making judgments on what details merit inclusion in the inspection report. In the enforcement arena, PIPB worked extensively with OE to develop a set of questions that would differentiate between Severity Level (SL) IV violations and "minor" violations (previously classified at SL V). These concepts are also applied to non-enforcement-related issues.

"Level of Detail": this section discusses identifying the report reader, writing concisely, and deleting useless boilerplate. The intent of this revised guidance is to focus the report details on the more significant inspection findings, and to avoid inflating the report with unnecessary discussions of inspector activities. IMC 0610 also gives specific criteria for determining the level of detail when discussing licensee event reports (LERs), audits, and self-assessments.

"Documenting Performance-Based Inspection": several difficult topics are discussed here, including (1) documenting strengths and weaknesses, (2) documenting licensee management issues, and (3) documenting issues in areas not covered by regulatory requirements. The latter subject is especially sensitive; in seeking to identify clear standards of expected performance, inspectors must be careful not to create new requirements or unintentional backfits.

Scope of Changes: Report Format

Since current report formats vary considerably across the agency, the format changes presented in IMC 0610 will impact some inspectors more than others. Three format changes will significantly increase the consistency of report appearance and presentation: first, the use of a standardized method of presenting the details of each issue or specific inspection area, in terms of inspection scope, observations and findings, and conclusions; second, the use of a standardized report outline for arranging and presenting those individual issues; and third, the use of a standardized executive summary approach.

This guidance should result in presenting report details in a clear, consistent, and useful manner. In addition, these format changes should lead naturally into report computerization and new software development (see the discussion of the Automated Inspection Report System (AIRS) project, p. 7).

Scope of Changes: Report Style

The revised IMC 0610 expands the guidance on writing style, including discussions of purple language, clear organization methods, and effective revision practices.

Implementation

The goal for implementing this IMC 0610 revision is June 1, 1996. While some offices will begin earlier, all inspection reports issued after that date should reflect the new guidance.

The first phase of implementation is the training that accompanies this revision--a combination of lecture and interactive workshop designed for both report writers (inspectors) and reviewers (supervisors/managers). The report writing course is 1½ days, with a separate ½-day course for reviewers.

PIPB and the regions have compiled an aggressive training schedule that should result in all reactor-related personnel receiving the training by mid-May. (A separate course will be presented for individuals who write and review inspection reports for NMSS licensees.) This schedule reflects the view that everyone involved with the reporting process should make this transition in practice at more-or-less the same time.

The second phase of implementing IMC 0610 will be inspection report review and monitoring. PIPB already reviews reports; what will change--for some undefined period as the new IMC 0610 concepts are put in place--is that PIPB will choose a few reports each month for comment, and will return the comments to the associated branch chief. The goal of this monitoring is not to grade reports or create an ongoing audit, but to provide centralized guidance and assistance as changes are implemented and problems are encountered.

Finally, PIPB plans to include short, excerpted examples of good report writing in upcoming issues of this newsletter.

Questions and comments on IMC 0610 and related topics should be directed to Laban L. Coblentz via e-mail (LLC1) or by calling (301) 415-2619.

PPR Process Update

The last issue of this newsletter (95-02) presented the status of the plant performance review (PPR) process. At that time, the Inspection Program Branch (PIPB) was generating standard PPR guidance, incorporating good practices that had been developed through regional PPR experience. This guidance was reviewed and commented on by the regions, and discussed during the January 1996 Senior Management Meeting (SMM).

Based on these discussions and reviews, a draft IMC was issued for immediate implementation on February 9, 1996. Among other concepts, this draft IMC standardized the use of a historical list of plant issues (sometimes referred to as a site issues matrix) as raw assessment data for PPR analyses. PIPB has asked the regions to comment on their experience with implementing the draft IMC after the Spring 1996 NRR screening meetings. After incorporating these comments and any lessons learned, PIPB plans to finalize and issue the IMC during the summer of 1996.

Questions and comments on the PPR program should be directed to Robert C. Haag via e-mail (RCH) or by calling (301)415-1245.

IG Audit of the Inspection Program

Background

On December 27, 1995, the NRC Office of the Inspector General (IG) issued OIG/95A-04, "Factors Contributing to Inconsistency in the Operating Reactor Inspection Program." This audit sought to address factors in the reactor inspection program that contribute to a perception of inconsistent implementation.

Discussion of Findings

The IG identified several factors that contribute to perceived or real inconsistency. First, the degree of interpretation inherent in some regulations, when combined with provisions for enforcement discretion and placed in the context of plant-to-plant variations (in licensing commitments, design, etc.), creates considerable flexibility in how the inspection program is applied. The complexity of the regulatory environment may require this flexibility; however, to avoid a resulting inconsistency of application, the inspection program needs well-developed training, clear management expectations for inspectors, and an efficient organizational structure.

Regarding inspector training, the IG found that standards were inconsistent to ensure an equal and consistent knowledge base. The audit stated that, in particular, the focus and adequacy of on-the-job-training (OJT) were dependent on the specific priorities of the inspector's direct supervisor. In addition, some inspectors felt that they were often asked to evaluate licensee management performance without being trained in this area.

Regarding clear management expectations, the IG found that inspectors had difficulty in reconciling the concept of "performance-based" inspection with perceived pressure to emphasize compliance by citing violations.

Finally, the IG audit stated that the NRC's decentralized organizational structure (i.e., regional jurisdiction over most of the inspection staff), combined with the program flexibility described above, had resulted in "significant differences" in regional implementation. In particular, the audit pointed out differences in various applications of NRC enforcement.

To resolve these issues, the IG recommended that NRC management (1) reevaluate the inspector training program, (2) clarify management expectations on fundamental aspects of inspection, and (3) consider shifting inspection program implementation responsibility from the regions to headquarters.

Staff Response

A December 15, 1995 memorandum from the Deputy Executive Director for Operations (for reactors) (DEDR) provided the staff's response to the draft audit. In that memo, the DEDR agreed with the IG's first two recommendations. The memo stated that a review of IMC 1245, "Inspector Qualifications," was intended (1) to consolidate the total number of inspector types, (2) to standardize qualification requirements, and (3) to evaluate the mix between classroom training and OJT.

The memo also reaffirmed management's commitment to achieving clear communication with the staff. Various initiatives were discussed, including changes to the Enforcement Policy, the revision to IMC 0610, follow-up on the Towers-Perrin review, and action to develop situational training on performance-based inspection techniques.

The DEDR disagreed, however, with the general idea of shifting inspection responsibilities from the regions to headquarters. The memo cited a possible reduction in regional safety focus and a potential adverse effect on current checks and balances as two reasons not to make this change. The memo noted, however, that the current NRC strategic assessment and rebaselining effort would review the inspection program.

A copy of this IG Audit (including the DEDR response to the draft audit) may be obtained by calling (301)415-5915.

GAO Audit of South Texas Nuclear Plant (STP)

Background

In October 1995, the General Accounting Office (GAO) released GAO/RCED-96-10, "Weaknesses in NRC's Inspection Program at a South Texas Nuclear Power Plant." This May 1994 to September 1995 GAO study was conducted at the request of Representative John Dingell, the Ranking Minority Member of the House Committee on Commerce. The study focused on the February 1993 STP shutdown, the events and conditions that led to the shutdown, and the NRC's monitoring of STP.

Discussion of Findings

In presenting the GAO's findings, the report repeatedly referred to the NRC self-assessment conducted from June 1994 to March 1995--the South Texas Project Task Force (STPTF). A discussion of the STPTF findings was presented in Issue 95-01 of this newsletter.

The GAO report stated that the NRC was not fully aware of the equipment problems related to the February 1993 STP shutdown, and not aware of the magnitude of licensee performance problems until after the shutdown. The NRC's self-assessment, as presented in the GAO report, focused on inadequate NRC integration of findings, failure to follow up on licensee corrective actions, inadequate inspection presence (insufficient and inexperienced inspectors), and inconsistent pursuit of enforcement actions. The GAO made no recommendations in its report.

A copy of the GAO report can be obtained by calling (202)512-6000.

PRA Applications Corner

A portion of this newsletter will be devoted to sharing inspection experience gained using probabilistic risk assessment (PRA) concepts and methods. This column is intended to be an inspectors' forum for both positive and negative experiences with PRA. Inputs should be submitted to Douglas H. Coe via e-mail (DHC) or by calling (301)415-1244.

Case 1

An NRC inspector noticed that an instrument technician was performing channel calibrations sequentially, one channel immediately after another. This practice increases the likelihood that a human error, procedure error, or calibration equipment error could be propagated through all instrument channels. The inspector questioned how calibration methodology was addressed in the licensee's individual plant examination (IPE). He determined that "preinitiating" human errors had not been considered, and the licensee could not calculate the associated risk impact. While the inspector was discussing this issue with licensee management, an instrument technician miscalibrated both trains of core spray. The licensee is now converting their instrument calibration procedure to a method less susceptible to common cause failure.

Common mode failure of redundant equipment is a significant factor in most PRAs. In this case the original calibration method did not violate any regulation; however, it was not risk-informed or in accord with methods used by other licensees to reduce the likelihood of similar failures. The absence of a numerical model for the specific item of interest did not preclude the use of risk concepts in focusing the inspection effort. For further details, contact Melvyn N. Leach via e-mail (MNL) or by calling (708)829-9705.

Case 2

One of the roots of PRA is statistics, which may provide insights into inspection observations. For example, if an I&C calibration on all four RPS channels reveals as-found setpoint voltages generally higher than a 250 millivolt (mv) nominal setpoint (say 251.6mv, 253.6mv, 253.8mv, and 254.9mv), the inspector might justifiably state to the licensee that there is a less than 1 per cent chance that the data would look like this if the equipment is performing with random variability around the 250mv setpoint. In other words, convincing statistical evidence indicates that non-random (common-cause) factors are at work.

If you wish to pursue this example or others like it, a useful reference is NUREG 1475, "Applying Statistics" (to order, call (202)512-2409). A one-week NRC training course of the same name is also offered periodically at HQ. In addition, a simple calculational method needed to arrive at the above conclusion can be obtained by request from Douglas H. Coe via e-mail (DHC).

Case 3

An error in an IPE model resulted in licensed operators receiving erroneous guidance regarding the risk due to an emergency switchgear ventilation (ESV) system. While reviewing IPE results during an Integrated Performance Assessment Process (IPAP), an NRC inspector questioned why one train of ESV was substantially more risk significant than the redundant train. The licensee then identified that only one train of ESV was modeled, so that when this train was unavailable the IPE results indicated an erroneously high risk. This illustrates the value of applying a questioning attitude and common sense to the use of PRA results. For further details, contact Melvin C. Shannon via e-mail (MXS1) or by calling (301)415-1291.

Facility Changes Performed Under 10 CFR 50.59

Background

In an October 27, 1995 memorandum to the Executive Director for Operations (EDO), NRC Chairman Shirley A. Jackson asked for reconsideration of staff practices related to licensee actions under 10 CFR 50.59. The Chairman's request focused on better integration of information, incorporation of risk perspectives, consideration of cumulative safety impact, and consistency in practice.

Status

The staff responded in a December 15, 1995 memorandum from the EDO to the Chairman, agreeing that a reevaluation in this area would be beneficial. Plans were outlined for reviewing all guidance related to implementing 10 CFR 50.59, focusing on internal consistency, areas for improvement, review of the past year of licensee 50.59 changes, and development of an action plan. This memorandum also discussed plans for endorsing existing industry guidance (or developing new guidance) on this topic.

Most recently, a February 15, 1996 memorandum from the NRR Division of Reactor Program Management requested regional input on what aspects of 50.59 implementation would benefit from clarification (e.g., the meaning of "change" as used in 10 CFR 50.59, treatment of "as-found" conditions under the rule, quality of licensee documentation, etc.). Comments or questions on this topic should be addressed to Eileen M. McKenna via e-mail (EMM) or by calling (301)415-2189.

New Draft IMC 0620, "Inspection Documents and Records"

Background

The Inspection Program Branch (PIPB) has been developing a new IMC 0620, "Inspection Documents and Records." This new guidance establishes the NRC policy for requesting, controlling, and dispositioning NRC inspection documents and records during all phases of the inspection program. PIPB has solicited and received comments on two draft versions of this guidance, and plans to release the final IMC 0620 soon.

Focus of the New Guidance

A fundamental concept underlying this guidance is the consideration of future retrievability for documents that support inspection findings. Some of these documents are licensee-controlled, and some NRC-controlled. Some documents are required to be made publicly available (or available via requests made under the Freedom of Information Act (FOIA)); others are not. IMC 0620 specifies the guidelines for making these distinctions.

For example, regarding licensee documents requested to prepare for an upcoming inspection, the draft IMC 0620 states: "As a minimum a list of all the documents and records reviewed during an inspection shall be made publicly available by including it in the inspection report either as an attachment or within the body of the inspection report, or by sending it to the PDR [public document room] under a separate cover letter."

Changes in practice such as this will make the new manual chapter essential reading material for most reactor inspectors. Nuances of FOIA policy and public availability can be especially intricate; among other topics, the draft IMC 0620 covers what to do with handwritten notes and licensee forms, when it's okay to provide written lists of significant issues to licensees, differences that apply when licensee documents are received as personal mail (rather than being processed as NRC records), and when documents may be retained by the NRC but not placed in the PDR.

Comments or questions about the new IMC 0620 should be directed to John A. Nakoski via e-mail (JAN1) or by calling (301)415-1278.

Job Task Analysis to be Performed

Background

During the senior resident inspector (SRI) counterpart meeting held September 12-13, 1995, several issues were raised bearing directly on the scope and nature of the SRI and resident inspector (RI) positions. Differences of opinion were apparent on such matters as (1) the relevant importance of various tasks, (2) the impact of administrative processes on actual inspection time, (3) the need for additional training to meet job demands, and (4) the clarity of management expectations.

The Inspection Program Branch (PIPB) found that several other issues, in addition to those raised at the SRI counterpart meeting, indicated the need for a job task analysis (JTA). Recent streamlining has eliminated one layer of regional supervision, reassigning those tasks to the residents or branch chiefs. Increased emphasis on integrating licensee performance information have expanded the associated tasks. The budget model for determining inspection resources is outdated and based on assumptions no longer valid. Each of these factors have been considered in planning the JTA.

JTA Focus and Scope

Although still in its early stages, this study is intended to focus on regional personnel from the Division of Reactor Projects (DRP)--SRIs, RIs, project engineers, and branch chiefs (a similar analysis of DRS positions may follow). These jobs will be systematically analyzed; individual tasks will be identified, characterized, and prioritized. This information will be compiled, validated, and then used (1) to develop job descriptions, (2) to diagnose job design deficiencies, (3) to identify needed skills, knowledge, training, and experience, (4) to update and clarify management expectations for job performance, and (5) to revise time reporting procedures and budget formulae.

A variety of methods and approaches have been considered for the JTA. PIPB is currently working with an outside contractor to weigh the merits of these approaches. Based on current inclinations, the JTA will likely use a combination of focus groups, surveys, and on-site observations. Regardless of approach, the scope of the study must be broad enough to account for variability caused by regional differences, by plant size and operational mode, and by differences in licensee performance.

Updates on the JTA will be provided in future issues of this newsletter. Comments or questions on this subject should be directed to Laban L. Coblentz via e-mail (LLC1) or by calling (301)415-2619.

Automated Inspection Report System (AIRS)

Background

In the summer of 1995, NRR's Division of Inspection and Support Programs began a project to automate the development, review, and issuance of inspection reports for operating reactor plant inspections. This project became known as "AIRS"--the Automated Inspection Report System. Under a contract with The Centech Group, Inc., this project is well into the design phase, and is on schedule to install a prototype in Region II by October 1996.

The most efficient of current NRC inspection reports (other than the field notes and Form 591 summaries issued to NMSS licensees) are still based on WordPerfect and electronic mail. Plant performance data is captured in disparate information systems such as IFS (the Inspection Follow-up System), SIMDB (the Site Issues Matrix Data Base), and various WordPerfect files. These systems do not effectively share data, which results in the double entry of information.

In addition, the desired information is not always readily available in a useable format, resulting in excessive preparation time for PPRs, SALPs, IPAPs, and other assessment efforts that depend on integrating large volumes of information. These inefficiencies, in turn, adversely affect the efficiency of inspectors, managers, and support staff.

AIRS Functional Description

As a primary goal, the AIRS creators hope to eliminate or minimize current inspection report process inefficiencies, and to add capabilities currently unavailable for data integration and retrieval. As currently designed, the system will operate in the NRC local- and wide-area-network (LAN/WAN) environments, with remote users occasionally connected and periodically updated to the LAN, and roaming users operating via notebook computers. Although AIRS will support a wide range of inspections, it adheres to the standardized formats described in the new IMC 0610 (see the discussion on pp.1-2).

Within this format, inspectors will be able to prepare inspection plans; retrieve information from the Master Inspection Planning System (MIPS2), the Text Retrieval System (TRS), NUDOCS, and the Inspection and Enforcement Manuals; store, classify, and retrieve inspection findings; convert inspection notes to readily organized inspection narratives; refer to references and examples; create, update, and close all types of open items; prepare cover letters and Notices of Violation; and automatically enter findings and conclusions, as appropriate, into report executive summaries and plant performance matrices. Supervisors and other users will also have access to AIRS for report review, approval, issuance, and distribution, as well as for basic information retrieval and analysis.

Status of the Project

Having completed all early milestones (including thorough reviews of existing NRC programs, extensive mapping of system requirements, creating and validating the AIRS data model, purchasing appropriate software tools, and configuring the development workstations and server), the AIRS creators are currently designing a navigational model and conceptual prototype of the inspection report system. These preliminary structures will serve as the basis for joint administrative design sessions (involving actual end-users), which will in turn lead to the final stages of development for the October 1996 working prototype.

Additional information on the AIRS project will be provided in future issues of this newsletter. For more information or comments on this topic, contact Mike Kaltman via e-mail (MXK2) or by calling (301)415-2905.

Vacancy Schedule for RIs and SRIs

To facilitate improved planning, this newsletter will periodically list anticipated RI and SRI vacancies. The list below shows RI/SRIs who will complete their scheduled rotations in 1996 and 1997. Note that projected vacancy dates change frequently as the result of promotions and reassignments. Inquiries about a particular site or position should be addressed to the applicable regional DRP personnel and the RI/SRI involved.

Plant	Position	Rotation (mo/yr)
Beaver Valley	RI	02/97
Beaver Valley	SRI	02/97
Browns Ferry	RI	03/97
Brunswick	RI	10/96
Byron	RI	03/96
D.C. Cook	RI	07/97
Ginna	RI	10/96
Haddam Neck	RI	02/97
Haddam Neck	SRI	07/97
Hatch	RI	10/97
Maine Yankee	RI	05/96
Millstone	SRI(U2)	08/97
Millstone	RI(U2)	04/97
North Anna	RI	10/96
Oconee	SRI	07/96
Peach Bottom	RI	06/97
River Bend	SRI	09/97
San Onofre	RI	11/96
Sequoyah	SRI	07/96
Surry	SRI	04/96
Vmt. Yankee	SRI	06/96
WNP-2	SRI	12/97

Availability of Headquarters Positions

Due to ongoing streamlining efforts throughout the agency, positions frequently open up in NRR and other headquarters offices. These positions are often filled by lateral transfers from existing personnel in other offices, without competition or posting. As a result, regional and resident personnel are sometimes unaware that such opportunities exist. Residents or regional personnel who are interested in a transfer to headquarters should feel free to contact the division(s) or branch(es) of their choice to inquire about upcoming openings.

About this Newsletter

This electronic newsletter is a way of communicating current inspection program issues and changes to the reactor inspection staff. The intent of this newsletter is to help inspectors understand current program direction, management expectations, inspection trends, and lessons learned. The newsletter will communicate changes to inspection program procedures and policies.

The NRR Inspection Program Branch (PIPB) will prepare the reactor inspection program newsletter on an as-needed basis. The newsletter will be distributed via e-mail to maximize the timeliness of communication and to allow fast and direct feedback from inspectors and managers. Send comments on the newsletter and recommendations for discussion or improvement to Laban L. Coblentz via e-mail (LLC1) or by calling (301) 415-2619. Proposed topics and articles may also be submitted.

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Reactor Inspection Program Newsletter

Issue 96-02 *December 1996*

About This Newsletter

This newsletter is a way of communica-ting current inspection program issues and changes to the reactor inspection staff. The intent of this newsletter is to help inspectors understand cur-rent program direction, management ex-pectations, inspection trends, program and policy changes, and lessons learned.

With this issue, the newsletter format has been changed to make it more read-able on-screen. In the future, we plan to make it available on-line via the NRR home page.

The NRR Inspection Program Branch (PIPB) prepares the newsletter on an as-needed basis. If you have comments or recommendations, please send them to Ronald Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986. Proposed topics and articles may also be sub-mitted.

Contents of this Newsletter

Proposed Revision to IP 71707

The NRR Inspection Program Branch (PIPB) is working on a revision to In-spection Procedure (IP) 71707, "Plant Operations," to be issued in early 1997. The proposed revision incorpor-ates a more performance-based approach with appropriate focus on safety and risk. The requirements are concise and less prescriptive, thus allowing in-spectors more judgement in adapting inspection focus to a particular licensee's performance. In addition, periodicities are better defined in relation to inspection and SALP periods, and verification of licensee compliance with the plant licensing and design basis is emphasized.

Regional offices have reviewed the draft revision, and the proposed changes have been presented to resi-dent inspectors at regional resident meetings. Several pilot inspections are being planned for the first quar-ter of 1997 before issuing the new revision for general use.

For more information on this topic, contact Maitri Banerjee via e-mail (MXB) or by calling (301) 415-1291.

Summary of Millstone Activities

Background

In October 1993, Northeast Utilities (NU) submitted a **licensee event report (LER)** for Millstone Unit 1 indicating that the unit had operated outside of its design basis during refueling out-ages. The LER discussed (1) how much of the reactor core the licensee moved from the vessel to the spent fuel pool during refueling, and (2) the assump-tions used in the Updated Final Safety Analysis Report (UFSAR) and in a pre-vious related license amendment.

From April 1994 to September 1995, the NRC followed this issue through the inspection program. By July 1995, NU had submitted a **license amendment re-quest** that would allow full core off-load as the normal refueling practice. A month later, the NRC received a **10 CFR 2.206 petition** asking that the li-cense amendment be denied. This peti-tion, the LER, and other information prompted an escalating series of re-views by the licensee and the NRC, some of which are still ongoing. The insights resulting from these reviews have implications, not only for NU fa-cilities, but also for the rest of the industry.

Timeline and Summary of Reviews

In December 1995, the NRC issued a **10 CFR 50.54(f) letter** to Millstone Unit 1 (similar letters were issued in March 1996 to Millstone Units 2 & 3 and to Haddam Neck). These letters no-ted that the licensee's fuel offload practices did not match licensing re-quirements, and that the licensee's internal reviews had found added prob-lems with configuration control and the licensing basis. The letters asked that the licensee determine the range of these problems, and explain what corrective action would be taken to ensure that future plant operation would be conducted in accordance with the operating license, NRC regulations, and the UFSAR.

In January 1996, based on **Senior Man-agement Meeting (SMM)** discussions, Millstone was placed on the NRC Watch List (note that Millstone had been a discussion plant at nine consecutive SMMs). In March 1996, ***Time Magazine*** ran a cover story on Millstone whis-tleblowers, mentioning the fuel off-load issue and critical of NRC's over-sight of the facility.

The **Special Inspection Team (SIT)** was formed under Marty Virgilio, NRR, in January 1996 to conduct an in-depth review of engineering and licensing activities at Millstone. The SIT char-ter focused primarily on how well Plant Engineering had been maintaining the licensing basis. As the SIT pro-gressed, its focus was expanded to include Haddam Neck.

The **Millstone Independent Review Group (MIRG)** was subsequently formed in March 1996. The MIRG focused on NU's handling of employee concerns and the appropriateness of NRC's mechanisms for managing allegations and protect-ing allegers from retaliation.

In addition to these teams, the NRC's Office of General Counsel (OGC), Office of Investigations (OI), and Office of Inspector General (OIG) have also investigated specific areas. The NRC also held numerous meetings with the licensee and the public, briefed congressional delegations and over-sight committees, appointed an SES manager for Millstone oversight, expanded the resident staff, and took the generic actions described below.

Generic Activities

Soon after initiating the various re-view teams, the NRC began examining the broader implications of Millstone findings, as follows:

1. Regional and resident inspectors were asked to place specific emphasis, in inspection and documentation, on whether the licensee's facility, in the areas reviewed, matched the cor-responding descriptions in the **UFSAR**. Several hundred discrepancies were identified in the early stages of this effort, although only about 12 of these discrepancies were found to be of significance.

2. An industry-wide **spent fuel pool licensing survey** was performed. Six-teen reactors (at nine sites) were found to have performed fuel offloads in some way inconsistent with their licensing bases.

3. Millstone insights were incorpora-ted into an ongoing **analysis of 10 CFR 50.59**. This analysis (also discussed in Newsletter 96-01) examined both NRC and licensee practices for 50.59 re-views. The analysis focused on better integration of information, incorpora-tion of risk perspectives, considera-tion of cumulative safety impact, and consistency in practice.

4. NRR Projects has been conducting a **study of internal licensing processes**. This study includes a review of the project manager handbook, guidance on processing TIAs, and commitment tracking practices.

5. NRR also formed the **Millstone Lessons Learned Task Group**, with participation from AEOD and Region III. This group examined the findings of the other review groups and investigations, to understand the implications of those findings on NRC programs and processes. The lessons learned focus was divided into four general areas: inspection, licensing, enforcement, and licensee reporting.

Results of the Reviews

While the SIT team found many discrep-ancies in the Millstone design basis and plant configuration control, none of the issues were individually con-sidered significant enough to mandate shutdown. At Haddam Neck, however, several operability concerns were identified by the team which resulted in plant shutdown in July 1996 (e.g., 2-phase flow or no-flow conditions in containment service water, which led to operability problems with the containment air recirculating fans). The licensee's concurrent reviews identified similar problems.

As an overall result of the technical issues identified, the NRC issued a Confirmatory Order in August 1996, es-tablishing an Independent Corrective Action Verification Program (ICAVP) for Millstone 1, 2, & 3. The order required the licensee to contract with a third party oversight group to audit and inspect the licensee's identifica-tion and correction of problem areas.

The NRC issued a second Confirmatory Order in October 1996 based on the MIRG team findings. This order re-quired NU to establish an independent third party for oversight of Millstone employee concerns practices.

In November 1996, the Special Projects Office (SPO) was established within NRR to consolidate the aforementioned efforts and to ensure consistent NRC oversight and inspection at Millstone and Haddam Neck. This office, headed by Bill Travers, consists of three branches: the NRR Projects (licensing) portion, the Region I DRP (inspection) portion, and a group to focus on ICAVP oversight.

In addition to these actions, the NRC is still deliberating on various rela-ted enforcement actions, additional generic recommendations, policy chan-ges, and lessons learned. NU has made significant management changes at Millstone, including a "recovery team" for each unit. Following the June 1996 SMM, Millstone was designated as a Category 3 Watch List plant, requiring Commission approval for restart. In January 1997, the SPO will begin briefing the Commission on overall restart efforts of the various NU units.

For more information on Millstone activities, contact Loren Plisco via e-mail (LRP) or by calling (301) 415-1231.

Recent Revisions to IP 40500 and 40501

IP 40500, "Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems," and IP 40501, "Licensee Self-Assessments Related to Team Inspection," were re-cently revised to correct problems identified during an Inspection Pro-gram Branch audit of IP 40500. The audit identified instances where IP 40500 did not accomplish a compre-hensive evaluation of the effective-ness of licensee controls and concerns with multiple usage of IP 40501 in lieu of certain core inspections within one SALP cycle.

NRC's evaluation of the licensee's ability to detect problems early and resolve them before they result in significant performance concerns forms the basis for important decisions, such as the future level of inspection resource allocation and whether to permit a licensee to conduct a self-assessment in other areas. IP 40500 provides the NRC's primary inspection in the area of licensee safety assess-ment and corrective action. As such, IP 40500 is intended to be conducted as a systematic and comprehensive in-spection that considers, in part, the results of other inspections performed over the previous 12-24 months.

This procedure should not be performed as a routine, piecemeal inspection.

For example, resident inspector followup of a licensee's corrective action in response to an equipment problem would be performed as a reactive inspection and alone does not meet the objectives of IP 40500. However, the results of this reactive inspection would be considered during the IP 40500 inspection that assesses the overall effectiveness of licensee controls.

IP 40500 will not be performed as a licensee self-assessment inspection due to the fundamental importance of the NRC's evaluation of licensee self-assessment and problem resolution capabilities.

In summary, IP 40500 was revised to clarify its objective as a systematic and comprehensive inspection that considers, in part, the results of other inspections performed over the previous 12-24 months. IP 40501 was revised to preclude IP 40500 from being performed as a licensee self-assessment in lieu of NRC inspection. This guidance was previously issued in a memorandum to regional administrat-ors in May 1996.

For more information on IP 40500 or 40501, contact Dave Allsopp via e-mail (DKA) or by calling (301) 415-3073.

Questions and Answers on the Revised IMC 0610

In February 1996, PIPB issued an ex-tensive revision to IMC 0610, "Inspec-tion Reports." Multiple training ses-sions were held in each region and in Headquarters. While some inspectors reported initial awkwardness in imple-menting certain IMC 0610 guidance, general response has been strongly positive. Certain questions continue to arise, however; what follows is several of the most common questions, with answers provided.

Q: I want to document this issue, but it doesn't seem to fit anywhere in the standardized reactor inspection report outline. What do I do?

A: Whenever this question arises, a corollary question should be asked: "If this were SALP or PPR time, where would I want this issue to be consid-ered?" Answering this question usually provides an indication of where the write-up best fits into the standard-ized outline.

For example, when the initial increase in FSAR inspections occurred, PIPB re-ceived frequent calls asking where to put the resulting findings. We asked the corollary question: "If this were SALP time, where would you want to consider the FSAR issues?" The answer, for most callers, was "under Engineer-ing." As a result, except when a spe-cific topic demands putting the issue elsewhere, most report writers place FSAR issues under "E2, Engineering Support of Facilities and Equipment."

On rare occasions, the answer may be "This is not a topic that we intend to consider during PPR or SALP" (e.g., data that is only being reported in response to an information-gathering temporary instruction). In such ca-ses, the write-up may simply be inclu-ded as a report enclosure.

Q: What is the proper format for the lists at the end of the report?

A: Some flexibility exists here; the intent of IMC 0610 is only to specify which lists should be used, and when. IMC 0610 does not attempt to specify (1) whether each list appears on a separate page or simply at the end of the report narrative; (2) whether the lists should be called out as attach-ments; or (3) whether the lists should be included in the Table of Contents. These questions are left to the dis-cretion of the writer or reviewer.

Q: Should the report narrative give tracking numbers for NCVs, and/or list NCVs in the open items list?

A: Again, IMC 0610 does not rule on this question. NCVs cannot normally be issued for a repetitive occurrence, so some sort of tracking would seem log-ical in order to meet this enforcement standard. Although not currently re-quired, the tracking of NCVs using the Inspection Followup System is believed to be good practice. In fact, IMC 0303, "Inspection Followup System," is currently being revised to incorporate this requirement. In the interim, be sure to follow your regional policy.

Additional questions or comments on IMC 0610 or related issues can be directed to Mike Johnson via e-mail (MRJ1) or by calling (301) 415-1241.

Keys on Implementing IMC 0620

Background

In July 1996, PIPB issued IMC 0620, "Inspection Documents and Records." This new guidance establishes NRC pol-icy for requesting, controlling, and dispositioning NRC inspection docu-ments and records during all phases of the inspection program. A primary con-sideration in developing IMC 0620 was the future retrievability of documents that support inspection findings. Among other issues, the guidance dis-tinguishes between those documents that are required to be made publicly available (or available via requests made under the Freedom of Information Act (FOIA)) and those that are not.

Keys for Implementation

While IMC 0620 should be read and un-derstood in its entirety, awareness of several key concepts will be especial-ly helpful to inspectors in day-to-day use. There are two fundamental ques-tions that need to be answered regard-ing record retention. First, was the information used to support an inspec-tion finding? If not, it is not neces-sary to retain this information. Second, can the information be readily retrieved from the licensee in the future? If so, it is again not neces-sary to retain this information. *Only that information necessary to support inspection findings that is not read-ily retrievable from the licensee needs to be retained by the inspector as an NRC record subject to placement in the Public Document Room (PDR).*

For example, an official licensee pro-cedure is considered a quality record, must therefore be retained by the li-censee, and should remain readily re-trievable. On the other hand, a "back-of-the-envelope" calculation performed by the licensee in response to inspec-tor questions may not be considered a quality record--and if not, must be placed in the PDR (either directly with a cover letter and a reference in the inspection report or as an attach-ment to the inspection report).

Another key concept is the distinction on when an inspector's notes become an official NRC record. In general, these notes are considered personal records as long as they are not distributed, shown, or quoted to other individuals (including other inspectors). In ad-dition, to prevent these notes from being considered agency records, they may not be mixed or stored with other NRC records. Similarly, electronic notes must be maintained in a separate subdirectory (or separate disk) in order to be considered personal rec-ords and not NRC records.

Further, any written correspondence from an inspector to the licensee, with limited exceptions, is an NRC record subject to placement in the PDR. All inspectors (and all agency technical staff) should also be aware that predecisional information of any kind, including draft inspection reports or portions thereof, may not be shown to or given to licensees or any other person external to the NRC be-fore formal issuance of the inspection report, without explicit permission from the EDO. This also applies to draft versions of reports prepared by the NRC's Office of Investigation.

In addition to these topics, IMC 0620 provides guidance on certain FOIA re-quirements, inspector requests for li-censee documents, handwritten notes from an inspector to a licensee, cau-tions on filling out licensee forms, and the use of audio or video record-ing equipment during an inspection.

For more information on IMC 0620, contact John Nakoski via e-mail (JAN1) or by calling (301) 415-1278.

Update on the Job Task Analysis for Regional DRPs

Background

In June 1996, PIPB began a Job Task and Functional Analysis (JTA) of Re-gional Divisions of Reactor Projects (DRPs). Led by Los Alamos National Laboratory (LANL), the JTA is inten-ded: (1) to systematically analyze each DRP technical position; (2) to discern the effects of management changes; (3) to compare region-to-region practices; (4) to enhance awareness of job conditions and re-quirements; (5) to understand training needs; (6) to identify any areas of inefficiency or inappropriate task or function distribution; and, (7) where possible, to propose improvements.

The first JTA task involved a meeting of subject matter experts (SMEs)--representatives from each region and each DRP position--to determine ex-haustively all the tasks and functions performed by individuals in those positions. LANL then converted these master task lists into surveys (one for each position). The surveys asked DRP personnel to rate--for each task--the time spent, frequency, importance, difficulty, and satisfaction (i.e., satisfaction that the task, as performed, meets its objective).

Based on the survey results, LANL com-piled a list of tasks that may require training. In October 1996, a second SME panel convened in Region III to validate this training list by identi-fying the knowledge, skills, and abil-ities (KSAs) needed to perform each task. As before, this SME panel inclu-ded representatives from each region (and NRR and TTC); however, division directors were not included in the training analysis.

Status and Current Focus

Current JTA tasks involve extensive statistical analysis: LANL has been reviewing the survey results to identify significant region-to-region differences, as well as statistical "gaps"-- areas in which, for example, DRP branch chiefs rated a task as be-ing very important or very difficult, but were dissatisfied with the way the task is being performed. This analysis was used to identify areas for further discussion, and provided the basis for the third set of SME meetings, held in Region I on December 17-18. The re-sults of that meeting are still being compiled and analyzed. PIPB intends to present and discuss these results at the upcoming DRP Division Director counterpart meeting.

In January 1997, LANL and NRR will tackle the next JTA task: activity-based observation. This will involve 1-day visits to 12 sites (3 per re-gion, with variation from single- to multi-unit sites and high to low SALP ratings). These visits will be used to further validate the survey results, as well as to gain additional insights into resident and senior resident inspector tasks and functions.

Finally, one more SME meeting will be held (likely in early February) before LANL compiles its final report. This last meeting will use the SME panel to translate the KSAs into training ob-jectives and select appropriate training methods (e.g., classroom, self-study, or on-the-job training).

Based on discussions with the former Director, NRR, the Chairman asked that a similar JTA be performed for the NRR Division of Reactor Projects. NRR is currently pursuing contract negotia-tions with LANL, with the intent to begin this second JTA in early 1997.

For more information on this topic, contact Mike Johnson via e-mail (MRJ1) or by calling (301) 415-1241.

PRA Applications Corner

This portion of the newsletter is de-voted to sharing inspection experience gained using Probabilistic Risk As-sessment (PRA) concepts and methods. It is intended to be an inspectors' forum for both positive and negative experiences with PRA. Inputs are wel-come, and should be submitted to Douglas Coe via e-mail (DHC) or by calling (301) 415-1244.

Case 1: Maintenance Rule Example

A licensee scheduled preventive main-tenance (PM) to calibrate a pressure transmitter that provided an MOV in-terlock function. The MOV allowed the "A" train RHR pump discharge flow to be aligned to the "A" HPSI pump suc-tion for "piggyback" operation in the recirculation mode following a LOCA. Both "A" train RHR and SI systems were declared inoperable (72-hour LCO). The licensee used this opportunity to ex-pand the work scope and accomplish ad-ditional PMs, including pump breaker PMs that simultaneously removed power from both the RHR and HPSI pumps. A licensee-developed risk matrix had identified this configuration (removal of RHR *and* HPSI pumps) to be risk-significant; however, this matrix was not used when scheduling these PMs. Although both pumps were initially declared inoperable, the risk increase would have been smaller had the breakers not been disabled.

The Maintenance Rule (10 CFR 50.65) expects licensees to assess the impact on safety functions when removing plant equipment from service for monitoring or PMs. *Neither the Rule nor related NRC staff guidance impose any specific risk threshold or crite-ria for determining when an equipment configuration creates unacceptable risk*. The licensee must demonstrate a rational approach to making this as-sessment and take appropriate action. To perform this assessment, licensees may develop a risk matrix that identi-fies risk-significant equipment con-figurations. When such configurations are identified, the licensee may rese-quence PM activities or take compensa-tory measures to mitigate the risk.

Some licensees may follow the EPRI PSA Application Guide (EPRI TR-105396) criteria of 10^{-6} change in core damage probability (ΔCDP). ΔCDP is the change in core damage frequency (CDF) multi-plied by the equipment out-of-service (OOS) time:

$$\Delta CDP = (\Delta CDF) \times (OOS\ time)$$

For example, if the equipment OOS CDF is $4x10^{-4}$/yr for an OOS time of 3 days, and the baseline CDF is $1x10^{-4}$/yr, then ΔCDP would be about $2x10^{-6}$ and would exceed the EPRI criteria. The EPRI Guide recommends that, in addition to ΔCDP, the impact on containment fail-ure probability also be assessed. This is done using the change in large early release probability (ΔLERP) in place of ΔCDP, with a suggested

ΔLERP threshold of 10^{-7}. LERP is particularly important when containment equipment (e.g., containment spray) is affected, since CDP does not account for con-tainment performance. Finally, the EPRI Guide cautions that, with proper planning and control, total CDF should not exceed 10^{-3}/yr regardless of CDP.

Although the staff has not endorsed the above EPRI Guide, a significant effort is being made to produce a standard review plan and regulatory guide to define the quality needed for PRA results to be used in regulatory decision-making. In the meantime, in-spectors should become familiar with methods (such as that given above) now in use by licensees.

--contributed by Marc Dapas (e-mail MLD1, phone (708) 829-9628) and Doug Coe.

Case 2: Failure Probability of SRVs During Repeated Cycling

This example demonstrates how an in-spector might gain insight from a sim-ple application of the binomial theo-rem.

A BWR scrams from 100% power due to closure of all MSIVs. The licensee maintains reactor pressure by manual operation of safety relief valves (SRVs) for 36 hours while making re-pairs. The licensee does not operate RCIC (turbine-driven reactor core iso-lation cooling pump) and does not pro-ceed to shutdown cooling (RHR) mode. As reactor pressure increases to the top of an administrative control band, operators select one SRV and open it, allowing reactor pressure to relieve to the suppression pool until it is lowered to the bottom of the control band. SRVs are selected sequentially to distribute heat load within the suppression pool. A total of 85 SRV operations are required over the 36 hours, with approximately 4 operations per SRV. What is the total probability that an SRV will stick open?

The licensee's IPE analysis used an SRV generic failure (stick open) prob-ability of 1.6×10^{-2} per demand, based on NUREG 1150 data. Assuming that the probability of failure for any given SRV operation is not influenced by any previous SRV operation (independent demands), the correct calculation of probabilities is:

no failures
in 1 demand $= 1 - 1.6 \times 10^{-2}$

no failures
in 85 demands $= (1 - 1.6 \times 10^{-2})^{85}$

1 or more failures
in 85 demands $= 1 - (1 - 1.6 \times 10^{-2})^{85}$

$= 0.75$

The sensitivity of this result can be seen by reducing the probability of failure by a factor of 4. The total probability of failure then becomes about 0.3. *The specific numerical re-sult here is not as important as the ideas that repeated demands, even for seemingly low failure probabilities per demand, can result in a signifi-cant total probability of failure.* Note that this simple reasoning says nothing about such things as the se-verity of the consequence of failure or accuracy of the assumption of inde-pendence. Thus, techniques such as this should be used as part of a more integrated approach to assessment of inspector observations.

This is a special case of the binomial theorem, which states that the proba-bility of "x" failures in "n" demands, given an independent failure probabil-ity "p," is equal to:

$$\frac{n!}{x!\,(n-x)!}\,(p)^{x}\,(1-p)^{n-x}$$

where $x = 0$, $n = 85$, and $p = 1.6 \times 10^{-2}$. Inspectors may find techniques such as this useful as an input to help estab-lish risk significance.

--contributed by Mel Leach (e-mail MNL, phone (708) 829=9705).

Licensee Technical Specification (TS) Interpretations

On August 23, 1996, the Director of NRR's Division of Inspection and Sup-port Programs (DISP) issued a memo to regional administrators regarding TS interpretations that licensees make without consent or review by the NRC. The memo clarified several concepts of which all inspectors should be aware: (1) the NRC does not endorse or rec-ognize licensee TS interpretations; (2) such interpretation must never contradict or change the meaning or intent of a TS requirement; (3) in-spection staff should never concur or become involved in the approval pro-cess for such interpretations; and (4) licensee TS interpretations should not include indications of NRC approval.

When the licensee desires clarifica-tion of a TS, the preferred methods of doing so include: (1) submitting a li-cense amendment to change the TS word-ing; (2) changing the TS bases via 10 CFR 50.59 or 50.90; or (3) requesting a written interpretation from NRR re-garding the TS intent. When an inspec-tor desires such clarification (e.g., to determine whether a licensee prac-tice is in compliance with the TS), it should be obtained through the Task Interface Agreement (TIA) process.

For more information on this topic, contact Robert Haag via e-mail (RCH) or by calling (301) 415-1245.

Senior Resident Inspector Counterpart Meeting

The next national Senior Resident Inspector counterpart meeting has been scheduled for April 29,30 and May 1, 1997. Future correspondence regarding a request for discussion topics, hotel accommodations, and meeting agenda will be provided to the regions and the SRIs.

Rotation Schedule for RIs and SRIs

To facilitate improved planning, this newsletter will periodically list an-ticipated RI and SRI vacancies. The attached table gives a complete list-ing of plants, current RIs and SRIs, and their projected rotation comple-tion dates. Note that the assignments and projected completion dates change frequently as a result of promotions and reassignments. Inquiries about a particular site or position should be addressed to the applicable regional DRP personnel and the RI/SRI involved.

Please submit any revisions to the attached rotation schedule to Robert Haag via e-mail (RCH) or by calling (301) 415-1245.

RESIDENT ROTATION DATES

PLANT	NAME			ROTATION MONTH/YEAR	
ANO 1 & 2	BURTON	STEVE		11	2001
ANO 1 & 2	KENNEDY	KRISS	(SRI)	1	2000
ANO 1 & 2	MELFI	JIM		11	1998
BABCOCK & WILCOX	HUGHEY	C.	(SRI)	2	2001
BEAVER VALLEY	LYON	CARL		3	2001
BEAVER VALLEY	DENTEL	GLENN		9	2001
BEAVER VALLEY	KERN	DAVE	(SRI)	9	2001
BIG ROCK POINT	BROWN	C. E.		9	1998
BIG ROCK POINT	LEEMON	R.	(SRI)	3	1998
BRAIDWOOD	ADAMS	JOHN		9	2001
BRAIDWOOD	PHILLIPS	C.	(SRI)	1	2001
BRAIDWOOD	RICH	DANIEL		10	2001
BROWNS FERRY	STAREFOS	JOELLE		9	2001
BROWNS FERRY	MORGAN	MIKE		4	2000
BROWNS FERRY	WERT	L.	(SRI)	6	1999
BRUNSWICK	PATTERSON	C.	(SRI)	7	1999
BRUNSWICK	JANUS	M.		7	1998
BRUNSWICK					
BYRON	HILTON	N.		7	2000
BYRON	BURGESS	S.	(SRI)	8	2001
CALLAWAY	BRUSH	F.		5	2000
CALLAWAY	PASSEHL	D.	(SRI)	11	2000
CALVERT CLIFFS	STEWARD	S.	(SRI)	12	2000
CALVERT CLIFFS	LATHROP	KIRKE		5	1998
CALVERT CLIFFS	BOWER	FRED		6	2001

CATAWBA	FREUDENBERGER	R.	(SRI)	6	1998
CATAWBA	BALMAIN	P.		9	1999
CATAWBA	FRANOVICH	R		7	2000
CLINTON	MILLER	M.	(SRI)	3	1997
CLINTON	STOEDTER	K.		3	2000
COMANCHE PEAK	ORDAZ	VONNA		8	1999
COMANCHE PEAK	FREEMAN	HARRY		3	2000
COMANCHE PEAK	GODY	TONY	(SRI)	9	1999
COOPER	MILLER	MARY	(SRI)	3	2000
COOPER	SKINNER	CHRIS		8	2000
CRYSTAL RIVER	COOPER	T.		10	1998
CRYSTAL RIVER	CAHILL	STEVE	(SRI)		2001
D.C. COOK	FULLER	B.		8	2001
D.C. COOK	BARLETT	B.	(SRI)	8	2000
D.C. COOK	MAYNEN	JOE		12	2001
DAVIS-BESSE	STASEK	STANLEY		10	1997
DAVIS-BESSE	ZELLERS	KEVIN		3	2000
DIABLO CANYON	BOYNTON	SCOTT		7	2000
DIABLO CANYON	TSCHILTZ	MIKE	(SRI)	7	1998
DRESDEN	ROTH	DAVID		1	2001
DRESDEN	HANSEN	J.		10	2000
DRESDEN	VANDERNIET	C.	(SRI)	10	2000

RESIDENT ROTATION DATES

PLANT	NAME			ROTATION MONTH/YEAR	
DUANE ARNOLD	RIEMER	KEN	(SRI)	6	2000
DUANE ARNOLD	LIPA	C.		5	1999
FARLEY	CALDWELL	BOB		10	2001
FARLEY	ROSS	T.	(SRI)	10	1998
FARLEY	BARTLEY	JONATHAN		3	2001
FERMI	O'KEEFE	N.		7	2000
FERMI	HARRIS	GARRY	(SRI)	2	2002
FITZPATRICK	FERNANDEZ	RICK		8	1999
FITZPATRICK	HUNEGS	GORDON	(SRI)	6	2000
FORT CALHOUN	WALKER	WAYNE	(SRI)	6	2000
FORT CALHOUN	GADDY	VINCENT		7	2000
GINNA	DRYSDALE	PETER	(SRI)	8	2000
GINNA	OSTERHOLTZ	CLYDE			
GRAND GULF	WEAVER	K.		2	2000
GRAND GULF	TEDROW	J.	(SRI)	9	1999
HADDAM NECK	HABIGHORST	PETER		2	1997
HADDAM NECK	RAYMOND	WILLIAM	(SRI)	7	1997
HARRIS	BRADY	JOE	(SRI)	3	2001
HARRIS	ROBERTS	D.		2	1998
HATCH	CANADY	J.		9	1999
HATCH	HOLBROOK	B.	(SRI)	6	1999
HATCH	CHRISTNOT	E.		10	1997

HOPE CREEK	SUMMERS	ROBERT	(SRI)	8	1999
HOPE CREEK	MORRIS	SCOTT		8	1999
INDIAN POINT 2	WESTREICH	BARRY		2	1999
INDIAN POINT 2	TEMPS	ROBERT	(SRI)	5	2000
INDIAN POINT 3	FRYE	TIMOTHY		2	1999
INDIAN POINT 3	LEW	DAVID	(SRI)	11	1999
INDIAN POINT 3	RASMUSSEN	RICK		12	1998
KEWAUNEE	GADZALA	J.		7	1999
KEWAUNEE	HELLER	J.	(SRI)	5	1998
LA SALLE	HUBER	MARC	(SRI)	8	2001
LA SALLE	SIMONS	HEATHER		1	1997
LA SALLE	IHNEN	K.		3	1999
LIMERICK	PERRY	NEIL	(SRI)	3	1998
LIMERICK	BONNETT	PAUL		8	2001
MAINE YANKEE	YEROKUN	JIMI	(SRI)	8	1998
MAINE YANKEE	OLSEN	BILL		5	1996
MCGUIRE					
MCGUIRE	SHAEFFER	SCOTT	(SRI)	6	2001
MCGUIRE	SYKES	M.		5	1999
MILLSTONE	EASLICK	T.	(SRI U1)	5	2001
MILLSTONE			(SRI U2)		
MILLSTONE	CERNE	TONY	(SRI U3)	2	2001
MILLSTONE	BURRITT	ART		8	1999

RESIDENT ROTATION DATES

PLANT	NAME			ROTATION MONTH/YEAR
MILLSTONE	BEAULIEU	DAVID		7 1999
MILLSTONE	ARRIGHI	RUSS		4 1997
MONTICELLO	STONE	A.	(SRI)	11 2000
MONTICELLO	LARA	J.		1 2001
NINE MILE POINT	BELTZ	TERRY		6 2001
NINE MILE POINT	NORRIS	BARRY	(SRI)	9 1998
NINE MILE POINT	SKOKOWSKI	RICHARD		8 2000
NORTH ANNA	GIBBS	RUSSEL		9 2001
NORTH ANNA	MCWHORTER	R.	(SRI)	10 1998
OCONEE	HUMPHREY	G.		11 1998
OCONEE	SALGADO	N.		10 2000
OCONEE	SCOTT	MIKE	(SRI)	7 2001
OCONEE	BILLINGS	DANNY		10 2001
OYSTER CREEK	PINDALE	STEVE		5 1998
OYSTER CREEK	BRIGGS	LARRY	(SRI)	10 1998
PADUCAH DIFFUSION	O'BRIEN	K.	(SRI)	5 1999
PADUCAH DIFFUSION				
PALISADES	PARKER	M.	(SRI)	7 1998
PALISADES	PRESCOTT	P.		9 2000
PALO VERDE	CARTER	DANIEL		4 2001
PALO VERDE	KRAMER	JOHN		11 1998
PALO VERDE	JOHNSTON	KEN	(SRI)	12 1998
PALO VERDE	GARCIA	DENISE		5 2000
PEACH BOTTOM	BUCKLEY	MICHAEL		

1998	PEACH BOTTOM	LORSON	RAY		5
1998	PEACH BOTTOM	SCHMIDT	WAYNE	(SRI)	9
1998	PERRY	KOSLOFF	D.	(SRI)	3
1999	PERRY	TWIGG	R.		6
2000	PILGRIM	LAURA	RICH	(SRI)	4
2000	PILGRIM	KORONA	BETH		8
1999	POINT BEACH	MCMURTRAY	T.	(SRI)	2
2001	POINT BEACH	KELLER	CHARLES		9
	PORTSMOUTH				
1999	PORTSMOUTH	COX	C.	(SRI)	5
1998	PRAIRIE ISLAND	BYWATER	R.		5
2000	PRAIRIE ISLAND	RAY	S.	(SRI)	11
2001	QUAD CITIES	COLLINS	L.		1
1998	QUAD CITIES	WALTON	K.		9
1999	QUAD CITIES	MILLER	C.	(SRI)	2
1997	RIVER BEND	SMITH	WARD	(SRI)	9
2000	RIVER BEND	PROULX	DAVE		9
2001	ROBINSON	DESAI	BINOY	(SRI)	
2000	ROBINSON	ZELIER	JOHN		9
1998	SALEM	MARSCHALL	C.	(SRI)	9

RESIDENT ROTATION DATES

PLANT	NAME			ROTATION MONTH/YEAR
SALEM	FISH	TODD		4 1998
SALEM	SCHOPPY	JOE		3 1998
SAN ONOFRE	SLOAN	JIM	(SRI)	12 1998
SAN ONOFRE	SOLORIO	DAVID		11 1996
SAN ONOFRE	RUSSELL	JOHN		4 1998
SEABROOK	MACDONALD	JOHN	(SRI)	4 2000
SEABROOK	MANNAI	DAVID		4 2000
SEQUOYAH	SHANNON	MEL	(SRI)	7 2001
SEQUOYAH	SEYMOUR	D.		9 2000
SEQUOYAH	STARKEY	D.		6 1999
SOUTH TEXAS	SIFRE	WAYNE		5 2000
SOUTH TEXAS	LOVELESS	DAVID	(SRI)	7 1998
SOUTH TEXAS	KEETON	JACK		6 1998
ST LUCIE	LANYI	DAVID		9 2001
ST. LUCIE	MUNDAY	JOEL		6 2001
ST. LUCIE	MILLER	M.	(SRI)	9 1998
SUMMER	BONSER	BRIAN	(SRI)	8 2000
SUMMER	FARNHOLTZ	T.		9 1998
SURRY	BYRON	PAUL		9 2001
SURRY	POERTNER	K.		7 2000
SURRY	MUSSER	RANDY	(SRI)	8 2001

SUSQUEHANNA	MCDERMOTT	BRIAN	4	2000
SUSQUEHANNA	JENISON	KEN (SRI)	7	2001
THREE MILE ISLAND	HANSELL	SAM	6	1999
THREE MILE ISLAND	EVANS	MICHELLE (SRI)	5	1998
TURKEY POINT	REYES	ROGAR		2001
TURKEY POINT	JOHNSON	TOM (SRI)	9	1998
VERMONT YANKEE	COOK	WILLIAM (SRI)	6	1996
VERMONT YANKEE	KNUTSON	ED	6	2001
VOGTLE	OGLE	C. (SRI)	7	2000
VOGTLE	O'DONOHUE	KATHLEEN	8	2001
VOGTLE	WIDMANN	M.	6	1999
WATERFORD	PRUETT	TROY	8	1999
WATERFORD	KELLER	L. (SRI)	2	2001
WATTS BAR	VANDOORN	K. (SRI)	8	1998
WATTS BAR				
WNP-2	REPLOGLE	G.	1	2001
WNP-2	BARR	ROB (SRI)	12	1997
WOLF CREEK	RINGWALD	FRED (SRI)	9	1998
WOLF CREEK	DIXON-HERRITY	JENNIFER	9	1999
ZION	VEGEL	ANTON (SRI)	1	2002
ZION	CALHOUN	DESIREE	1	2000
ZION	COBEY	E.	9	2001

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Reactor Inspection Program Newsletter

Issue 97-01 *Spring 1997*

The Reactor Inspection Program News-letter provides a forum to communicate current inspection program issues and activities to the reactor inspection staff. The intent is to ensure that inspectors are aware of current program direction, management expectations, inspection trends, program and policy changes, and lessons learned.

Another important objective of this newsletter is to share useful inspec-tion information between offices, regions, and inspectors to promote efficient and consistent inspection activities. Inspectors and management are encouraged to submit proposed topics of interest they'd like to know more about, and/or proposed articles summarizing recent experiences, for publication in this newsletter.

The newsletter is now available to all NRC employees through the R:\NEWSLTTR directory. In the future, we also plan to make the newsletters available on-line via the NRR home page.

The NRR Inspection Program Branch (PIPB) prepares the newsletter on an as-needed basis. If you have comments, recommendations, or proposed topics or articles, please send them to Ronald Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Contents of this Newsletter

National SRI Counterpart Meeting Postponed

The National Senior Resident Inspector (SRI) Counterpart Meeting, originally scheduled from April 29 through May 1, has been postponed. The workload of the resident inspector staff has been increased to meet the demands of many agency initiatives which require their support and involvement. In light of these workload considerations, NRR has postponed the SRI Counterpart Meeting and plans to reschedule the meeting for the spring or summer of 1998.

An important goal of the National SRI Counterpart Meeting is to provide SRIs with an opportunity to discuss challenges and provide feedback to the program office. The SRIs will be given the opportunity to provide feed-back in response to an upcoming letter from the Deputy EDO. NRR will also provide the forum to discuss current resident inspector issues and solicit feedback in the regional resident inspector counterpart meetings.

Maintenance Rule Inspections

Background

The maintenance rule, 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was issued on July 10, 1991, to be effective on July 10, 1996. The text of the rule is brief, containing the basic requirements for the activities that licensees need to accomplish to monitor maintenance effectiveness. This approach affords flexibility to licensees in implementing this performance-based rule.

Implementation guidance was developed by the Nuclear Energy Institute (NEI, aka NUMARC), resulting in NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." The staff en-dorsed this guideline in Regulatory Guide (RG) 1.160. The use of NUMARC 93-01 with RG 1.160 is one acceptable method for implementing the rule, although alternate methods may also be acceptable.

Inspection procedure (IP) 62706 was developed to verify maintenance rule implementation through the baseline inspection process. This inspection approach provides both a "horizontal" look at the licensee's maintenance rule program and a "vertical" slice of selected systems, structures, and components to verify implementation.

A typical inspection team consists of a team leader, three regional inspec-tors, a PRA specialist, and an NRR staff support member (SSM). The SSM's function is to help ensure consistency in inspection approaches between re-gions and licensees. To further en-sure consistency, two enforcement guidance memorandums were issued. EGM 96-001 established a Maintenance Rule Enforcement Review Panel to review enforcement issues that are disclosed during the performance of maintenance rule inspections. EGM 96-002 was is-sued to provide guidance and examples to facilitate consistent categoriza-tion of severity levels of violations.

In addition, IP 62707 was developed to incorporate the requirements of the maintenance rule and provide an on-going performance-based review of maintenance activities. Effective July 10, 1996, IP 62707 replaced IP 62703 as the core maintenance inspec-tion procedure.

Inspection Findings and Lessons Learned

As of early March 1997, 20 maintenance rule baseline inspections (MRBIs) have been completed, approximately five in each region. In addition, 3 limited-scope reactive inspections have been conducted based on specific requests.

In general, licensees' implementation of the maintenance rule has been adequate. All licensees to date have implemented the rule using RG 1.160 and NUMARC 93-01 guidance, however, each licensee has developed a unique site-specific program. Although licensees have had five years to imple-ment the rule, some licensees have waited until the last year to aggres-sively pursue implementation, often resulting in program or implementation weaknesses.

Two common issues have been identified at most sites concerning licensees' failure to demonstrate that the goals and/or performance criteria were established commensurate with safety: **(1)** licensees using a standard cri-teria for reliability (e.g., func-tional failures per unit time) without considering demands or demonstrating that the criteria preserved the as-sumptions used in the PRA; and **(2)** licensees failing to establish both a reliability and availability criteria for safety significant systems or failing to establish adequate criteria to ensure balancing of reliability and unavailability.

Several scoping issues have also been identified, including: **(1)** failure to include a cooling tower system within scope even though the system's failure resulted in a reactor scram on one occasion and a near scram on another, and **(2)** failure to include communica-tions and emergency lighting (used in EOPs and relied on to mitigate acci-dents) within the scope.

Other findings have included: weak 50.65 (a)(3) safety assessments, failure to identify maintenance pre-ventable functional failures, failure to perform adequate cause determina-tions, failure to set adequate goals for (a)(1) SSCs, weak structural mon-itoring programs, and procedural non-compliances.

Enforcement has been completed and the inspection reports issued for 11 base-line inspections. All but two of the inspections have resulted in enforce-ment actions associated with rule im-plementation. One licensee received a Severity Level III violation (with no civil penalty), and the eight other licensees received one or multiple Severity Level IV violations.

Regulatory Guide 1.160 has been re-vised to clarify the NUMARC 93-01 guidance to reflect the staff's posi-tion on certain issues and to incor-porate lessons learned from the ini-tial baseline inspections. Clarifica-tion topics included scoping issues, adequacy of reliability criteria, structural monitoring, manual versus unplanned automatic scrams, the defi-nition of "maintenance," and others.

In early March 1997, the staff issued a Commission paper, SECY-97-055, describing the status, results, and les-sons learned from the maintenance rule inspections. A Commission meeting was held on March 10, 1997, at which time the SECY (with Revision 2 to RG 1.160 attached) was made publicly available.

Licensee reactions to the rule and in-spection of the rule have been mixed. Most licensees have indicated that the NRC is being consistent in the inspec-tion and enforcement of the mainten-ance rule, while others have either contested or stated that they would contest identified violations.

Future Activities

The staff's goal is to complete a baseline inspection of each licensee's maintenance rule program implementa-tion by July 10, 1998. To meet this goal, MRBIs are scheduled to be com-pleted at a rate of approximately one per month per region.

The staff is developing an information notice to communicate the results and lessons learned from the initial base-line inspections. The staff is also developing a home page to provide a comprehensive resource of maintenance rule-related documents in a searchable format. The intent is to make this home page publicly accessible on the world wide web.

The staff plans to revise IP 62706 and the associated enforcement guidance to reflect lessons learned. In addition, the training responsibilities for the maintenance rule will be transferred from the program office (NRR/HQMB) to the Technical Training Division for continuing training programs.

For more information on maintenance rule-related issues, contact Richard Correia via e-mail (RPC) or by calling (301) 415-1009.

Status of Design (Architectural Engineering) Inspections

Background

NRC recently contracted with Stone & Webster and Sargent & Lundy to provide two pressurized water reactor (PWR) teams and one boiling water reactor (BWR) team with architect-engineer design expertise for performing design inspections. The purpose of these inspections is to determine if the plants meet their original design and licensing bases.

Each team consists of a team leader from NRR and five contractor design experts. The design inspections are performed in accordance with appli-cable portions of IP 93801, "Safety System Functional Inspection".

The inspection cycle includes 3 weeks in-office preparation, 4 weeks on-site, and 2 weeks of documentation. The inspection involves a vertical slice review of two safety systems selected based on PRA and other consi-derations. The teams review the FSAR, design basis documents, drawings, calculations, modification packages, surveil-lance procedures, and other design documents.

Findings to Date

As of March 27, six design inspections (St. Lucie, WNP2, TMI, ANO-1, Farley, and Perry) have been completed. Sample systems reviewed include makeup and purification, decay heat removal, AFW, CCW, automatic depressurization, RHR, and standby service water.

The inspection teams have identified findings that involved operational concerns, including: **(1)** inadequate analysis for switchover of ECCS pumps suction from the borated water storage tank to the reactor building sump under post-accident conditions; **(2)** lack of operating procedures and cir-cuit breaker testing for transfer of DC control power to the turbine-driven AFW pump; and **(3)** a design modifica-tion error whereby the automatic de-pres-surization system valves would not manually operate as a group.

In addition, the inspection teams identified design control weaknesses for calculations including missing calculations, non-conservative or in-correct assumptions, incorrect inputs, and inconsistency with test acceptance criteria. There were also a number of inconsistencies between FSARs and the plant's actual configuration.

Future Activities

Three additional design inspec-tions (Vermont Yankee, HB Robinson, and Davis-Besse) will start in April and May. Each team is expected to perform four inspections annually, so the three teams will perform a total of 24 inspections over the current two-year contract period, and potentially 48 if the staff exercises its option to ex-tend the contracts for up to two addi-tional years.

Regions select plants based on factors such as SALP ratings, plant age, in-spection findings, and design document reconstitution status. Insights may also be provided after reviewing the licensees' responses to the 10 CFR 50.54(f) letter concerning adequacy and availability of design bases information.

The staff will continue to review the inspection findings to identify potential generic issues and will issue appropriate generic communications to address those issues.

For more information on this topic, contact Donald Norkin via e-mail (DPN) or by calling (301) 415-2954.

New Fire Protection Functional Inspection Program

Background

In August 1992, the staff informed the Commission that it would develop and implement a program to inspect licensee's Thermo-Lag corrective action programs. However, based on the wide range of Thermo-Lag corrective actions proposed by the licensees, the staff concluded that an inspection of broader scope than that proposed in the Thermo-Lag Action Plan was needed.

In 1995, the staff informed the Commission that it was considering initiating a fire protection functional inspection (FPFI) program, which would cover all aspects of nuclear power plant fire safety and provide for more efficient, comprehensive and effective inspections. The benefits were expected to be **(1)** focusing NRC fire protection and support staff resources on the fire protection issues of most importance (such as licensee control of the fire protection design and licensing basis), **(2)** providing clear guidance to the staff and the nuclear industry regarding NRC oversight of licensee reactor fire protection programs, **(3)** improving the consistency of internal NRC oversight of the program, and **(4)** providing an immediate safety benefit arising from renewed industry attention to nuclear power plant fire safety.

Description of FPFI Program

The Fire Protection Functional Inspection Program will consist of four to eight headquarters-based announced inspections per year, with four pilot inspections (one in each region) from April, 1997 through the first quarter of 1998. The pilot plants are River Bend (June, 1997), Clinton (August/ September, 1997), Susquehanna (Octo-ber/ November, 1997), and St. Lucie (first quarter, 1998). A typical FPFI team will consist of a team leader and four inspectors. The team leader will be a senior fire protection engineer or equivalent. The team will consist of a fire protection engineer, an electrical engi-neer, a plant systems engineer, and a regional inspector. A PRA specialist will help with inspection preparation by developing plant-specific risk-informed information for the team to help focus the FPFIs on those areas most important to safety.

Each FPFI will involve 2 to 3 weeks of preparation effort, 2 weeks on-site, and about 2 weeks of documentation. The principal focus of the inspections will be on the plant fire protection and post-fire safe shutdown design and licensing bases and those fire protec-tion program elements that are covered by existing NRC regulations and guidelines. Examples include safe shutdown performance objectives, safe shutdown systems and equipment, fire protection systems and barriers, emergency lighting,

reactor coolant pump oil collection systems, quality control and quality assurance, configuration control and management, administrative controls and procedures, and training.
The pilot inspections will, in addi-tion, include a review of fire safety considerations that are not expressly addressed by the fire protection regulation, but by other regulatory programs, including Generic Letter 88-20, Supplement 4, "Individual Plant Exam-inations of External Events (IPEEE) for Severe Accident Vulnerabilities, 10 CFR 50.54(f)," dated June 28, 1991. Such inspection areas include, for example, event initiated fires, fire induced reactor transients, and potential seismic fire interactions.

The FPFI program will provide useful information regarding broader aspects of nuclear power plant fire safety. The staff will use this information to identify the strengths and weaknesses of the overall NRC reactor fire protection program and to develop and support recommendations for program improvement, as necessary.

The final FPFI procedure will be "modular" in that sections of the procedure that address discrete inspection topics could be conducted by individual inspectors independent of a full-scale team inspection. Licensee self-assessments could also be an important element of the permanent FPFI program.
After the four pilot inspections, the staff will assess the lessons learned and modify the draft FPFI procedure and guidance as needed. This revised draft FPFI procedure will be issued approximately 4 months after the staff completes the final pilot inspection.
The staff will then conduct a public workshop to present the results of the pilot program and seek public and in-dustry input. The FPFI procedure and guidance will then be finalized, the need to train additional FPFI inspect-ors will be evaluated, and the exist-ing fire protection inspection procedures will be revised as necessary.

For more information on the FPFI Program, contact Leon Whitney via e-mail (LEW1) or by calling (301) 415-3081.

Revised IMC 1245 Inspector Qualifications

The latest revision of IMC 1245, along with its Appendix A, was issued in December 1996 for implementation. The manual chapter describes the current policy and requirements for NRC staff to become qualified inspectors to implement the inspection program for operating, non-operating, and non-power reactors. Appendix A, "Training Requirements For Inspector Classifica-tions," lists 13 distinct classifica-tions along with their associ-ated training requirements.

One of the major changes to the IMC was the establishment of "generic" inspector classi-fications. No dis-tinction is now made between whether the person qualifying for an inspector classification is located in the region, onsite, or in headquarters.

Another major change involved the addition of three new inspector classifications, these are: **(1)** Reactor Technical Specialist/Team Member, **(2)** Reactor Emergency Preparedness or Health Physics Specialist/Team Member, and **(3)** Reactor Decommissioning Inspector. The first two new classi-fications address the individual who is not a full-time inspector, but performs inspections as required (on a part-time basis). Personnel qualify-ing under these two classifications could be technical specialists and/or project managers. The third new clas-sification is for personnel performing inspections at power reactors that will no longer operate, from permanent shutdown through transfer to NMSS.

Appendix B to IMC 1245, the qualifi-cation journals, has been drafted by TTD and will be issued for formal comment in March 1997. No major revisions have been made to the qualifica-tion journals. New qualification journals for the three new inspector classifications have been added, with minor updating for the remainder of the qualification journals.

It is the goal of NRR, with these new changes to IMC 1245 and its appendices, to ensure that all personnel who perform inspections are qualified un-der an inspector classification.

For more information on IMC 1245, contact Gerald Klingler via e-mail (GRK1) or by calling (301) 415-3077.

Millstone Lessons Learned

Background

In November 1995, the Chairman asked the staff to prepare a report on the lessons that could be learned from the situation arising from Millstone's refueling practices. Specifically, she asked the staff to *"explore whether existing oversight processes need improvement or new processes need to be developed which would have produced earlier NRC recognition of and action on Millstone Unit 1 noncompliance with its FSAR."*

The staff undertook the review in two parts. In Part 1, the staff reviewed the results from other NRC reviews, inspections, and investigations. It made recommendations to improve several agency oversight processes: licensing, inspection, enforcement, licensee reporting, management oversight of NRC processes, and license renewal. The staff also raised several questions of policy related to licensing basis, de-sign bases, FSARs, and 10 CFR 50.59. "Millstone Lessons Learned Task Group Report Part 1: Review and Findings" was issued in September 1996 and is a publicly available document.

In February 1997, the staff sent to the Commission the "Millstone Lessons Learned Report Part 2: Policy Issues" and associated Commission paper, SECY-97-036. A Commission meeting was held on February 19, 1997, at which time both documents were made publicly available.

Lessons Learned, Part 2

For Part 2, agency senior managers re-viewed the recommendations and policy questions from Part 1 to make further recommendations for the Commission's consideration. The Part 2 report de-scribed the various NRC processes that relate to the NRC's regulation and oversight of nuclear power reactors and how those processes provide reasonable assurance for their safe operation. The discussion is based on re-views and analyses performed for promulgation of the license renewal rule, 10 CFR Part 54.

A short description of the problems identified by the agency at Millstone, Maine Yankee, and other plants followed the discussion of the agency processes. The problems were pre-sented from the perspective of the definition of *"current licensing basis"* in 10 CFR Part 54. The ad hoc categories for current licensing basis in the Part 54 definition are: rules and regulations, license and technical specifications, FSAR and required program plans, and other commitments. The report further delineated between com-mitments made in response to notices of violation and other commitments.

The report then presented a series of actions the agency can and has taken that address the problems identified in the report. The actions are discussed in three broad areas, which represent the areas of policy that the Commission needs to consider: licensing basis (the broadest area that encompasses the other two areas), design bases (which are defined in Part 50 and required to be in the FSAR), and FSARs (which represent a large part of the licensing basis). The actions were further categorized as short-term and long-term.

Short-Term Actions

The short-term actions were those that the agency can take, and in some cases has already taken, that do not require Commission approval. The actions are also forward looking. That is, they change the way we and licensees do business for future actions, but do not address the large volume of infor-mation already in docket files.

The short-term actions included: **(1)** having licensees specifically identify licensing basis commitments and design bases in future submittals, **(2)** track-ing and verifying commitments made as part of licensing actions, **(3)** contin-uing our design inspections and verif-ication of FSARs through inspection,
(4) clarifying how we expect licensees to implement the FSAR update rule (50.71(e)), and **(5)** continuing to implement the actions on the process im-provement plan developed by the As-sociate Director for Projects in NRR.

Long-Term Actions

The long-term actions are those that most directly relate to agency policy and generally deal with rulemaking; either changing existing rules or creating new requirements. The long-term actions also are the rearward looking actions that could impose new requirements on existing information in docket files and, therefore, would have the largest effects on licensees.
These actions include: **(1)** reconsidering a definition in Part 50 for "current licensing basis" and whether li-censees or the NRC should compile it, **(2)** reconsidering establishing regulatory controls for com-mitments not now controlled by regulations, **(3)** reconsidering new requirements from the policy statement on the adequacy and availability of design bases, **(4)** re-quiring licensees to identify design bases not within their FSARs and incorporate them into the FSARs, and **(5)** revising Regulatory Guide 1.70 (standard format and content of FSARs) to include FSAR updates.

In the paper, the staff advised the Commission that the long-term actions may not meet the regulatory thresholds established in 10 CFR 50.109 for back-fitting requirements. Therefore, fur-ther analyses may find that specific actions may not produce a significant increase in public health and safety if the Commission endorsed pursuing the long-term actions.

The effects of the proposed actions on agency resources was an important con-cern to the agency managers who parti-cipated in developing the Part 2 re-port. Although the report did not include a detailed analysis of re-sources, it recognized that adding responsibilities and redirecting staff efforts could adversely affect the focus on safety for certain groups of employees such as inspectors and project managers.

Staff Recommendations

The staff recommended that: **(1)** the Commission approve the staff's overall approach of using the short-term ac-tions to develop additional informa-tion and insights before proceeding with the long-term actions, **(2)** the Commission direct the staff to con-tinue implementing the short-term actions in each of the areas of licens-ing basis, design bases, and FSARs, and **(3)** the Commission direct the staff to develop a coordinated, integrated action plan that considers together all of the long-term actions following additional staff review.

The policy issues discussed in the Part 2 report are directly linked to issues on implementing 10 CFR 50.59, which are discussed in a separate Commission paper, SECY-97-035. At the February 19 Commission meeting, the Commission indicated that it would address the broad policy issues following a meeting on 10 CFR 50.59 because of the interrelationships. The meeting for SECY-97-035 was held March 10, 1997.

For more information on this topic, contact Steven Stein via e-mail (SRS) or by calling (301) 415-1296.

PRA Applications Corner

This portion of the newsletter is devoted to sharing inspection exper-ience gained using Probabilistic Risk Assessment (PRA) concepts and methods. It is intended to be an inspectors' forum for both positive and negative experiences with PRA.

Inputs are welcome, and should be submitted to Douglas Coe via e-mail (DHC) or by calling (301) 415-1244.

Maintenance Rule Inspection Findings

Here are some recent Maintenance Rule inspection findings which might help in your own inspection activities:
(note: see related article entitled "Maintenance Rule Inspections")

Plant operators and maintenance sched-ulers used a risk assessment matrix to schedule on-line preventive mainten-ance, but mistakenly believed that the matrix included all PRA risk signifi-cant SSCs. Actually, the risk matrix included only 12 of the 44 PRA risk significant systems. This lack of understanding of the limitations of the matrix contributed to underesti-mating the risk associated with cer-tain equipment out-of-service config-urations. Licensee PRA specialists were not actively involved in this decision process.

System performance monitoring criteria were not always consistent with the reliability assumptions made by the PRA, such as reactor protection system performance which would be considered satisfactory with up to two mainte-nance preventable functional failures (MPFFs) per 12 month period. In fact, no failures of the RPS should have been allowed.

Some risk-significant systems did not have any performance criteria estab-lished. Other systems had inadequate performance criteria, such as reactor coolant system code safety valves assigned a criteria of less than two unplanned power reductions greater than 10% and no MPFFs within 36 months, which does not monitor for set-point drift.

Other weaknesses included failure to use the most recent PRA to perform the risk ranking, not using PRA insights to develop functional equipment groups used by maintenance schedulers, and not obtaining management approval as required by licensee instructions for higher risk configurations of equip-ment out-of-service.

-- contributed by Peter Wilson (e-mail PRW1), (301) 415-1114.

Overcoming Prejudice

"The goal of science is not the revel-ation of universal truth, which in any case is hidden from us in the quantum shadows. Rather, the modest but re-lentless goal of science is the grad-ual removal of prejudices."

Thus wrote Dr. Niels Bohr in 1958. Its underlying truth is just as relevant to PRA as it is to scientific inquiry in general. The goal of PRA cannot be to calculate an absolute risk number; its results carry probabilistic uncer-tainty just as does quantum physics.

In my view, the modest but relentless goal of PRA is the gradual removal of the prejudice in how and where we look for plant safety issues and how we as-sess their significance. Our inspec-tions are naturally biased by our in-dividual backgrounds, what we know or don't know, and what has given us past success. Extending our thinking be-yond these biases involves continuous learning, which can be aided by under-standing a plant PRA.
For example, consider the following situational questions and responses:

At its best, PRA is a team effort to identify many different core melt accident sequences, and to determine which of these is more likely to occur. However, will a multi-discip-linary team of analysts, operators, and engineers think of all possible core damage sequences? No, there are simply too many possibilities, which is why traditional safety analyses (FSARs) take a "bounding" approach.

Will they examine accident sequences not considered by the licensing safety analysis? Yes, for example, PRAs are not limited to single failures.

Could an inspector identify equipment failure modes or even entire accident sequences not considered by the PRA team? Very possibly, and if so, it may be possible to gauge the signif-icance of such inspection findings against the existing PRA analysis.

Is the PRA analysis a rigid yardstick? No, inspectors may even challenge im-portant assumptions made in a PRA and potentially reveal certain systems, components, or operator actions as more (or less) important than origin-ally thought.

Can an inspector use PRA results to "leverage" his or her own knowledge of plant design and operation with that of the licensee's PRA team and there-fore increase the chances for inspec-tion findings in areas of increased risk significance? Yes, and such findings could carry more weight (i.e. enhanced credibility) at the exit meeting table.

Is every risk-based inspection finding going to be a regulatory violation? No, but risk insights can help identi-fy areas where more intense inspec-tions are warranted.

What is a risk insight? A risk in-sight may be as simple as knowing that a PWR plant trip along with loss of all AFW followed by a loss of PORVs (lack of adequate bleed path) is an important core damage sequence (probabilistically).

How does an inspector "get" these insights? Basic risk insights, like the above, are often best obtained through discussion with PRA special-ists (NRC or licensee) familiar with a specific plant. They should always be integrated with knowledge of Tech Specs, the UFSAR, and plant design and operation. In all cases, PRA insights should make sense before they are relied upon.

How can they help to focus an inspec-tion? If inspections identify concur-rent deficiencies with systems, com-ponents, and/or operator actions link-ed by important core damage sequences (e.g. such as simultaneous issues with AFW, HP injection, and PORV operabil-ity), the overall significance of the findings can be increased.

The gradual removal of any type of prejudice always requires significant effort to look at things differently than we normally do. When inspecting, look for deficiencies linked through important PRA accident sequences, and seek to understand how inspection findings might be related to each other through the PRA.

Remember, PRA results do not provide "pat" answers and do not absolve us from the need to integrate all other available sources of information, but they can act as a springboard to ex-pined our thinking and insight into a plant's design and operation, and help us identify significant safety issues.

-- contributed by Douglas Coe (e-mail DHC), (301) 415-1244.

END

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Reactor Inspection Program NEWSLETTER

Issue 97-02 ** WordPerfect 5.1 Version ** *Autumn 1997*

The Reactor Inspection Program Newsletter provides a forum to communicate current inspection program issues and activities to the reactor inspection staff. The intent is to ensure that inspectors are aware of current program direction, management expectations, inspection trends, program and policy changes, and lessons learned.

Another important objective of this newsletter is to share useful inspection information between offices, regions, and inspectors to promote efficient and consistent inspection activities. Inspectors and management are encouraged to submit proposed topics of interest they'd like to know more about, and/or proposed articles summarizing recent experiences, for publication in this newsletter.

The newsletter is available to all NRC employees through the R:\NEWSLTTR directory. Those files with the ".wpd" suffix are formatted in Word-Perfect 6.1 for Windows and are best viewed using the "margin-width" zoom option or after printing. Those files without a suffix are formatted in WordPerfect 5.1 and are best viewed after printing. Hard copies of this newsletter have also been distributed to each NRC resident inspector's office. In the future, we also hope to make the newsletters available on-line via the NRR home page.

The NRR Inspection Program Branch (PIPB) prepares the newsletter on an as-needed basis. If you have comments, recommendations, or proposed topics or articles, please direct them to Ronald Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Inside this Newsletter . . .

GAO Audit of Nuclear Reactor Oversight

The United States General Accounting Office (GAO) published a report of the NRC's oversight of the nuclear power industry in May 1997 entitled Nuclear Regulation: Preventing Problem Plants Requires More Effective NRC Action (GAO/RCED-97-145). The objectives of the review were to determine how the NRC (1) defines nuclear safety, (2) measures and monitors the safety condition of nuclear plants, and (3) uses its knowledge of safety conditions to ensure the safety of nuclear plants. The review focused on three plants with long-standing histories of uncorrected safety concerns; Salem, Millstone, and Cooper.

GAO's Findings and Conclusions

The report concluded that there were a number of instances in which the NRC had not taken aggressive enforcement action nor held licensees accountable for correcting their problems on a timely basis. NRC's practice of giving licensees extensive time to fix their problems allows nuclear plants to continue to operate and the problems to grow worse. Fines levied against licensees for violations of regulations often occur long after problems are first identified.

For the specific plants examined, the GAO found that the NRC forced the licensees to cor-rect their problems only after they had voluntarily shut down their plants. In addition, by not evaluating the competency of licensees' plant management as part of the on-going inspection process, the NRC is missing an opportunity to act on the plant's safety performance problems at an early stage, when problems are easier and cheaper to address. Finally, the NRC's process to focus attention on those plants with declining safety performance, the Senior Management Meeting (SMM), needs substantial revisions to achieve its goal of an early warning tool.

The GAO stated that by intervening early and taking aggressive enforcement action when warranted, the NRC can prevent declines in nuclear plants' long-term performance and better assure itself that the plants are meeting high safety standards. Ensuring that licensees fix their safety deficiencies promptly and have high-quality management in place is the key for the NRC to fulfill its mission of adequately protecting the public's health and safety from the dangers inherent in nuclear power plants.

GAO's Recommendations

To enhance licensees' accountability, the GAO recommended that the NRC develop strategies to more aggressively act on safety deficiencies when they are discovered. To achieve this goal, the NRC should: (1) require inspection reports to fully document for all plants the status of the licensees' actions to address identified problems under NRC's corrective action requirements, including timetables for the completion of corrective actions and how the NRC will respond to nonconformances with planned actions, (2) make licensees' responsiveness to identified problems a major feature of the information provided to the participants of the SMMs, including how the NRC will respond if the problems go uncorrected, and (3) require that the assessment of management's competency and performance be a mandatory component of the NRC's inspection process.

Staff Response to GAO's Concerns

The NRC explained in its response to the GAO that the plants cited in the report were indeed operating with adequate but reduced safety margins, but we had reasonable assurance that there was no undue risk to public health and safety because of the built-in conservatism and protection afforded by the defense-in-depth philosophy.

Regarding the specific recommendations in the report, the staff agreed with the basic thrust of each and mentioned a number of actions underway which address some of the issues raised by the GAO. These actions included: (1) clarifications on the use of information contained in the FSAR during inspections and requirements to update the FSAR, (2) clarification of responsibilities and training requirements for project managers, (3) piloting a program to manage licensee commitments which are relied upon for approval of licensing actions by NRR.

Enhancements have also been initiated for the SMM process, including (1) to use a template that provides additional structure and discipline to enhance the objectivity of the watchlist plant identification, (2) to more clearly define the safety performance attributed used in the SMM process, (3) to ensure that each SMM plant performance assessment is based on standard criteria, and (4) to improve the rigor and order of the screening meetings (at which plants are selected for SMM discussion) and the SMMs.

In the area of assessing management competency, we agreed that licensee management has a significant effect on plant operations and safety, but this is a difficult area to quantify and assess. The staff intends to continue to work on the development of better tools to assist our assessment of management-related issues.

GAO's comments on our response, and our response itself, are included in the appendix to the final report. Copies of this report may be obtained by calling the GAO at (202) 512-6000.

Integrated Review of the NRC Assessment Process for Operating Reactors

The NRC staff has begun an integrated review of the various assessment processes used to evaluate licensees as outlined in Commission paper SECY-97-122 dated June 6, 1997. This review and evaluation will encompass all processes from inspection report outputs to the senior management meeting (SMM), including the plant performance review (PPR) and systematic assessment of licensee performance (SALP) processes. The goal of the effort is to maximize the efficiency and objectivity of the overall assessment process and to minimize redundancy and subjectivity. This review will be integrated with other ongoing efforts which are currently being developed, such as the revisions to the SMM process (see related article entitled "SMM Process Improvements").

The review team assembled for this effort will be led by NRR with participation by each regional office and other headquarters offices. The kickoff meeting is currently scheduled to be held in the Region III office in Lisle, Illinois, from September 29 to October 1, 1997.

Thoughts and suggestions on improving the assessment process are welcome and should be forwarded to the review team through one of the following primary points of contact: Dave Gamberoni, NRR; Tim Frye, NRR; Larry Nicholson, Region I; Mark Lesser, Region II, Bruce Burgess, Region III; and Bill Johnson, Region IV. Updates on the progress of this review and assessment will be presented in future editions of this newsletter.

Senior Management Meeting Process Improvements

The Commission has issued several staff requirements memoranda (SRM) directed toward improving the credibility, scrutability, and consistency of the SMM. In June of 1996, the Commission directed the staff to assess the SMM process and evaluate the development of indicators that could provide a basis for judging whether a plant should be placed on or deleted from the watch list. In response to this request, the staff contracted with Arthur Andersen Consulting to do an assessment of the SMM process.

Arthur Andersen issued their report on December 30, 1996, and the staff briefed the Commission of the results on February 18, 1997. Concerns with the SMM process included but were not limited to: (1) the subjectiveness of the process, (2) the reliance on lagging indicators in the decision process, (3) the information for making performance as-sessments was inconsistent, and (4) the presentation of information was not balanced and structured.

Following the briefing, the Commission issued an SRM requiring the staff to submit recommendations for improvements to the SMM pro-cess, including its plans to address the recommendations of the Arthur Andersen report. The staff replied to the Commission request by issuing SECY-97-072 on April 2, 1997.

The current process at a glance:

The senior management meeting (SMM) continues to be an important aspect of the NRC process for evaluating licensee performance. SMMs are held approximately every six months to review licensees' individual performance on a national basis and bring to the attention of the highest level of NRC management those plants whose operational safety performance is of most concern. The SMM process is described in NRC Management Directive 8.14, "Senior Management Meeting." The three key elements of the process are discussed below:

(1) Screening Meeting - Within approximately two months of the SMM a screening meeting is held to decide which plants are to be discussed at the SMM. The screening meetings, which last about eight hours per region, are attended by each regions' Regional Administrator (RA), the Director NRR, and other senior mangers. Information from the latest Plant Performance Reviews (PPRs), Plant Issues Matrix (PIMs), performance trends, and enforcement history are discussed with emphasis on adverse trends and the effectiveness of licensee self-assessments.

(2) SMM - At the SMM, the Director of NRR facilitates plant performance discussions and assures that the relevant views of all participants are elicited and considered in the decision process. From the review of performance information for individual plants, senior managers may take actions such as placing or removing plants from the watch list or issuing trending letters.

(3) Commission Briefing - Following the SMM the staff briefs the Commission on the SMM results in a public meeting.

What the future holds:

Many changes have already taken place to improve the SMM process. At the April 1997 screening meetings, PPR summaries, PIMs, enforcement summaries, AEOD performance indicator trend charts, Arthur

Andersen trend plots, and economic indicators were provided to all participants. In addition, Management Directive 8.14, which was issued in March 1997, included the use of a "plant performance template." The template was designed to provide a consistent set of categories for assessing plant performance. Pro/con charts that summarize facility performance information in terms of reasons for and against taking action on a facility were first used at the January 1997 SMM. The pro/con charts are now being structured using the five assessment categories found in the plant performance template.

Other initiatives that are currently under development by AEOD include: (1) utilization of performance indicators for the development of a validated trending methodology (trend plots) to identify candidate plants for discussion at the SMM, (2) improvement in the existing plant performance template to provide a structure for future plant evaluations, (3) defining a set of objective criteria associated with the template categories, (4) developing a process to assess leading indicators, such as management and operational effectiveness, and (5) identifying a set of economic indicators.

The staff plans to have preliminary sets of the revised template, criteria, and indicators available for the next SMM screening meetings, scheduled for late October and early November 1997. The next SMM is scheduled for January 6 & 7, 1998 in Region II. Information regarding the latest SMM (June 1997) can be found in the News and Information window of the NRC external Home Page under "Documents: Watch List." For more information on the SMM process and related improvements, contact Donald Taylor via e-mail (DRT) or by calling (301) 415-8472.

Public Release of the Plant Issues Matrix

The Plant Issues Matrix (PIM) is a concise chronological listing of inspection findings and issues at a site, serving as a useful tool during the plant performance review (PPR), senior management meeting (SMM), and systematic assessment of licensee performance (SALP) processes. The PIM is also available to the staff to help prepare for inspections and assess licensee performance trends.

In an August 1997 memorandum to the Commission, the staff provided its plans for making the PIM also available to licensees and the public. Following the Spring 1998 PPR meetings, PIMs will be included as an attachment to the PPR letters issued to each licensee every six months. The first publicly-available PIMs should contain information for a six month time period (September 1997 - February 1998) and should only include items previously docketed such as NRC inspection reports, licensee event reports, etc. Subsequent PIMs that are released will contain additional information, up to a maximum of 18 months of data. To minimize the review and revision effort prior to releasing the PIM, information included in the PIM beginning September 1997 should meet the standard for public release. Utilizing the guidance in Inspection Manual Chapter 0304, "Plant Performance Reviews," will aid in achieving PIM consistency.

PRA Applications Corner

This portion of the newsletter is devoted to sharing inspection experience gained using Probabilistic Risk Assessment (PRA) concepts and methods. It is intended to be an inspectors' forum for both positive and negative experiences with PRA.

"PRA Applications Corner" will not be featured in this issue, but will return as a standard feature in future issues of the newsletter. Inputs are welcome, and should be submitted to Douglas Coe via e-mail (DHC) or by calling (301) 415-1244.

Inspector Success Stories

The intent of this article is to showcase and share notable inspection experiences and findings between offices, regions, and inspectors. The goal is to make this article a regular feature in the newsletter, but this will not be possible without consistent input and feedback from management and the inspection staff. Please submit future nominations for this article to Ron Frahm, Jr via e-mail (RKF) or by calling (301) 415-2986.

Example 97-01

As part of a review of the RHR system, the inspector reviewed the licensee's procedures for transition from the injection mode to the cold leg recirculation mode following a loss of primary coolant. The review included Section 6.3 of the UFSAR and EOP E-1.3, "Transfer to Cold Leg Recirculation."

The UFSAR described the changeover of ECCS from injection mode to recirculation mode after a loss of primary coolant. It was described that upon receipt of the refueling water storage tank (RWST) low level alarm, a signal was provided to trip both RHR pumps. The remainder of the changeover sequence was accomplished manually by the operator from the control room. The total time estimated in the UFSAR to perform this evolution was 10 minutes (time available before RWST reached the low-low level alarm was listed as 22 min-utes). The inspector noted the staff's acceptance of the manual switchover was conditional in that it required the licensee to more fully automate the switchover process. The licensee was unable to locate documentation regarding any further action on this matter.

EOP E-1.3 was the current implementing procedure for the transition of ECCS from the injection mode to the cold leg recirculation. A review of EOP E-1.3 found that it differed in content and sequence from the procedure described in the UFSAR. Review of the procedure history sheets, associated with the original version of EOP E-1.3 and its 14 subsequent revisions, indicated that evaluations of the changes were required in accordance with 10 CFR 50.59, although none had been performed.

The significance of the licensee's failure to evaluate the changes against the licensing ba-sis in the UFSAR is that several of the changes increased the time it would take operators to complete the switchover from injection to recirculation following a LOCA. This reduced the time margin available before the ECCS pumps would lose suction from a low-low water level condition in the RWST (4% level). That time margin was, in part, the basis for the NRC's acceptance of the manual switch-over procedure as documented in SSER 9.

The inspector questioned the licensee on the impact of the changes to EOP E-1.3 upon the times listed in the UFSAR. The licensee performed a prompt operability assessment that evaluated the differences between the UFSAR and EOP and analyzed the time available to the operator to complete the switchover. The evaluation noted that changes had been made which added steps to the EOP and changed the step sequence. It was determined that with the conservatisms in the UFSAR removed, it would take 16.2 minutes to empty the usable volume of the RWST following the automatic trip of the RHR pumps. The licensee noted that gas binding of the CCP, containment spray pumps, and safety injection pumps would occur if the RWST were to empty before the transfer to cold leg recirculation was completed. This condition could potentially damage the pumps and would necessitate venting of the pump's suction piping.

This finding was identified at Diablo Canyon by Scott Boynton. This is a good example of the importance of reviewing a safety related system and comparing existing procedures and equipment with what is described in the plant UFSAR.

Reference inspection report number 50-275;323/ 96-21 or contact Larry Yandell (e-mail LAY, (817) 860-8182) for more details on this inspection finding.

Example 97-02

On October 10, 1996, during performance of the IST procedure for the standby service water A loop quarterly pump and valve operability test, the inspectors noted that certain steps required the user to obtain pump vibration readings at the locations indicated on Attachment 4 for SSW Pumps 1SWP-P2A and -P2C, respectively. Attachment 4 to the IST procedure provided a drawing that required the vibration readings to be taken axially on top of the upper pump motor cover, upper motor cover parallel to the pump discharge flow, and upper motor cover orthogonal to the pump discharge flow. However, the engineers took the vibration data in three orthogonal directions on lifting lugs that were welded to the lower sides of the motor cover.

The inspectors questioned why the engineers did not take the pump vibration data at the locations shown in Attachment 4 of the IST procedure. The operators directing the procedure stated that the vibration data was taken on the motor lifting lugs for approximately 1 year, and the pump vibration data had been baselined at these new locations. However, the procedure had not yet been revised to reflect the current practice.

The inspectors reviewed the licensee's locations of recording vibration data actually used by the engineers during performance of the IST procedure. The inspectors compared these locations for recording vibration to the requirements of the licensee's IST program. The inspectors noted that the licensee requested and received relief from the IWP sections of ASME Section XI but were approved to use

ASME/ANSI OMa-1988, Part 6, "Inservice Testing of Pumps in Light-Water Reactor Power Plants," for IST of safety-related pumps. Section 4.6.4 of ASME/ ANSI OMa-1988 requires, for vertical line shaft pumps (including Pumps 1SWP-P2A and -P2C), that the vibration velocity be taken on the upper motor bearing housings in three orthogonal directions with one in the axial direction. Because the licensee was not taking vibration velocity readings on the upper motor bearing housings, the inspectors noted that the licensee was not in compliance with the IST program. The failure to comply with the procedure and to properly implement the IST program is a violation of TS 5.5.6.

The inspectors informed the IST engineers, who initiated a condition report to enter this issue into the licensee's corrective action program. The licensee's investigation noted that vibration velocity readings were taken in unapproved locations for four additional SSW pumps and three fuel oil transfer pumps for the EDGs.

The inspectors noted that previous examples existed in which the licensee's procedures for IST were unclear or incorrect for performance as discussed in a previous NRC inspection report. In addition, two previous NRC inspection reports described problems with drawings for taking pump vibration data. Therefore, the inspectors concluded that the licensee has not effectively corrected problems with IST procedures.

This finding was identified at River Bend by Dave Proulx. This is a good IST program finding and an example of the benefits of reviewing licensee procedures before or during the performance of a surveillance activity and having a questioning attitude.

Reference inspection report number 50-458/96-15(2) or contact Larry Yandell (e-mail LAY, (817) 860-8182) for more details on this inspection finding.

Staff Attendance at Industry Meetings

Field Policy Manual (FPM) No. 20 provides policy and guidance for staff participation in industry-sponsored seminars and technical conferences. In general, the staff should participate in industry seminars or technical conferences to facilitate public awareness and understanding of NRC programs, provided the seminar or conference: (1) Supports the exchange of information or education, (2) Permits the NRC to demonstrate a position of leadership, (3) Provides an opportunity for the staff to establish appropriate contacts, or (4) Discusses subjects where it would be considered beneficial for the NRC mission to exhibit regulatory interest.

When determining whether or not to participate, the staff should consider the following factors: are sessions open to the public?; do attendees represent a broad range of entities or interests?; is the agenda balanced and expected to present all of the important aspects of a particular topic?; is there not predominance of a particular sponsor?; and are the sessions not related to an associated vendor demonstration fair or exposition?

Attendance at any seminar or conference that does not meet all of these factors should be reviewed with management, up to the DEDR in highly visible cases or where our attendance could be perceived as an endorsement of a particular position.

The NRC generally should not participate in conferences where the primary purpose appears to be for the financial or business benefit of the sponsoring entity or the conference is promotional in content. Since the NRC cannot control the subject matter discussed during an industry-sponsored conference, if the discussions approach issues that might lead to a specific regulatory decision or action, and the meeting is closed to the public, then the NRC attendee should leave the conference.

Related guidance on NRC-controlled meetings can be found in Management Directive 3.5, "Public Attendance at Certain Meetings Involving the NRC Staff." Specific questions on meeting attendance should be directed to management.

Recommending Third Party Assistance

On occasion, licensees ask inspectors or other NRC employees for recommendations for obtaining assistance when attempting to solve programmatic problems. Inspectors are reminded that they are not permitted to recommend the services of one or more people or organizations for any project under NRC regulatory jurisdiction. Federal employees are prohibited under 5 CFR 2635.702 from using public office for endorsement of any product, service, or enterprise. IMC 2515 is in the process of being revised to emphasize that third party assistance is strictly prohibited.

For additional NRC-specific guidance, refer to EDO Field Policy Manual Number 19, "Guidance for Recommending Third Party Assistance to Licensees".

Enforcement Guidance : Severity Level IV Non-Cited Violations

Enforcement Guidance Memo 97-012

The Office of Enforcement (OE) issued enforcement guidance memorandum (EGM) 97-012, "Additional Guidance for Severity Level IV Non-Cited Violations (NCVs)," in June 1997 to provide additional guidance on the use of NCVs for Severity Level IV violations. This guidance addresses:

(1) Section VII.B.1.a of the Enforcement Policy was modified by deleting the reference to identification through an event to clarify that use of the NCV discretion for Severity Level IV violations is not automatic if the violation is identified through a self-disclosing event.

(2) If a Severity Level IV violation is licensee-identified, corrected, and non-repetitive, treatment as an NCV may be warranted. The new standard language to be used in inspection reports for both non-willful and willful NCVs is intended to act as a reminder to inspectors that Severity Level IV violations may be dispositioned as NCVs provided that they are not repetitive issues. Section 05.04.a.3 of IMC 0610, "Inspection Reports," has been revised to incorporate the new standard language.

(3) The expectation is that violations involving potential programmatic issues not be dispositioned as NCVs. Programmatic is used here to mean that broad corrective actions are needed to address the root cause, consistent with the current guidance in Section 6.3.1.3 of the Enforcement Manual.

(4) Duration and prior opportunities to identify are issues that are not normally considered in determining whether to disposition a Severity Level IV violation as an NCV. However, where a long-standing violation exists and clear opportunities existed that indicate a current problem in identifying and preventing violations of a programmatic nature, it may be appropriate to cite the violation in an NOV.

These issues will be addressed in an upcoming Change Notice to the Enforcement Manual. In addition, EGM 97-012a, "Addendum to EGM 97-012 on Severity Level IV NCVs," was issued later in June which included a flow chart to summarize the decisional points that should be considered in determining whether a Severity Level IV violation should be dispositioned as an NCV as well as a key to addressing each decisional point.

Additional Enforcement Guidance

Additional recent enforcement guidance memoranda related to the reactor inspection program include:

- EGM 97-003 "Open Predecisional Enforcement Conferences, Commission Consultation, Risk Significant Violations and Non-Cited Violations"
- EGM 97-004 "Changes in the Implementation of the Maintenance Rule Enforcement Review Panel"
- EGM 97-008 "Recent Changes to the Enforcement Policy"
- EGM 97-011 "Consideration of Risk in Enforcement Actions"
- EGM 97-013 " Compliance with Tech-nical Specification Limiting Conditions for Operation and Action Statements"

Copies of the EGMs, and other enforcement guidance documents, are available through the internet on the OE homepage through the internal or external NRC servers (location http://www.nrc.gov/OE/rpr/oehome3.htm). For more information on EGM 97-012 or related enforcement issues, please contact Renee Pedersen via e-mail (RMP) or by calling (301) 415-2742.

Safety and Compliance

In Staff Requirements Memorandum dated August 25, 1997, the Commission approved the following discussion of safety and compliance. This guidance will be incorporated in the Enforcement Policy, Inspection Manuals, and Project Managers Handbook.

As commonly understood, safety means freedom from exposure to danger, or protection from harm. In a practical sense, an activity is deemed to be safe if the perceived risks are judged to be acceptable. The Atomic Energy Act of 1954, as amended, establishes "adequate protection" as the standard of safety on which NRC regulation is based. In the context of NRC regulation, safety means avoiding undue risk or, stated another way, providing reasonable assurance of adequate protection for the public in connection with the use of source, byproduct and special nuclear materials.

The definition of compliance is much simpler. Compliance simply means meeting applicable regulatory requirements.

What is the nexus between compliance and safety?

(1) Safety is the fundamental regulatory objective, and compliance with NRC requirements plays a fundamental role in giving the NRC confidence that safety is being maintained. NRC requirements, including technical specifications, other license conditions, orders, and regulations, have been designed to ensure adequate protection--which corresponds to "no undue risk to public health and safety"--through acceptable design, construction, operation, maintenance, modification, and quality assurance measures. In the context of risk-informed regulation, compliance plays a very important role in ensuring that key assumptions used in underlying risk and engineering analyses remain valid.

(2) Adequate protection is presumptively assured by compliance with NRC requirements. Circumstances may arise, however, where new information reveals, for example, that an unforeseen hazard exists or that there is a substantially greater potential for a known hazard to occur. In such situations, the NRC has the statutory authority to require licensee action above and beyond existing regulations to maintain the level of protection necessary to avoid undue risk to public health and safety.

(3) The NRC has the authority to exercise discretion to permit continued operations--despite the existence of a noncompliance--where the noncompliance is not significant from a risk perspective and does not, in the particular circumstances, pose an undue risk to public health and safety. When non-compliances occur, the NRC must evaluate the degree of risk posed by that non-compliance to determine if specific immediate action is required. Where needed to ensure adequate protection of public health and safety, the NRC may demand immediate licensee action, up to and including a shutdown or cessation of licensed activities.

In addition, in determining the appropriate action to be taken, the NRC must evaluate the non-compliance both in terms of its direct safety and regulatory significance and by assessing whether it is part of a pattern of non-compliance (i.e., the degree of pervasiveness) that can lead to the determination that licensee control processes are no longer adequate to ensure protection of the public health and safety. Based on the NRC's evaluation, the appropriate action could include refraining from taking any action, taking specific enforcement action, issuing orders, or providing input to other regulatory actions or assessments, such as increased oversight (e.g., increased inspection).

(4) Where requirements exist that the NRC concludes have no safety benefit, the NRC can and should take action, as appropriate, to modify or remove such requirements from the regulations or licenses. Requirements that are duplicative, unnecessary, or unnecessarily burdensome can actually have a negative safety impact. They also can tend to create an inappropriate NRC and licensee focus on "safety versus compliance" debates. As the Commission states in its Principles of Good Regulation, "There should be a clear nexus between regulations and agency goals and objectives, whether explicitly or implicitly stated."

(5) Since some requirements are more important to safety than others, the Commission should use a risk-informed approach wherever possible when adding, removing, or modifying NRC regulations, as well as when applying NRC resources to the oversight of licensed activities (this includes enforcement). Based on the accumulation of operating experience and the increasing sophistication of risk analysis, the NRC should continue to refine its regulatory approach in a manner that enhances and reaffirms our fundamental safety objective.

These principles attempt to describe the nexus between compliance and safety. The misperception that compliance and safety are somehow incompatible or unrelated arises when the principles just outlined are not understood or are wrongly applied. When understood and applied correctly, the result should be a consistent, credible regulatory approach--as applied to licensing, inspection, enforcement, performance assessment processes, and rulemaking.

IP 71707 Revision Status

Inspection Procedure (IP) 71707 has been significantly revised and reformatted, and is scheduled for release in mid September. This revision is to be implemented at the start of the first new inspection period after October 1, 1997.

The revision captured some of the Millstone Lessons-Learned items including emphasis on FSAR and 10 CFR 50.59 reviews as well as use of the PRA/IPE results. Inspection for operator work-arounds, and observation of auxiliary operator activities and simulator training of control room operators are new requirements added to the procedure. The guidance sections have been streamlined with most of the general guidance deleted in this revision. Maintenance Rule related inspection requirements are deleted as they are incorporated in IP 62707. Also deleted are the separate sections on outage inspection that is now addressed via a general requirement to choose inspection samples based on the mode of plant operation. Most of the specific references to plant systems are deleted in favor of inspection sample selection based on safety and risk significance of ongoing activities, structures, systems and components, and mode of plant operation.

The draft revision of the procedure was reviewed by the regions, and was applied at four sites, one at each region, by the resident inspectors for an entire inspection period. Lessons-learned from the pilot application and regional review were incorporated into this revision. Appendix A to IP 2515 has also been revised to reflect increased allocated inspection hours for IP 71707. Although training has occurred on the revised procedure, additional training will be provided as requested by regional and resident staff.

For more information on the revisions to IP 71707, contact Maitri Banerjee via e-mail (MXB) or by calling (301) 415-2277.

Reactor Inspection Program

NEWSLETTER

Issue 98-01 *Spring 1998*

The Reactor Inspection Program Newsletter provides a forum to communicate current inspection program issues and activities to the reactor inspection staff. The intent is to ensure that inspectors are aware of current program direction, management expectations, inspection trends, program and policy changes, and lessons learned. Another important objective of this newsletter is to share useful inspection information between offices, regions, and inspectors to promote efficient and consistent inspection activities.

The current issue of the newsletter, as well as previous issues, is available to all NRC employees through the R:\NEWSLTTR directory. This issue is the first to be formatted solely in WordPerfect 6.1 for Windows and is best viewed using the "margin-width" zoom option or after printing. Those files without a ".wpd" suffix are formatted in WordPerfect 5.1 and are best viewed after printing. Hard copies of this newsletter have also been distributed to each NRC resident inspector's office. In addition, our goal is to make the newsletters available on-line via the NRR home page within the next few months.

The NRR Inspection Program Branch (PIPB) prepares this newsletter on an as-needed basis. Comments, recommendations, or proposed topics or articles are encouraged and appreciated. Please direct them to Ronald Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Inside this Newsletter . . .

"Performance-Based" Discussion

Background

The concept of performance-based inspection was first introduced to the NRC staff in 1987 with SECY-87-220, "Assurance of Quality," and temporary instruction (TI) 2515/78, "Inspection of Quality Verification Functions." NUREG/CR-5151, "Performance-Based Inspections," was issued in 1988 to further describe the inspection approach and its implementation, and to introduce the training course "Inspecting for Performance."

In late 1995, the Office of the Inspector General (OIG) conducted an audit of the NRC's operating reactor inspection program. The OIG found, in part, that although NRC's policy prescribes that inspectors use direct observation and focus on issues with greater safety significance, inspectors and supervisors lacked a clear concept of how to do this. The staff took several actions to address the OIG's findings, including: (1) rewriting IMC 2515 and IMC 0610, (2) developing the "Field Techniques and Regulatory Processes" course, and (3) reemphasizing the performance-based inspection approach to the inspection staff through this newsletter (reference the "Performance-Based Inspection" article in issue 95-01) and the inspector counterpart meetings.

In March 1997, the Commission issued an SRM requesting that the staff ensure that inspection guidance and training were consistent on how to inspect for performance, and that the distinction between inspecting for performance and inspecting against a performance-based rule is understood by inspectors. The staff's response was presented in SECY-97-231 dated October 8, 1997. In general, the staff found that the inspection guidance and training were consistent, but additional actions were taken to clarify management's expectations for performance-based inspection and inspecting against a performance-based rule, including: (1) revising the "Inspecting for Performance" course, (2) making the "Field Techniques and Regulatory Processes" course an IMC 1245 inspector qualification requirement, and (3) providing a clarifying discussion in a future newsletter article . . .

Discussion

The intent of NRC performance-based inspections is to concentrate on licensee activities that most significantly affect plant safety. IMC 0610 provides a concise working definition for performance-based inspection; "inspection that focuses on issues of safety and reliability, with an emphasis on field observation rather than in-office procedural record reviews." The inspections typically start by observing work activities, and then discrepancies or uncertainties lead inspectors to other areas, such as quality verification, training adequacy, and procedural controls. This inspection approach departed from past NRC inspection practices (pre 1987) which emphasized documentation and program review as a means to measure operational safety (a more compliance-based approach).

Once the licensee's program and documentation structure have been established and accepted, the licensee's ability to perform program activities safely and reliably becomes the principal concern. Performance-based inspection tends to focus more on results (i.e., does the valve work?) than on process (i.e., was the procedure adequate?). Performance problems then lead inspectors into evaluating root causes and potential programmatic issues.

Unlike the traditional prescriptive NRC rules, a performance-based rule (i.e., the maintenance rule) describes the general processes to be followed and the results expected by licensees. This approach gives licensees greater flexibility in developing and adjusting implementation activities to most efficiently utilize and/or merge with their existing programs and policies, allowing them to concentrate their resources on the most safety significant issues.

Regardless of whether a rule is performance based or prescriptive in nature, the preferred method of inspection is performance based. In order to effectively inspect against a performance-based rule, you must first verify that a comprehensive program is in place and is being implemented to ensure that performance can be evaluated. Once the program has been baselined, subsequent inspections should be more performance based in nature.

Available Guidance and Training

Substantial guidance and training are available and recommended for those inspectors, supervisors, and other NRC staff who would like to clarify their understanding of this important inspection philosophy.

Formal Inspection Guidance. The following guidance exists in the NRC Inspection Manual:

♦IMC 2515 establishes the policy for the reactor inspection program and emphasizes the use of performance-based inspection techniques.

♦Relevant inspection procedures incorporate the performance-based approach into the inspection process (i.e., IP 71707 "Plant Operations," IP 62707 "Maintenance Observation," IP 61726 "Surveillance Observations").

♦IMC 0610 further discusses performance-based inspection and provides guidance on documenting performance-based inspection findings.

♦IP 62706 (maintenance rule baseline procedure) and IP 62707 provide guidance for inspecting against the maintenance rule.

Formal Training. These courses are required for initial inspector qualification per IMC 1245:

♦"Inspecting for Performance" (G-303) provides an understanding of performance-based inspection tools and techniques, and insights on how to apply these inspection tools and techniques effectively. This course was recently revised to include the guidance from IMC 0610 and an overview of the maintenance rule. *(2.5 days, offered June 2-4 in Headquarters)*

♦"Field Techniques and Regulatory Processes" (G-103) allows students to apply the knowledge and principles of performance-based inspection through case studies to simulate the day-to-day activities of a resident inspector in carrying out the responsibilities of the position. *(5 days, offered May 18-22 and August 24-28 at the TTC)*

♦"Fundamentals of Inspection" (G-101) provides an understanding of the NRC inspection program, including inspector conduct, legal aspects, preparation, communication, inspection techniques, documentation, handling allegations, enforcement, and other inspection issues (including performance-based inspection). *(4 days, offered April 13-16, 1999 in Headquarters)*

♦"Fundamentals of Inspection Refresher" (G-102) reinforces performance-based inspection skills and techniques, covers lessons learned, and communicates management's expectations to inspectors. This course is required every three years to maintain IMC 1245 qualification. *(1 day, scheduled by request)*

NOTE: Additional sessions of these courses may be made available as needed. Contact your training coordinator.

Other Sources/References:

♦Background information in SECY-87-220, "Assurance of Quality," TI 2515/78, "Inspection of Quality Verification Functions," and NUREG/CR-5151, "Performance-Based Inspections."

♦Announcement Number 114, "Discussion of Safety and Compliance," which forwarded to all NRC employees the Commission-approved discussion of safety and compliance.

♦Previous newsletter articles, including "Performance-Based Inspection" (issue 95-01), "IG Audit of the Inspection Program" (96-01), "Revised IMC 0610, 'Inspection Reports" (96-01), "Q & A on the Revised IMC 0610" (96-02), "Maintenance Rule Inspections" (97-01), and "Safety and Compliance" (97-02).

♦Open discussions with other inspectors, management, and the program office (NRR/PIPB) through counterpart meetings and other forums.

For additional questions on performance-based inspection, contact Ron Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Resident Demographics

Background

The RI program was initiated in 1978 to improve the NRC's inspection program by providing increased knowledge of conditions at licensed facilities, improved ability to independently verify licensee performance, and improved incident response capability. The program has evolved over the years, making adjustments as necessary to ensure that sites are adequately staffed with qualified and experienced resident inspection staff in order to meet the program goals.

In March 1997, the Commission issued an SRM directing the staff to develop data regarding the past and present demographics of the NRC RI population with respect to experience and qualifications. The resultant data is summarized below and was presented to the Commission in SECY-97-285 on December 10, 1997. SECY-97-285 also includes a discussion of the balance between expertise and objectivity, and the attachment provides a summary of the origin and evolution of the RI program.

Resident Experience

A resident site-time study was performed in spring 1994 to determine average experience levels for RIs and SRIs as part of a review of the RI program (reference SECY-94-181). A similar study was performed in November 1997, 3.5 years later, to compare the results and to look for possible trends.

Resident Experience Levels (in Years)

	April 1994	Nov. 1997	Percent change
RIs - NRC time	5.37	5.13	- 4.5%
- Resident time	3.01	2.66	-11.6%
- Current site time	1.79	1.36	-24.0%
SRIs - NRC time	10.31	9.84	- 4.6%
- Resident time	7.46	6.88	- 7.8%
- Current site time	2.33	2.13	- 8.6%

The November 1997 data indicated that the average experience level for RIs and SRIs had declined since April 1994. On the average, the RIs and SRIs had less NRC time, less total resident time, and less current site time than they had in 1994. The average current site time for RIs is 24% less (approximately 5.1 months) than it was 3.5 years earlier, while the SRIs have an average of 8.6% less experience (approximately 2.4 months) at their current sites.

Past experience indicates that the current RI Development Program resource level is insufficient to meet the current or future demand to fill RI vacancies. The regions, working with HR, have needed to rely on additional recruiting efforts to fill vacant resident positions.

Resident Attrition

Attrition rates of resident staff over the past four years were compiled and assessed (see the table below). External losses refer to staff departing from the NRC (i.e., those resigning or retiring from the NRC), and internal losses refer to resident inspection staff departing from the NRC RI program (i.e., reassignments or promotions within the NRC). Resident attrition rates are based on the average number of resident inspection staff in a given fiscal year, typically around 170 - 175 inspectors.

Resident Attrition Rate

	NRC ext. RI/SRI losses	RI/SRI losses	RI/SRI ext. losses	Total int. losses
FY94	5.5%	2.3%	8.7%	11.0%
FY95	5.7%	4.5%	9.0%	13.5%
FY96	4.6%	4.6%	11.0%	15.5%
FY97	5.2%	9.7%	12.6%	22.3%

The average agency-wide external attrition rate has remained relatively stable over the 4-year period. The average attrition rate for resident inspection staff moving to other NRC positions was found to be steadily increasing. The average attrition rate for resident inspection staff leaving the NRC has significantly increased over the past four years, more than doubling in the past year. The resident attrition rate for external losses was previously at or below the agency average attrition rate until FY 1997.

The majority of nuclear sites in the country have lost one or more NRC resident inspection staff members during the past fiscal year. A total of 39 inspectors left the NRC RI program in FY 1997. Seventeen of these 39 resident inspection program losses were departures from the NRC, including 10 SRIs. A total of 20 resident inspection staff, including 7 SRIs, resigned or retired from the NRC from FY 1994 through FY 1996. More SRIs (10) left the NRC in FY 1997 than in the previous three years combined (7).

Future Program Considerations

The NRC is planning several actions to evaluate and address the increased attrition rate from the RI program, including: (1) commencing the pilot program for a 7-year resident relocation policy (see related article entitled "Suspension of the 5-Year Relocation Policy"), (2) evaluating the results of the job task analysis (JTA) of regional DRP positions to gain additional insights into potential changes to the RI program (see related article entitled "Whatever Happened to the JTA"), and (3) beginning a comprehensive management review of the RI program's resource and career planning goals and objectives.

The staff committed to completing its review by June 30, 1998, and then preparing a Commission paper which addressed the RI program issues and made recommendations, as appropriate. In addition, the Agency Labor-Management Partnership Committee has established a subcommittee to consider issues associated with the RI program.

The Commission issued a related SRM in April 1998, directing the staff to revise and resubmit the demographic data (to include both the median and average values for resident time, site time, NRC experience, qualified resident time, and relevant non-NRC experience, sorted by each region and all regions combined), and provide a trend analysis of relevant new hire experience covering the last five years. In addition, the Commission directed the staff to provide recommendations to address the high resident attrition rate on an expedited basis (by June 30, 1998), track the reasons inspectors are leaving the RI program, and consider the significant process changes expected following completion of the Integrated Review of the NRC Assessment Processes, the Regional DRP Job Task Analysis, and the results of the OIG's Safety Culture Survey. The Commission also requested that the staff provide annual updates of the demographics data and any recommendations warranted by the updated data.

The updated data, issues, recommendations, and potential changes to the RI program will also be discussed in future newsletter articles. For more information on the resident demographic study or related RI program issues, contact Ron Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Temporary Suspension of the 5-Year Relocation Policy

The Commission approved the FY 1999 - 2001 Budget Proposal for NRC Salaries and Expenses Appropriation in a memorandum dated August 20, 1997. One of the proposed budget reductions was to suspend the resident inspection (RI) staff 5-year relocation policy for two years beginning in FY 1999. The associated footnote stated that "the two-year suspension of the five-year relocation policy could serve as a pilot program to determine whether a longer residence period would be appropriate."

NRC management has decided to implement the suspension of the 5-year relocation policy effective January 1, 1998. This suspension will serve as a pilot program to determine whether a longer resident rotation period would be appropriate. This policy decision should not preclude RI staff from relocating for promotions or management-directed reassignments. This suspension does not apply to resident inspectors who have received their official notification to relocate or have otherwise made relocation commitments.

The staff will evaluate the effectiveness of this pilot program and will consider alternate rotation policies to ensure that the RI staff maintains an appropriate balance between objectivity and expertise. In addition, the upcoming Commission paper on recommended RI program improvements is expected to address this policy matter.

Guidance to Ensure PIM Consistency

Plant Issues Matrices (PIMs) have become an integral part of NRC's licensee performance assessment process. Therefore, the accuracy and consistency of the information contained in the PIM are increasingly important. In response to an SRM, NRR informed the Commission that PIMs will be made available to the public coincident with the Spring 1998 PPRs, while recognizing that continued improvements in PIM consistency were warranted across the regions.

To accomplish this goal, NRR provided initial guidance on PIMs in a memorandum to the Regional Administrators dated October 20, 1997, and provided more detailed guidance in a memorandum dated March 22, 1998. In addition, separate memoranda were issued on March 11 and March 12, 1998, providing guidance on applying PIM template codes for presenting licensee data during Senior Management Meetings.

The memorandum dated March 22, 1998 provided guidance on 21 issues for consistent treatment of items from inspection reports that are placed in PIMs and inspection report executive summaries. The guidance was based on a review of current regional practices, discussions with the regions, and discussions with the Office of Enforcement. It was intended to be consistent with both the Automated Inspection Report System (AIRS) and the Inspection Followup System (IFS). In addition, as part of the integrated review currently being conducted of the NRC's licensee assessment processes, the guidance in these memoranda is expected to be incorporated in future revisions to pertinent regulatory guidance, such as IMC 0610 (Inspection Reports), IMC 0304 (PPRs), and IMC 0303 (IFS).

Several principles were used in the development of these guidelines:

1. Wording for PIM entries should be as close as possible to the Conclusions section of inspection reports and the respective Executive Summaries.

2. There should be consistency in treatment and thresholds for regulatory items (such as NOVs, URIs, NCVs, etc.) across sites and regions.

3. Only items previously documented in the public forum should be in the PIM. Also, there should be no new NRC assessments on PIM entries not previously documented in the public forum.

4. The emphasis in PIM entries should be on the assessment of licensee performance rather than on events. For example, although a declared emergency may be significant to reflect what happened at a site, it does not provide sufficient information in and of itself to assess how well the licensee performed during the event.

5. PIMs should be scrutable to licensees and the public. For example, the PIM format was standardized, some acronyms were spelled out, and a legend was added for the SOURCE, ID, TYPE, and SFA columns of the PIM.

A particularly difficult issue was the treatment of open items in the PIM, such as EEIs and URIs, since the NRC has not arrived at final conclusions on these issues. Nonetheless, these items should be included in the PIM since the issues were already documented in inspection reports, placed on the docket, and the NRC was aware of them when assessing licensee performance. To help alleviate confusion, the PIM should include an explanation with the legend denoting that the NRC had not arrived at a final conclusion on these items.

The guidance improved the format and appearance of PIMs by specifying the use of standardized columns, a standard PIM start date (Oct. 1, 1997), elimination of the "Comment" column, and standardized sorting of PIM entries by SALP functional area in reverse chronological order. In addition, the guidance improved the content of the PIM by specifying guidelines for consistent treatment and thresholds for regulatory items in the PIM, such as NOVs, URIs, NCVs, etc.

Guidelines for consistent treatment of the following items were also established by the guidance:
Escalated Enforcement Issue (EEI), Notice of Violation (VIO), Unresolved Item (URI), Non-cited Violation (NCV), Notice of Deviation (DEV), Enforcement Discretion (ED), Licensee Event Report (LER),

Positive finding, Negative finding, Program strength, Program weakness, Licensing issue, and Miscellaneous (MISC, includes emergency preparedness findings, declared emergencies, etc.)

The use of "positive" and "negative" for individual "findings" supersedes previous guidance to ensure consistency with IMC 0610, which discusses that "strengths" and "weaknesses" should be used where broader conclusions on licensee programs have been drawn from several individual findings. However, the terms "Observation" and "Finding" still should not be used in the PIM.

For more information on the PIM and related issues, please contact Tom Boyce via e-mail (THB) or by calling (301) 415-1130.

Whatever Happened to the JTA?

People have asked me some variation of that question about once a week over the past several months, so I am sure many of you are interested in the answer. The short answer is (in my boss' words) "The JTA is under way but not making way." Actually, the JTA has greatly affected the future of NRC's assessing power reactors and we anticipate even more changes in the future.

But first, before I go into more details, I would like to thank all of you that participated in the JTA of regional DRP jobs. We had an overwhelming response to the original questionnaire, with a total response of 72 percent. Seventy-five percent of the senior residents and a whopping 85 percent of residents returned a questionnaire. It was the information on those questionnaires that provided the basic information on which the contractor (Los Alamos National Labs, LANL) based the rest of the analysis. Those of you that came to the meetings as subject matter experts provided excellent, expert knowledge that added clarity and perspective to the tasks performed by regional DRP personnel. The 12 resident offices that sponsored LANL's "shadowing" of inspectors gave our contractors invaluable real-world insights into your jobs. Again, thank you all.

One of LANL's major recommendations was to "reengineer" the performance assessment process, and that is exactly what a task force of regional and headquarters people is doing right now. We contracted with LANL to help us review and redesign our basic processes for assessing licensees' safety performance. The effort is called the Integrated Review of the NRC's Assessment Processes, which should be well underway this coming summer.

Another recommendation was to reengineer the escalated enforcement process. Although not related to the JTA, the Office of Enforcement made changes to the process that get OE involved earlier and reduce OE's later reviews.

Other recommendations from LANL's JTA are on hold (but not forgotten). We established a group to review LANL's final report and to make recommendations to management on which actions the agency should take. Unfortunately, limited resources and other higher priority work, such as office and regional operating plans, has postponed that review right in the middle of the group's efforts.

So, stay tuned; we remain committed to using the JTA results in improving the effectiveness and efficiency of our inspection and inspection-related processes and intend to complete the JTA effort in 1998. Feel free to contact me with additional comments or questions on the JTA via e-mail (SRS) or by calling (301) 415-1296.

-- Steven Stein, NRR/DISP

Cancellation of the National SRI Counterpart Meeting

After serious consideration, it has been decided to cancel plans for future National Senior Resident Inspector (SRI) Counterpart Meetings due to workload considerations of the resident staff. Although management recognizes the value of these meetings, the impact on site coverage is deemed too significant. NRR and regional management will continue to communicate current issues which affect the resident program during the regional inspector counterpart meetings, through this newsletter, and through routine interface with the resident staff. SRIs are encouraged to provide feedback and share lessons learned with management and their peers through each of these communication mediums.

Inspector Success Stories

The intent of this article is to showcase and share notable inspection experiences and findings between offices, regions, and inspectors. The goal is to make this article a regular feature in the newsletter, but this will not be possible without consistent input and feedback from management and the inspection staff. Please submit future nominations for this article to Ron Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Example 98-01

Upon entering the Emergency Diesel Generator A room following a maintenance outage, the inspector observed a differential pressure gauge lying on the floor near the generator. Attached to the gauge were two 1/4 inch tygon tube sensing lines. One line was connected just downstream of a drain valve on the intercooler heat exchanger. The drain valve was danger-tagged open. The second line was connected downstream of a drain valve on the lube oil cooler. This valve was also tagged open. The inspector wrote down the valve and tag numbers and informed the control room.

The inspector determined that the differential pressure gauge had been installed to allow performance of a preventive maintenance task during the diesel generator outage. The task was to record essential service water differential pressure across the diesel generator engine during post maintenance surveillance testing. After performing the task, workers should have removed the tags, closed and capped the drain valves, and removed the gauge and tubing.

The inspector reviewed the diesel generator piping and instrument drawings and the outage work documents. The drawings showed the piping downstream of the heat exchanger drain valves as non-seismic. Contrary to the instructions on the preventive maintenance task sheet, the preventive maintenance was signed off as completed without the differential pressure gauge being removed and without closing and capping the drain valves.

The inspector discussed his observations with the shift supervisor, who directed proper restoration of the system and initiated a corrective action document. The inspector reviewed the control room logs and concluded that the differential pressure gauge had remained installed with the heat exchanger drain valves open for approximately 14.5 hours after the licensee had declared the diesel generator operable. Subsequently, the licensee issued a Licensee Event Report documenting that the diesel generator had been inoperable due to the credible potential for equipment damage as a result of water spray on adjacent electrical equipment.

During further discussions with the licensee, the resident inspector identified another concern with the licensee's control of test gauges. This concern involved the use of test gauges in general, such as at vents, drains, orifice pressure taps, and pressure points. More specifically, the residents were questioning whether the licensee may have allowed test gauges to be left unattended and in service, without a required impact review and/or formal safety evaluation. The licensee developed an action plan to address the possible ramifications of this issue.

This finding was identified at Callaway by David Passehl. This is an excellent example of applying performance-based inspection techniques by focusing on the performance of safety-significant activities and letting discrepancies or uncertainties lead to the Assessment of root causes and potential programmatic issues. Reference inspection report 50-483/97-20 or contact Larry Yandell (e-mail LAY, (817) 860-8182) for more details on this inspection finding.

Example 98-02

On November 12, 1997, with the plant in operational condition 5 (reactor vessel head removed), control room operators began a core shutdown margin demonstration. This test involved the full withdrawal of twenty control rods (of 185 total) selected by the reactor engineering staff. Operators invoked "special test exception" TS 3.10.3 to permit conduct of this infrequently performed evolution since the test required the mode switch to be placed in the "startup" position, defeating the one-rod-out interlock normally required in operational condition 5. The inspectors verified that all associated TS-required conditions were satisfied during performance of the test.

Operators experienced difficulty withdrawing several of the test-designated control rods. As such, early in the evolution during an initial observation, the inspectors noted that operators appropriately implemented step 4.6 of the stuck control rod procedure, which requires that control rod drive (CRD) hydraulic system drive water pressure be "raised in 50 psi increments" until the rod(s) were freed during single notch attempts, at which time the pressure "should be immediately restored to the normal range" (260-270 psi). However, later in the evolution during a subsequent observation, the inspectors noted that one control rod appeared to withdraw from the core abnormally fast, and determined that drive water pressure was still at an elevated level (approximately 400 psi), indicating that drive pressure was not returned to the normal range following successful initial movement.

Additionally, operators did not return the drive water pressure to the normal range prior to selecting and withdrawing the next rod in sequence. This latter observation indicated that operators inappropriately remained in the stuck rod procedure without first meeting the prerequisite of unsuccessful control rod movement with normal drive water pressure. The inspectors questioned this practice because it appeared to be contrary to the noted procedure guidance, and because continuous rod withdrawals from position 00 to 48 were being performed. In addition, no log entries were made describing the basis for departing from the specific requirements of the abnormal operating procedure.

The inspectors judged that operators acted non-conservatively when they elected not to adhere to the requirements of the stuck control rod abnormal operating procedure, in that they permitted reactivity additions at potentially unknown or uncontrolled rates. Specifically, operators performed an infrequent evolution which added positive reactivity to an essentially new, untested reactor core with several new control rod blades using CRD mechanisms and hydraulic control units which had undergone either complete replacements or large scale maintenance, with their operability not yet fully demonstrated.

Defense-in-depth from a potential fission product release was reduced since one of the principal barriers was degraded (i.e., the vessel head was removed). The one-rod-out interlock was defeated because the reactor mode switch was in "startup" to support performance of the test. Moderator temperature was below 100 degrees F, increasing core reactivity. The rod worth minimizer was inoperable and was being compensated by additional human oversight. Collectively, the inspectors judged that these conditions should have warranted increased vigilance by reactor operators adding reactivity to the core, especially during an evolution that is designed to verify that the reactor will remain sufficiently subcritical with twenty rods fully withdrawn.

The inspectors shared their concerns with the senior reactor operator, the on-duty operations superintendent, the reactor engineering department supervisor, and the quality assurance inspector. Until the inspectors discussed their observations with senior site management on November 13, 1997, the significance of the noted issues went unrecognized by station personnel. Station management demonstrated an appropriate response and took several corrective actions to address the issues, which fortunately did not result in any actual safety consequences.

This finding was identified at Hope Creek by Scott Morris. This effort demonstrated sensitivity to reactivity management and close scrutiny of the abnormal operating procedure, coupled with insistence by the inspector that the issue be addressed at all levels in the organization to get an appropriate response. Reference inspection report 50-354/97-09 or contact Jim Linville (e-mail JCL, (610)337-5129) for more details on this inspection finding.

Example 98-03

The inspector observed a fast start of an emergency diesel generator, performed to satisfy a surveillance requirement, from the diesel room. Shortly after the diesel started, local annunciation for high fuel filter differential pressure illuminated and reflashed, indicative of a condition that was present and then cleared. The inspector alerted the licensee equipment operator monitoring the diesel locally to the annunciation. The operator cleared the reflashing annunciator, but did not check the local gauge for fuel filter differential pressure. The inspector checked this gauge and observed that the differential pressure was 63 psid. The annunciation set point was 48 psid and the operations log specification was less than 50 psid. The inspector alerted the operator to the high differential pressure, and the operator placed a different fuel filter in service, lowering differential pressure to 36 psid.

Equipment operators were required to complete a set of local diesel operating logs about an hour after diesel start, but did not monitor most parameters until then. In the instance described above, in which the local annunciation failed to alert the operator to the off normal condition, diesel failure or automatic shutdown could have resulted without the operators being alerted to the condition in time to correct it.

Based on the inspector's findings, the licensee initiated maintenance to investigate the failure of the local annunciation to remain illuminated and to replace the fuel filter with the high differential pressure. During the course of an investigation conducted after the end of the inspection period, the licensee determined that the fuel filters for this diesel were exhibiting a high rate of increase in differential pressure. Fuel oil particulate analysis, performed on site, showed practically no particulate in the fuel. The licensee sent some fuel samples offsite for analysis, and results were about 3 times the technical specification limit for particulate. The licensee then had a contractor perform filtration on the affected fuel oil storage tank to bring the particulate down below technical specification limits, and investigated the reasons why the licensee's own analytical results for particulate were different from the lab results.

This finding was identified at San Onofre by John Russell. This is a good example of the importance of checking various indications when inspecting operations, independent of what the operators may be checking, and of trying to recognize conditions that are not normal for a given equipment or plant configuration. Reference inspection report 50-361;362/97-27 or contact Larry Yandell (e-mail LAY, (817) 860-8182) for more details on this inspection finding.

PRA Applications Corner

This portion of the newsletter is devoted to sharing inspection experience gained using Probabilistic Risk Assessment (PRA) concepts and methods. Inputs and comments are welcome, and should be submitted to Douglas Coe via e-mail (DHC) or by calling (301) 415-1244.

Common Complaints About PRA by NRC Inspectors

This is a short list of complaints I have heard over the past couple of years. If you have others that are not listed here and would like to see them addressed in a future column, please send them to me via E-mail at DHC.

Complaint #1: *"I can't understand these PRA guys, they speak a different language!"* The concepts used in developing PRA models and the interpretation of their results are a particularly difficult challenge for the PRA analyst to convey to others. However, when pressed, most analysts are capable of explaining PRA results in understandable terms. An inspector should insist on getting understandable interpretations of *why* certain SSCs are important and others are not. This may require the PRA analyst to delve more deeply into the details of the PRA and to work harder to understand the important influences on the results, but they are far better equipped to do this than the average inspector and fundamentally it is an important part of their job.

Complaint #2: *"PRA is so flexible that you can get any answer you want!"* This complaint generally assumes that the "answer" is the core damage frequency (CDF). This is NOT the answer of greatest value to the inspector. A more accurate observation is: PRA is flexible enough to be useful in helping to understand the risk importance of many assumptions that we make about a plant's design and operation. Trying out different assumptions develops an understanding of which of these are most influential to plant risk. Furthermore, the uncertainty of certain assumptions (e.g., component failure probabilities) can be included in the analysis, allowing CDF to be expressed as a distribution of possible values. While this distribution gives a rough indication of the CDF, the real strength of a PRA is its ability to evaluate the changing importances of the contributors to plant risk as assumptions are changed. The bottom line for inspectors? The PRA "answer" that is most useful to you is an understanding of the accident sequences (i.e., combinations of initiating events, component/system failure, and human errors) considered more likely than others, and the associated influential assumptions.

Complaint #3: *"I don't have time to sit down and study the PRA!"* Gaining risk insights is a lot like learning a plant's design basis. Every inspector gains plant-specific design basis knowledge as an ongoing part of the questioning process that occurs during inspections. The same is true of gaining risk insights. Side-by-side with the question "Is this event/condition bounded by the licensing basis?" is the question "How do these events/conditions change the balance of risk contributors to this plant and why?". This latter question may be put to a PRA analyst familiar with the PRA in question. The answer, of course, should be understandable (refer to Complaint #1). Routinely asking this simple risk question will, over time, help develop your risk insights.

Complaint #4: *"Why should I bother with PRA since I can't write a violation against it!"* It is true that PRA cannot be used as a yardstick against which to measure compliance. Furthermore, there is no absolute risk threshold above which you should pursue an issue and below which you should not. Instead, the usefulness of PRA is to expand your perspective beyond your regular instinct and judgement on what is important. More importantly, it can offer reasons WHY some issues are important. So what do you inspect against? If certain combinations of initiating events, system/component failures, and human errors are more likely contributors to core damage, you can inspect against the design basis and regulatory requirements associated with those defense-in-depth features that must fail to allow these accident sequences to occur. It doesn't matter that PRA "goes beyond the design basis." If it helps us understand what is important and why, then we can ensure the associated design basis is met and is adequate in both depth and scope.

An Integrated Approach for Improving PRA Use by Inspectors

One of the stated objectives of the NRC inspection program is to identify and ensure resolution of plant-specific safety concerns. PRA insights can be exploited to improve meeting the inspection program objective of finding and focusing on issues of greatest significance. Accomplishing this programmatically requires improvement in each of the following four areas:

EXPERTISE - PRA information and results are not systematically or consistently documented, as is the UFSAR. Therefore, Senior Reactor Analysts (SRAs) function as "translators" to help you interpret PRA results and use them for (1) inspection focus, (2) evaluation of events and inspection findings, and (3) assessments of licensee use of PRA. SRAs have both senior inspection experience and extensive PRA training. There are two SRAs in each region and two at headquarters. They are your resource and link to the agency's PRA resources.

GUIDANCE - Inspection Manual Chapter 2515 Appendix C was recently rewritten to provide updated guidance on the use of PRA in the inspection program. It includes discussions on the relationship of PRA to defense-in-depth, the integration of PRA with traditional engineering insights, and how to communicate the risk significance of inspection findings to licensees.

TRAINING - A two-week training course in the use of PRA for inspectors is now a requirement in IMC 1245, applicable to all current inspectors as well as a new requirement for inspector qualification. This course (P-111) is designed to provide background and "hands-on" training through exercises and integrated workshops in the application of risk insights in the inspection program. It is currently being offered four times each year.

FEEDBACK - The dissemination of current PRA experience in the inspection program, through this newsletter, presentations by the regional SRAs at inspector counterpart meetings, and other means, provides opportunities to share successes and good ideas, and to avoid pitfalls.

Reactor Inspection Program

NEWSLETTER

Issue 98-02 *September 1998*

The Reactor Inspection Program Newsletter provides a forum to communicate current inspection program issues and activities to the reactor inspection staff. The intent is to ensure that inspectors are aware of current program direction, management expectations, inspection trends, program and policy changes, and lessons learned. Another important objective of this newsletter is to share useful inspection information between offices, regions, and inspectors to promote efficient and consistent inspection activities.

Hard copies of this newsletter have been distributed to each NRC resident inspector's office. The current issue of the newsletter, as well as previous issues, is also available to all NRC employees through the R:\NEWSLTTR directory.

Within the next few weeks, the newsletters will be available on-line via the NRC internal web site. From the NRC internal homepage, select the fourth bullet entitled "NRC Newsletters," and then select the first bullet entitled "Reactor Inspection Program Newsletter." The newsletter homepage allows users to access the latest newsletter as well as previous releases. Hyperlinks are provided to access referenced NRC websites, including SECY papers, Inspection Manual Chapters, Inspection Procedures, and e-mail.

This issue of the newsletter will be last one placed in the R:\newslttr directory. Future newsletters will be available only through the internet or by requesting electronic or hard copies from NRR/PIPB directly.

The NRR Inspection Program Branch (PIPB) prepares this newsletter on an as-needed basis. Comments, recommendations, or proposed topics or articles are encouraged and appreciated. Please direct them to Ronald Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Inside this Newsletter . . .

Suspension of the SALP Program

In a staff requirements memorandum (SRM) dated September 15, 1998, the Commission approved the staff's proposed suspension of the Systematic Assessment of Licensee Performance (SALP) process as discussed in COMSECY-98-024, "Response to Issues Raised Within the Senate Authorization Context and July 17, 1998 Stakeholder Meeting." The Commission noted that the staff needs to ensure that the Plant Performance Reviews (PPRs) effectively monitor and describe NRC assessment of licensees and allocate NRC inspection resources appropriately.

A press release was issued on September 16, 1998, announcing that the SALP program had been suspended. On September 21, 1998, the staff issued a SECY paper to inform the Commission of its plans to suspend the SALP program for an interim period until a new integrated assessment process has been implemented. The staff presented the following implementation plans:

SALP: Suspend the SALP program for an interim period. SALP boards that have convened will complete the SALP process as described in Management Directive 8.6, including issuing SALP reports and holding public meetings.

PPRs: Continue to perform Plant Performance Reviews (PPRs) for each plant at approximately six-month intervals and forward the results to licensees in a letter with the updated Plant Issues Matrix (PIM) and inspection schedule attached that is placed in the Public Document Room. In addition, we need to ensure that licensee performance assessment information is provided consistently in PPR cover letters by issuing more detailed guidance than is currently available in Inspection Manual Chapter (IMC) 0304, "Plant Performance Review." A public meeting will be held at those sites where a public meeting on NRC's assessment of licensee performance has not been held within the last two years. The purpose of the public meeting will be to discuss the results of the most recent PPR. Public meetings will continue to be held for most plants at approximately two year intervals (depending on the timing of the PPRs). More frequent meetings may be held at the discretion of the Regional Administrator based on licensee performance as documented in PIMs, inspection reports, and other publicly available information.

SMM: Perform Senior Management Meetings (SMMs) and the associated screening meetings annually versus semi-annually as directed by the SRM for SECY 98-045 dated June 30, 1998. Accordingly, the first annual SMM will be performed in April 1999.

Implementation guidance was provided to the regions via memorandum dated September 24, 1998. An administrative letter will also be issued to all power reactor licensees notifying them of the suspension of the SALP program. Final recommendations on the SALP program will be provided to the Commission as part of broader recommendations on the new assessment process in early 1999.

For more information on the suspension of the SALP program, contact Tom Boyce via e-mail (THB) or by calling 301-415-1130.

Implementation of the 7-Year Relocation Policy

SECY-98-152 was issued on June 29, 1998, to present the staff's approach to address attrition from the Resident Inspector (RI) Program and other related issues. An Agency Labor-Management Partnership Committee (ALMPC) subcommittee was formed to develop the issues and potential improvements associated with the current RI Program. Item 7 of the ALMPC Subcommittee report noted that it was unclear whether all employees in the RI Program as of January 1, 1998, would go from a 5-year to a 7-year tour limit or just those whose tours would have expired during the pilot period from fiscal year (FY) 1998 through FY 1999.

A memorandum was issued on September 21, 1998 which stated that all current RIs are now considered to have the option of a seven-year versus a five-year maximum tour length (for their current tour). New RI assignments will stipulate a seven-year maximum tour length. This policy decision should not preclude RI staff from relocating for promotions, voluntary reassignments, or management-directed reassignments. EDO Field Policy Manual Number 8, "Resident Inspector Relocation Policy," is being revised to reflect this change in policy. Copies of the September 21 memorandum should have also been dispersed to all affected staff.

Recommended Improvements to the RI Program

Background

In March 1997, the Commission issued a staff requirements memorandum (SRM) directing the staff to develop data regarding the past and present demographics of the NRC resident inspector (RI) population with respect to experience and qualifications. The resultant data was presented to the Commission in SECY-97-285 in December 1997. The data indicated an increase in resident attrition and a decrease in resident experience in the past few years (see "Resident Demographics" article in issue 98-01 for more details). The staff also notified the Commission of its plans to conduct a comprehensive review of the RI Program and recommend necessary improvements in a future paper. SECY-97-285 also included a discussion of the balance between expertise and objectivity, and the attachment provided a summary of the origin and evolution of the RI Program.

In April 1998, the Commission issued a second SRM with three distinct requirements: (1) revise and resubmit the demographic data (to include both the median and average values for resident time, site time, NRC experience, qualified resident time, and relevant non-NRC experience, sorted by each region and all regions combined) and provide a trend analysis of relevant new-hire experience covering the last 5 years; (2) provide recommendations to address the high attrition rate of inspectors from the RI Program, track the reasons inspectors are leaving the RI Program, and consider the significant process changes expected following completion of the IRAP, the Regional DRP JTA, and the results of the OIG's Safety Culture and Climate Survey; and (3) provide annual updates of the demographics data and any recommendations warranted by the updated data.

Discussion

SECY-98-152, "Summary of Issues and Recommended Improvements to the Resident Inspector Program," was issued in June 1998 to address the second part of the SRM described above. The staff stated that the RI Program and the recommended improvements to the program should focus on maintaining the quality and effectiveness of the RI staff in addition to minimizing excessive attrition from the program. Exit interviews with inspectors leaving the RI Program indicated that the primary factors influencing the inspectors' decisions to leave include issues associated with management and organization, quality of life, and compensation. The common reasons that were unique to the RI Program included the 5-year relocation policy and the impact of locality pay on the 3-step pay incentive for RI staff. Attrition data through the first 8 months of FY 1998 seemed to indicate that the rate of external losses from the RI Program is returning to a level consistent with the external attrition rate for the agency as a whole. Annual updates and analysis of the demographic and attrition data will be provided to the Commission, including impacts on the RI Program resulting from changes in the NRC budget and significant changes following completion of the rebaselining of the inspection and assessment programs.

SECY-98-183 was issued in July 1998 to present the revised RI demographic data and analysis as requested by paragraph 1 of the April 1998 SRM. The revised demographic data was consistent with the findings of SECY-97-285 in that the experience level for RI staff is less than it had been in the past. Although the qualified resident time for RIs showed a drop between 1994 and 1997, the relevant non-NRC experience showed a significant increase. The staff concluded that the revised demographic data further supported the recommended RI Program improvements presented to the Commission in SECY-98-152 but had no additional recommendations as a result of the revised data.

Recommended Improvements

The ALMPC Subcommittee on Resident Issues, with representatives from both labor and management, made several recommendations to improve the RI Program in a April 1998 memorandum (attached to SECY-98-152). A summary of the Subcommittee's recommended improvements is included below, along with the staff's plans and/or recommendations for addressing each of the identified concerns. In a third SRM in August 1998, the Commission approved the staff's recommendations subject to a few specific comments (which have been incorporated into the discussion below).

1. *Agency expectations and requirements need to be clearly defined and commonly understood through issuance of program guidance documents.*

A memorandum will be issued by September 30, 1998, to clarify and summarize management's expectations for the RI Program, particularly for those issues discussed below. New guidance will be developed, or existing guidance revised, as necessary to clarify management's expectations for the RI Program, by November 1998. In addition, position descriptions and performance elements and standards for RIs and SRIs will be reviewed and adjusted to ensure that they are consistent with management's expectations and will be implemented by October 1999.

2. *Management needs to assure that adequate numbers of properly trained and qualified response personnel (including resident inspectors) are available.*

Carrying pagers or cellular phones does not add any responsibility or restriction for the individual. Further, RIs are not required to establish residence within any specific distance of the site, nor is there a specific requirement regarding response time to a site that would affect the choice of personal residence.

3. *Site coverage guidance in IMC 2515 should be reviewed and revised to clarify management's expectations.*

The staff is revising IMC 2515 to clarify the purpose of site coverage and define the qualification requirements to provide the necessary coverage.

4. *The efficiency and reliability of telecommunications for resident sites should be brought up to a level commensurate with their program needs.*

The staff recommended that the efficiency and reliability of telecommunications for RI sites receive a higher priority for upgrading, to the greatest extent practical within the constraints of financial management and information technology. The Commission reemphasized in the August SRM that funds should be made available from lower priority activities within the Agency. The Office of the Chief Information Officer has lead responsibility to respond to this request, and progress in this area will be presented in a future newsletter article.

5. *IMC 0227 should be revised to clarify the positive aspects of RI experience with respect to career advancement, while not providing false hopes or expectations.*

IMC 0227 will either be removed from the NRC Inspection Manual or revised to clarify the positive aspects of RI experience and realistic expectations for career advancement opportunities.

6. *There should be no restrictions on the number of site assignments or overall time in the RI Program (this is a continuation of the current practice).*

RIs and management should maintain the flexibility to make job assignments and career decisions in the best interest of both the NRC and the individual, with no restrictions on the number of site assignments or overall time in the RI Program.

7. *The implementation of the 7-year relocation policy pilot program needs to be clarified so that residents and management can plan effectively.*

A memorandum was issued to the regional administrators in September 1998 noting that all current RIs are now considered to have the option of a seven-year vice five-year maximum tour length. See article entitled "Implementation of the 7-Year Relocation Policy" for more details.

8. *There should be sufficient incentives offered to recruit and retain the highest quality individuals to the RI Program.*

The ALMPC Subcommittee made several recommendations regarding RI compensation, including proposed changes in pay policy which would provide full locality pay in addition to the 3-step pay incentive, to provide a 2-step equivalent pay adjustment for promotion to higher graded positions outside the RI program, allow saved pay after 8 years of RI service instead of 4, and provide compensation for time and travel in connection with event response. The staff is evaluating these compensation issues and will provide a SECY paper in October 1998 with its recommendations. Compensation issues and related improvements to the RI Program will be discussed in a future newsletter article.

For more information on the resident demographic study or related RI Program issues, contact Ron Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Inspection and Assessment Program Improvement Plans

Rebaselining the Inspection Program

One of the more significant initiatives committed to by the EDO in his August 25, 1998, memorandum to the Commission is an effort to make the core inspection program more effective, efficient, and risk informed. A high level task action plan detailing the major steps to be taken in accomplishing this initiative has been provided to the Commission. The current plan is to use a team approach, including representatives from all major internal stakeholders (including NRR, Research, and the regions) to complete this effort. The effort is being managed by the Inspection Program Branch from NRR and will be overseen by a senior management panel consisting of regional administrators and office directors. The inspection initiative is also being closely coordinated with similar efforts ongoing for reactor assessment and enforcement.

In general, the team's approach will be to (1) determine the overall scope of the core inspection program based upon a risk ranking of inspection areas and comparison against available performance assessment indicators; (2) assess what specific inspection procedure changes would be required to implement the proposed program scope; and (3) propose program changes to the Commission. The staff will present the proposed program changes to the Commission sometime in January of 1999.

Input from stakeholders will be solicited throughout the process, and the task group will keep stakeholders informed of progress and the potential impact of the resultant changes. For more information on the inspection program rebaselining efforts, contact Jeffrey Jacobson via e-mail (JBJ) or by calling (301) 415-2977.

Assessment Program Improvements

The NRC has scheduled a four-day public workshop (September 28 to October 1, 1998) to discuss improvements to the NRC performance assessment process. Significant participation by both the industry and the NRC is expected, including senior resident inspectors, regional branch chiefs, DRP directors, and regional administrators. The workshop agenda included a discussion of the following background information; concepts previously developed by the NRC (IRAP), the industry (NEI) proposal for improving performance assessment, and an integrated proposal to utilize a regulatory oversight framework that centers around cornerstones of safety. In addition, fundamental issues such as the appropriate threshold for NRC interaction with licensees and the means for maintaining independent regulatory oversight were to be discussed. Decisions reached on the fundamental issues were to establish the attributes against which the workshop participants would develop specific details for improvement to the performance assessment and regulatory oversight processes.

Issue breakout sessions are to include:

A. General Policy Issues: Safety Performance Expectations/ Regulatory Oversight Process
B. Use of Risk Insights in Assessment
C. Use of Performance Indicators and Integration with Inspection Results
D. Role of Enforcement in Regulatory Oversight/ Range of NRC Actions/ Communications

Detailed cornerstone development breakout sessions will determine the objectives, building blocks, and performance measurement criteria for each cornerstone (i.e., performance indicators and necessary inspection areas).

For further information (including results of the workshop), please contact one of your regional representatives that participated in the workshop. Preregistrants include:

Region 1: Hub Miller, Bill Axelson, Bill Hehl, Larry Doerflein, Glenn Meyer, Scott Morris
Region 2: Jon Johnson, Bruce Mallett, Bob Haag, Bobby Holbrook
Region 3: Jim Caldwell, Geoff Grant, Mel Leach, Tom Kozak, Charles Phillips
Region 4: Jim Dyer, Ken Brockman, Bill Johnson, Bill Jones, Jim Sloan

The staff plans to brief the Commission on the results of the workshop in October 1998. The staff will then develop a proposed integrated assessment process and present it to the Commission in January 1999. The current plan is to implement the new assessment process in June 1999. Progress on the development and implementation of the integrated assessment process will be included in future editions to this newsletter.

Year 2000 (Y2K) Readiness Program Audits

As follow-up to NRC Generic Letter 98-01, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants," dated May 11, 1998, the members of the Instrumentation and Controls Branch (HICB), NRR, will conduct sample audits at 12 plant sites of the licensee's plant-specific Y2K readiness program implementation. The audits are expected to take 3 to 4 days and are scheduled to be completed between September 1998 and January 1999. The objectives of these audits are:

(1) To assess the effectiveness of licensee programs for achieving Y2K readiness and addressing the impact of the Y2K problem on compliance with the terms and conditions of their license and NRC regulations and continued safe operation of the plant.

(2) To evaluate program implementation activities in order to assure that licensees are on schedule to achieve Y2K readiness in accordance with GL 98-01 guidelines.

(3) To assess licensee contingency planning for addressing risks and unanticipated problems associated with events resulting from Y2K concerns.

The audits will include a review of relevant documentation and interviews with selected utility personnel. Examples of relevant documentation are: facility specific Y2K program plan, assessment plan, inventory listing/database (including possibly separate inventories of embedded systems), project tracking, reviews and evaluations of regulatory considerations including 10 CFR 50.59 changes, and QA procedures related to the Y2K program. Where possible, direct observation of testing and validation of remediated systems and equipment will be included.

Plants selected for the audits were determined based on their initial response to GL 98-01, input received from resident inspectors in response to Y2K program status survey, 3 plants in each region, nuclear steam supply system vendor type, age of the plant, and use of computers at the facility. The plants selected for the audits are: Monticello, Seabrook, Brunswick, Davis Besse, Hope Creek, Limerick, Wolf Creek, Watts Bar, Waterford, North Anna, WNP-2, and Braidwood.

The audits will be conducted by two HICB staff members and a member of the regional Division of Reactor Safety staff may provide additional assistance. The licensee, region, and resident inspector will be notified of the audit at least a month in advance. The audit reports will be made publicly available within 30 days of completion of the audit.

For more information on the Y2K audits, contact Matt Chiramal via e-mail (MXC) or by calling (301) 415-2845.

Reactor Program System (RPS) Status

The Reactor Program System (RPS) was initiated in 1995, when NRR recognized the need to gain regulatory and administrative program improvements and efficiencies. NRR initiated the program with OCIO and the regions to integrate ten antiquated mainframe systems, serving the reactor program in headquarters and regions, into one integrated system using modern client/server technology. Many of these older systems did not effectively interface or share information resulting in inefficiencies that impede effective program management. RPS will collect information once, at the source, and integrate information in one data base which can be correlated and analyzed.

The RPS project provides an integrated methodology for planning, scheduling, conducting, reporting and analyzing most of the functions performed by the staff involved with NRR programs in headquarters and the regions. This includes all inspection, licensing and regulatory activities. RPS can be accessed through an agency standard personal computer or via modem dial-in. The RPS modules are being developed and deployed incrementally. RPS training was conducted in the regions before each of the implementation phases. User feedback from the training sessions and from system use has been and will continue to be used to enhance the system. Supplemental training will be provided in the future as necessary to support the deployment of additional modules.

Inspection Planning (IP), Inspection Reports Tracking System (IRTS), Inspection Procedure Authority System (IPAS), Systematic Assessment of Licensee Performance

(SALP), REPORTS, and the Staff file were deployed in the regions on the client/server platform in March 1998. These modules incorporated and streamlined the functions previously performed by the Master Inspection Planning System (MIPS) and the mainframe versions of the IRTS, IPAS, and SALP systems. The replacement of MIPS by RPS/IP simplified the ability to manage inspection resources. New reports have been developed to assist in planning, scheduling and monitoring inspection activity.

The second RPS deployment was originally going to be the Automated Inspection Reporting System (AIRS). AIRS, as originally designed, has been put on hold until the site connectivity issue is resolved by the OCIO and has been replaced by the Item Reporting (IR) and Analysis Module (AM). IR and AM (a.k.a. IRAM) incorporate three of the main functions in AIRS: item reporting, analysis capability, and the closeout of inspection procedures.

The first phase of IR was deployed on September 28, 1998, and is now the central repository for inspection reports and independent items for Part 50 power reactors. Users can create Plant Issues Matrices (PIMs), item lists, and open item reports, as well as close out inspection procedures and TIs. All Part 50 power reactor items entered into the Inspection Follow-up System (IFS) since it became operational on October 1, 1992, and all open items irrespective of their opening date, were downloaded into IR. Current PIM information in WordPerfect documents and MS Access databases will not be back fitted into IR. IFS will continue to be used for all other inspection items related to non-power reactors and vendors until the completion of phase two of IR in early 1999. The use of IR will significantly decrease the effort required to enter IFS items and maintain the PIM, and eliminate discrepancies between the two since they will both use the same data fields in a single database. In most cases this data will be entered from the sites.

AM provides both standard reports and graphs, and ad hoc query and report generation capability. Starting this month, the NRR staff will be working with the regions to identify and develop additional standard reports to support regional and headquarters requirements as well as reports that will support the Operating Plan process.

The development of RPS was a large contributor in the decision to decommission SINET. NRR will be working with the OCIO staff to ensure a smooth transition of the remaining SINET functions to the client/server environment, including the deployment of PCRITS in the regions in FY 1999. PCRITS will provide for on-line submission of actual hours worked. PCRITS will use the RPS database to provide an on-screen RITS sheet which contains the procedures and TACS assigned to an individual for the reporting period. Eventually this function will be incorporated into STARFIRE.

The Licensing and Other Planning module (LOP) and PCRITS will be deployed during 1999. These modules will replace the Workload Information and Scheduling System (WISP), Safety Issues Management System (SIMS), as well as the mainframe version of Technical Assignment Control System (TACS) and Regulatory Information Tracking System (RITS). RPS will also interface with other agency-standard systems, such as Allegation Management System (AMS), and the Enforcement Action Tracking System (EATS), ADAMS and STARFIRE.

For more information on the uses and status of RPS, contact your regional RPS counterpart, Janet Lanning, Region I; Steve Vias, Region II; Paul Pelke, Region III; or Larry Yandell, Region IV; or Mike MacWilliams, NRR, via e-mail (MLM4) or by calling (301) 415-1877.

PRA Applications Corner

This portion of the newsletter is devoted to sharing inspection experience gained using Probabilistic Risk Assessment (PRA) concepts and methods. Inputs and comments are welcome, and should be submitted to Douglas Coe via E-mail (DHC) or by calling (301) 415-1244.

Risk-Significance of Engineering and Maintenance Backlogs - An Inspection Approach

The Inspection Program Branch of NRR (PIPB) was recently asked by Region I management if an assessment could be made of the risk-significance of the engineering and maintenance backlog for both units of the then shutdown Beaver Valley Power Station. This task also provided an opportunity for PIPB to explore new ways of using risk insights for inspection. The approach taken was to assign each backlog item to the PRA-modeled system(s) it could potentially influence and to rate its potential for affecting the system reliability (high, medium, low). During the one-week inspection period, more than 540 individual backlog item summaries were examined and cataloged on a computer-based spreadsheet for those items not scheduled for completion before plant restarts. Those systems that ranked high in both risk importance and potential for adverse effect on system reliability were examined in greater detail. The ability to list all items from the various backlogs for each system, grouped by their potential impact, provided insight into the accumulation of problems and issues with the most risk-significant of these systems. Even more important, although a quantitative risk impact cannot be determined, inspection techniques such as this can better show the cumulative influence of multiple system design and reliability issues. Then inspectors can better use their plant systems knowledge and understanding of the plant's PRA dominant accident sequences to determine how these various issues might be contributing to an increased likelihood of certain of these sequences. This is another example of how to apply the guidance in IMC 2515 Appendix C to get valuable risk insights for inspection planning and focus. See inspection report 50-334/98-03, 50-412/98-03 or contact Douglas Coe at (310) 415-1244/ DHC for further information.

Reliability Study - Auxiliary/Emergency Feedwater System: 1987-1995 (NUREG/CR-5500, Vol. 1)

This recently issued AEOD report notes several useful insights for inspectors based on a review of more than 1100 unplanned auxiliary/emergency feedwater (AFW) demands. First, a loss of AFW suction sources, though rare, is a contributor to total system failure that is often not modeled in PRAs. During the period reviewed, one such event occurred. During this event, the suction shifted to the service water system due to an isolated condensate storage tank. The AFW flow control valves then became fouled with sludge and clams, causing significant flow reduction to the steam generators. A more recent 1998 occurrence is also noted involving a condensate controller failure that allowed high temperature condensate into the surge tanks that serve as the primary suction source for the AFW system, causing a potential loss of NPSH. The report recommends being particularly sensitive to plant activities that could affect AFW suction sources, especially for common suction path and shared water source designs. Second, most inspectors are aware of the historically higher expected failure potential of turbine-driven AFW pumps, relative to other designs. The report itemizes some of the most important contributors to turbine start failures. These were listed as overspeed trips caused by worn, loose, or misaligned trip linkages; water accumulation in the supply lines; and contaminated governor hydraulic oil. It is also emphasized that inspectors should recognize that adequate reliability also includes the means (e.g., training and procedures) to recover from such trips, whether recovery is from the pump or control room. Finally, the report notes that little data exists on failures during longer run times because such failures (during shutdown conditions or surveillance testing) are often not reportable in LERs. Therefore, inspectors should be alert for any history of such failures that might indicate a greater AFW system unreliability than estimated by the licensee, and possibly used for setting performance criteria under 10CFR50.65 (Maintenance Rule). Copies of this report can be obtained by calling the NRC publications order desk at (202) 512-2409.

Today's quote for risk-informed thinking - from the late Dr. Richard Feynman, then a member of the President's Commission investigating the Challenger disaster: *"[It was] a kind of Russian roulette . . . [the shuttle] flies [with O-ring erosion in its booster rockets] and nothing happens. Then it is suggested therefore, that the risk is no longer so high for the next flights. We can lower our standards a little bit because we got away with it last time. You got away with it, but it shouldn't be done over and over again like that."* Translation for reactor inspectors: Don't feel comfortable that something has a low probability of failure just because it hasn't failed yet. Degraded conditions that have not actually caused a functional failure can, over time, increase the total probability of failure dramatically as the number of demands (or operating time) increase. Reactors have greater defense-in-depth than the space shuttle, therefore significant reactor risk increases often come from either common cause failure potentials or an accumulation of individual increases in the likelihoods of system failures, initiating events, and operator errors. IMC 2515 Appendix C recommends looking for issues linked to each other by accident sequences that could lead to core damage. Reflecting on the above quote should help us realize that anyone dealing with a complex and potentially hazardous technology must constantly guard against complacency born of past success.

Inspector Success Stories

The intent of this article is to showcase and share notable inspection experiences and findings between offices, regions, and inspectors. The goal is to make this article a regular feature in the newsletter, but this will not be possible without consistent input and feedback from management and the inspection staff. Please submit future nominations for this article to Ron Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Example 98-04 (BWR- GE 4)

An NRC inspector performed a visual assessment of completed work activities shortly after an I&C technician replaced a hydraulic control unit (HCU) accumulator high water level switch that had failed during surveillance testing. The inspector identified a potential operability concern with the adjacent HCU. The solenoid housing on the directional control valve was positioned so that its electrical connector and cable would interfere with the limit switch actuator of the inlet scram valve. If the scram valve operated while this condition existed, the connector and/or cable of the directional control valve could be damaged, or worse, could impede the operation of the inlet scram valve.

The inspector immediately discussed the issue with a licensed operator. The operator indicated that the solenoid housing was designed to pivot or swivel and was most likely bumped and swiveled forward while operations personnel worked to isolate the adjacent HCU. The licensed operator immediately swiveled the solenoid housing away from the limit switch actuator without any discussion with operations management or the system engineer on what effects this may have had on the equipment. Subsequently, operations management and the system engineer concluded that his actions were appropriate.

The next morning the inspector visually inspected the remaining HCUs and identified three more examples of solenoid housings or cables that were in contact with the limit switch actuator of the inlet scram valve. Through interviews, the inspector identified that the operator had discussed the issue with the operations shift supervisor (OSS). The OSS concluded that the issue was isolated due to the work performed on the adjacent HCU, and did not question whether the HCU was operable in this condition. The inspector also identified through interviews that all 89 HCUs were isolated during the Fall 1996 refuel outage and concluded that the solenoid housings could potentially have been mispositioned since October 1996.

The system engineer, with the assistance of GE representatives, performed an operability determination and concluded that the four HCUs in question would have performed their safety function (scram) if required. The worst consequences would be: (1) the solenoid housing would be displaced when the scram valve actuated resulting in a small primary containment leak which could be manually isolated; and/or (2) the directional control valve wiring would be damaged causing a short in the directional control valve control system, thereby, disabling operators ability to insert or withdraw any of the control rods. The licensee identified that GE SIL No. 3, issued July 31, 1973, discussed the problem and recommended that the cables be secured to the frame leg of the HCU after the housing had been properly positioned. Subsequently, the licensee implemented the recommended actions of the SIL.

Plant personnel demonstrated a lack of attention to detail by repositioning the solenoid housing during work activities and Operations personnel demonstrated a lack of attention to detail in not identifying this issue during their plant tours. The OSS also did not take a generic approach when presented with the issue, nor did he question whether the HCU was operable. Finally, the licensee did not respond to the GE SIL by taking the recommended actions.

This finding was identified at Duane Arnold by Michael Kurth. This is an example of the importance of assessing the effects of work activities on adjacent equipment, assessing operations personnel's actions and response to deficiencies found in the plant, and assessing the licensee's implementation of corrective actions for identified deficiencies. Reference Inspection Report No. 50-331/98003 or contact Roger Lanksbury (e-mail RDL, (630) 829-9631) for more details on this inspection finding.

Example 98-05 (PWR, Westinghouse 4-Loop)

During the performance of an Engineering inspection, an error was found in the Net Positive Suction Head calculation for the ECCS Safety Injection Recirculation pumps, which are internal to the containment. The inspector reviewed the Updated Final Safety Analysis Report and the Emergency Operating Procedure for transfer to long term recirculation. The design basis of the internal recirculation pumps, as stated in the UFSAR, was for one recirculation pump to be capable of achieving the flowrate essential to satisfy core cooling and containment spray requirements, via a system configuration internal to containment.

The inspector noted that in 1993 and again in 1997, the licensee identified an instrument inaccuracy phenomena related to adverse conditions (high radiation or high pressure) in the containment during an accident. Vendor and licensee calculations showed that as much as a 30% error could exist with the indication from the recirculation flow transmitters, located inside containment. The EOP was revised to incorporate the potential effects of this error for the core and containment spray flow transmitters. Thus, the prior acceptable criteria of 600 gpm indicated core flow and 1300 gpm indicated containment spray, were changed to 900 and 1950 gpm respectively. These adverse errors however, could be in either direction (i.e. + or - 30%).

The change had resulted in the operators establishing a higher pump flowrate in accordance with the EOP. An increased flowrate results in higher required NPSH. However, the inspector noted that a 50.59 safety evaluation had not been performed to evaluate the effect of this change. Additionally, the NPSH calculation of record did not evaluate the potential for the increased flowrate. The adverse containment instrument error had essentially created inconsistencies between the UFSAR, the calculation of record, and the implementing procedure (EOP).

The inspector noted that if only one recirculation pump was available in response to the event, the adverse containment numbers would have directed the operators to bring the recirculation sump water external to containment to the suction of the Safety Injection pumps, due to NPSH considerations. However, this alignment was inconsistent with the design basis of the system. The Licensee acknowledged the inspector's finding, made a 50.72 report, and performed an extent of condition analysis.

An EOP review team was formed by the licensee and identified similar concerns: (1) very high errors in reactor coolant system pressure indication, resulting from adverse containment environment, could have prevented the operators from achieving the optimal goals of the EOP accident mitigation strategies, (2) when containment pressure channel errors were considered, achieving a post-spray containment pressure of 2 psig may not have been possible, therefore, the previous containment spray termination criterion of 2 psig may not have been achievable, (3) pressurizer level control would not have been maintained in accordance with the EOP by automatic control, as the no-load Tavg setpoint was 37%, which was below the SI re-initiation criteria of 42% for adverse containment conditions. The licensee developed and implemented several physical hardware modifications and numerous procedural enhancements to ensure the capability of systems to function within the guidelines of the EOPs.

This finding was identified at Indian Point 2 by Frank Arner, a DRS specialist inspector. This is a good example of the importance of considering the analyzed design basis when reviewing changes to system operating characteristics and EOPs; the licensee had only looked at potential instrument errors in one direction, which had prevented the identification that adverse environmental conditions had created challenges to the EOPs. Reference inspection report 50-247/98-08 or contact Frank Arner (e-mail FJA, (610) 337-5194) for more details on this inspection finding.

Example 98-06 (PWR, Westinghouse 2-Loop)

As part of routine inspections after a plant shutdown to repair a Reactor Coolant Pump (RCP) seal, the inspector performed radiological surveys of various areas in the auxiliary building. The inspections were performed shortly after the Residual Heat Removal (RHR) system was placed in service for cooldown. The inspector identified several areas with elevated radiation dose rates which were not posted as radiation or high radiation areas.

Shortly after operators placed the RHR system in-service, the inspector questioned Radiation Protection (RP) personnel whether they would be performing radiological surveys due to the RHR system being in-service and/or any other changes in plant configuration. The inspector was informed that only the routine weekly surveys were planned and the next survey was scheduled to be performed 5 days later. The inspector was not satisfied with this response and was concerned that radiation levels in the plant could potentially change significantly between planned surveys. The inspector subsequently performed surveys using the NRC-issued RamGam in areas where RHR system piping traversed.

The following conditions were identified:

• One containment piping penetration room (posted as less than 5 mrem/hr) was found to have readings of 20 mrem/hr at the entry way and the highest reading RHR pipe was monitored at greater than 80 mrem/hr at 30 cm from the pipe. This area was subsequently posted as a high radiation area after more thorough licensee surveys confirmed the inspector's findings. Highest readings recorded in subsequent days were >180 mrem/hr at 30 cm.

• Several RHR pipes near the Containment Spray (CS) pumps, a general access area, were monitored at greater than 25 mrem/hr at 30 cm. Elevated readings were also identified on the CS piping due to RHR dead leg sections of piping which provide a suction path for the CS pumps in post-accident operation. Minor leakage past the normally closed RHR/CS isolation valve resulted in increased readings on the CS piping sections. This area was subsequently posted as a radiation area after more thorough licensee surveys confirmed the inspector's findings.

• The RHR valve gallery which was posted as 4 mrem/hr at the entry gate was found to have readings of greater than 14 mrem/hr at the gate. Inside the valve gallery, readings of >100 mrem/hr were measured. This area was subsequently posted as a high radiation area after more thorough licensee surveys confirmed the inspector's findings. The highest readings recorded in subsequent days were >350 mrem/hr at 30 cm from one RHR pipe.

The RP group's failure to perform surveys following placing RHR in-service was apparently due to a false sense of security based on past outage experience. In past outages, injecting hydrogen peroxide into the RCS and keeping the RCPs running for a few days into an outage helped minimize the effects of crud bursts. Since this was a short 7-day outage, these actions were not taken and RP did not recognize that higher radiation levels could result.

This finding was identified at Kewaunee by Julio Lara. This is an example of the importance of objective and independent follow-up, in this case doing independent confirmation of posted radiation levels in areas of the plant where RCS cooling system piping may traverse. Reference Inspection Report No. 50-305/98002 or contact Roger Lanksbury (e-mail RDL, (630) 829-9631) for more details on this inspection finding.

Reactor Inspection Program

NEWSLETTER

Issue 99-01 January 1999

The Reactor Inspection Program Newsletter provides a forum to communicate current inspection program issues and activities to the reactor inspection staff. The intent is to ensure that inspectors are aware of current program direction, management expectations, inspection trends, program and policy changes, and lessons learned. Another important objective of this newsletter is to share useful inspection information between offices, regions, and inspectors to promote efficient and consistent inspection activities.

Hard copies of this newsletter have been distributed to each NRC resident inspector's office. The current issue of the newsletter, as well as previous issues, is also available to all NRC employees on-line via the NRC internal web site. From the NRC internal homepage, select the fourth bullet entitled "NRC Newsletters," and then select the first bullet entitled "Reactor Inspection Program Newsletter." The newsletter homepage allows users to access the latest newsletter as well as previous releases. Hyperlinks are provided to access referenced NRC websites, including SECY papers, Inspection Manual Chapters, Inspection Procedures, and e-mail.

The newsletters are also available in WordPerfect through the R:\newslttr directory, however, this issue of the newsletter will be last one placed in the R:\newslttr directory. Future newsletters will be available only through the internet or by requesting electronic or hard copies from NRR/PIPB directly.

The NRR Inspection Program Branch (PIPB) prepares this newsletter on an as-needed basis. Comments, recommendations, or proposed topics or articles are encouraged and appreciated. Please direct them to Ronald Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Inside this Newsletter . . .

Clarification of Expectations for the RI Program

Issues related to the Resident Inspector (RI) Program were addressed in SECY-98-152, "Summary of Issues and Recommended Improvements to the Resident Inspector Program," dated June 29, 1998 (see "Recommended Improvements to the RI Program" article in issue 98-02 for more details). The Commission approved the staff's recommendations, subject to specific comments, via staff requirements memorandum (SRM) dated August 21, 1998. As noted in the SRM, some issues require short-term action, such as a clear definition and common understanding of the Agency's expectations and requirements for the RI Program. To address this concern, a clarification memo was sent to the regional administrators on October 13, 1998 entitled "Resolution of Long-standing Concerns Associated With the Resident Inspector Program."

The following is a summary of the issues discussed in the memo:

1. Although **pagers or cellular phones** are frequently made available to RI staff and others who may be designated to cover a site, carrying these devices does not impose additional responsibility or restrictions for the individual. There should be no restrictions on personal activity when off duty while carrying a pager or phone, except, if called upon by the region, the RI must make management aware of any **fitness-for-duty** limitations and response time capability. Although IMC 1245 does not require inspectors to be **respirator qualified**, the region should maintain the status of inspection, radiological, and respirator qualifications for each inspector fulfilling the emergency response role.

2. Resident inspectors are not required to establish residence within any specific distance of a site, nor is there a specific requirement regarding **response time** to a site that would reasonably affect the choice of personal residence.

3. **Site coverage** by an IMC 1245 qualified inspector should not be interrupted for more than 3 consecutive work days. Exceptions will be approved by the Regional Administrator. Additionally, provisionally qualified inspectors may provide site coverage with regional approval.

4. The Individual Development Plan and Career Counseling Program offered by the Office of Human Resources remain the processes used by NRC as aids for **career advancement**. IMC 0227, "Career Paths for Resident Inspectors," has been deleted from the Inspection Manual to avoid ambiguity.

5. There are no restrictions on the number of site assignments or overall **time in the RI Program**, providing that RI performance remains acceptable. Hence, RIs and management should maintain the flexibility to make job assignments and career decisions in the best interest of both the NRC and the individual.

6. As discussed in the memorandum to the regional administrators dated September 21, 1998, maximum **RI tour lengths** have been changed from five to seven years.

It is important that NRR, NMSS, and regional management communicate their expectations to the RIs and reflect them in their program guidance and procedures. Regional practices should not conflict with RI Program guidelines and the clarifications noted in the October 13 memorandum. A significant revision of the RI Program guidance, which will clarify the aforementioned issues, will be completed in concert with the rebaselining of the inspection and assessment programs as discussed further in the article entitled "Regulatory Oversight Process Improvements." In addition, position descriptions and performance elements and standards for RIs and SRIs will be reviewed and adjusted to ensure consistency with the program guidance by October 1999.

For more information regarding the clarity of management expectations for the RI Program, contact Serita Sanders via e-mail (SXS5) or by calling (301) 415-2956.

Changes to Resident Inspector Compensation Policy

The staff's evaluation and planned actions for resident inspector (RI) compensation policy were presented to the Commission in SECY-98-281 dated December 2, 1998. The Commission approved the proposed staff actions in a staff requirements memorandum (SRM) dated February 2, 1999.

The planned actions include:

(1) *Modifying the current pay policy for RIs to provide for full locality pay in addition to the special salary schedule beginning in fiscal year (FY) 2001.*

This change in policy will restore a consistent 3-step differential between RI pay and pay received by regional and headquarters counterparts. The 3-step pay incentive has eroded in recent years due to the advent of locality pay. **In a nutshell, this policy change will increase pay for all RIs by an amount equal to the "rest of the US" rate, currently at 5.42%.** Although funding is not allotted for FY 2000, the staff will explore reprogramming options during the upcoming budget cycle which might allow earlier implementation of the revised RI pay policy.

(2) *Modifying the current policy related to eligibility for saved pay provisions when transferring out of the RI Program to require a total of 6 years versus 4 years in the RI Program.*

The current 4 year provision was developed to coincide with the 5-year RI relocation policy. Under those provisions an RI would have to complete one year less than a full tour in the RI Program in order to receive saved pay. In the August 21, 1998 SRM, the Commission stated that all current RIs should have the option of a 7-year versus a 5-year maximum tour length and that new RI assignments will stipulate a 7-year maximum tour length. Accordingly, the staff plans to modify the saved pay policy to require a minimum of 6 years of service in the RI Program in order to qualify for saved pay (for all new RI assignments after the implementation date of the policy change). The other provisions of the saved pay policy would remain unchanged.

(3) *Continuing the current policy related to relocation bonuses.*

NRC employees will continue to receive relocation bonuses when entering, transferring within, or leaving the RI Program consistent with the current provisions. Relocation bonuses vary by RI site location based on recruitment difficulty and geographic economic factors, ranging from 10 to 25 percent of base salary. The staff believes that the relocation bonus policy has effectively minimized the economic disincentives associated with relocation.

(4) *Continuing the current policy regarding promotions to positions outside the RI Program.*

When an employee is promoted from a position paid in accordance with the RI special salary schedule to an NRC position outside the RI Program paid in accordance with a different salary schedule, the rate of pay is set to either meet or exceed the rate of pay under the RI special salary schedule. RIs are not eligible for the 2-step pay equivalent increase afforded employees promoted to a higher graded position within the same salary schedule. Similarly, relocation bonuses are not paid to employees who elect to leave the RI Program for a promotion. The staff believes that there are sufficient pay incentives for RI staff who elect to leave the RI Program via competitive promotion.

For background information on recent developments in the RI Program, see SECY-97-285, "Discussion of Resident Inspector Demographics and the Balance Between Expertise and Objectivity," SECY-98-152, "Summary of Issues and Recommended Improvements to the Resident Inspector Program," and SECY-98-183, "Submittal and Analysis of Revised Resident Inspector Demographic Data." Several recent newsletter articles have also discussed RI Program issues.

For more information regarding RI compensation or related changes to the RI Program and policy, contact Ron Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Communicating the Results of Plant Performance Reviews

In September 1998, the Commission directed the staff to suspend the SALP program, and to ensure that information on licensee performance assessment is provided to stakeholders consistently in Plant Performance Reviews (PPRs). Licensees and other stakeholders were informed of the suspension of the SALP program in the NRC's Administrative Letter 98-07 of October 2, 1998. In memorandums dated December 15, 1998 and January 29, 1999, NRR provided detailed guidance to the regions to communicate the results of PPRs. The memoranda required that more of the assessment information currently prepared for PPRs be sent to licensees annually with the PPR letters. The purpose of including this information is to increase confidence in the NRC by making its assessment processes more scrutable to licensees, the public, and other stakeholders.

Timing and Conduct of Meetings.

PPRs are held semi-annually in each region. The next PPRs are scheduled in early 1999 to align with the annual Senior Management Meeting (SMM) process. Letters communicating the results of the PPRs will be issued to all licensees shortly after the 1999 SMM screening meetings. Public meetings will be scheduled for most plants approximately every 24 months and will focus on the results of the PPRs, so that public meetings will be held with approximately half of all licensees each year. Regional branch chiefs will conduct the public meetings for most plants, with additional regional management involvement as appropriate based on licensee performance or the level of interest expressed by members of the public and other stakeholders. "Mid-cycle" PPRs will be held approximately six months after the Spring 1999 PPRs and their primary purpose will be to adjust NRC inspection resources, if appropriate, based on licensee performance.

Level of Detail of Assessment Information.

In the SRM approving the suspension of the SALP program, the Commission directed that PPR letters shall include performance trend information. This means that additional assessment information must be provided beyond that previously contained in PPR letters. The PPR letters will be the primary means to communicate assessment information until a new assessment process is implemented; therefore, the level of detail must be sufficient for all NRC stakeholders, including state and local officials and members of the public, to understand licensee performance. However, consistent with their purpose, the letters for the mid-cycle PPRs will only provide a level of detail of assessment information that is sufficient to make clear the reasons for any changes in inspection effort, similar to current PPR letters. For planning purposes, the new assessment process that is currently under development is also anticipated to communicate the information used to assess licensee performance on an annual basis.

Format and Content of PPR Letters.

A sample letter for communicating the results of the Spring 1999 PPRs was provided in the NRR guidance memorandum of December 15, 1998. The sample letter was revised based on regional comments and reissued in the January 29 guidance. In general, PPR letters must include an examination of long term trends, particularly since the last SMM, with emphasis on performance trends during the most recent six months. Performance overviews should be provided as well as performance in each functional area (e.g. operations, maintenance, engineering, plant support), and the discussion should be supported by issues that are documented in a Plant Issues Matrix (PIM) that is attached to the letter. Changes to the NRC's inspection schedule should be consistent with the discussion in the PPR letter. As noted earlier, mid-cycle PPRs will only provide information focused on making clear the reasons for any changes in the NRC's inspection schedule in the appropriate functional areas. PIMs and the NRC's inspection schedule for the next 6-8 months are included as attachments to all PPR letters.

For more information on the PPR program or the suspension of the SALP program, contact Tom Boyce via email (THB) or by calling 301-415-1130.

Regulatory Oversight Process Improvements

SECY-99-007 was issued on January 8, 1999, which forwarded to the Commission staff recommendations for reactor oversight process improvements. The paper presented recommendations for improving the inspection, assessment, and enforcement processes, and included a transition plan for implementing these recommended changes. The paper also informed the Commission of the staff's intention to continue the suspension of the systematic assessment of licensee performance (SALP) process until the new assessment process had been successfully implemented. The staff briefed the Commission on the proposed reactor oversight process improvements on January 20, 1999.

Background

The concepts developed and presented in this Commission paper represent a culmination of staff effort to develop improvements to the assessment and inspection processes. This effort started in September 1997 as the integrated review of the assessment process (IRAP), with the IRAP recommendations published in SECY-98-045. Following Commission, industry, public, and congressional feedback on the IRAP recommendations, the staff undertook initiatives to develop additional improvements to the assessment process, and to develop recommendations for improvement to the inspection program. Staff commitments to develop and implement a risk-informed baseline inspection program and to improve the plant assessment process were documented in the Chairman's Tasking Memorandum dated August 25, 1998.

A four-day public workshop was held from September 28 to October 1, 1998 to facilitate stakeholder feedback and input during the development of these process improvements. During this workshop, consensus was reached on a framework for regulatory oversight, which was based on seven cornerstones of safety. The workshop participants also reached general agreement on defining principles which provided the rules for the continued development of the details of the oversight processes.

Following the public workshop, three task groups were organized to continue and complete the work started at the workshop. The technical framework, inspection, and assessment task groups were formed with Headquarters and regional experts in inspection and assessment, including resident inspectors, regional branch chiefs, and senior reactor analysts. The activities of each group have been closely integrated and all groups have interfaced frequently with the public and industry through a series of regularly conducted public meetings. These three task groups were also closely integrated with the Office of Enforcement, with recommended oversight process improvements consistent with enforcement policy revisions.

Objectives and Concepts

The overall objectives in developing changes to the regulatory oversight processes were to: (1) ensure that plants continued to be operated safely, (2) improve public confidence by increasing the predictability, consistency, and objectivity of the oversight processes, (3) increase the effectiveness and efficiency of regulatory oversight by focusing agency and licensee resources on those issues with the most risk significance, and (4) reduce unnecessary regulatory burden as the processes become more effective and efficient.

As described in SECY-99-007, the staff developed the following concepts to meet these objectives:

- A Regulatory Oversight Framework was developed as a hierarchical structure to which improvements to oversight processes such as inspection, assessment, and enforcement could be developed. Under this framework, cornerstones of safety were identified that provide the foundation for ensuring that the NRC's overall mission of public health and safety is met.

- For each cornerstone of safety, performance indicators were identified which provide reasonable assurance that the cornerstone objectives are met. Overall, twenty performance indicators were recommended to cover the seven cornerstones.

- A risk-informed scale was developed (the Conceptual Model for Evaluating Licensee Performance Indications) to be applied to performance indicator results. This scale was used to establish thresholds for the performance indicators (PIs) and define a licensee response band, an increased regulatory response band, a required regulatory response band, and an unacceptable performance band.

- In addition to PIs, a risk-informed baseline inspection program will be performed for all plants, regardless of licensee performance. The intent of this baseline inspection program is to obtain further information in those areas where needed to supplement the insight obtained through the PIs. The baseline inspection program will also periodically assess the licensees problem identification and resolution program and verify the accuracy of the PIs.

- A risk-informed approach was used to identify the necessary areas to inspect so that inspection findings, integrated with performance indicator information, could be used to evaluate whether the cornerstone objectives are met. The staff is continuing to work on developing methods for applying a scale to inspection findings which would be equivalent to the performance indicator scale.

- A single assessment process was developed within the framework approach. A review system was developed that provides for continuous, quarterly, mid-cycle, and annual end-of-cycle evaluations of the assessment information generated by PIs and the baseline inspection program. The process considers the PIs and inspection results to arrive at an overall conclusion regarding licensee performance. Based on the conclusion, an action matrix will be applied to determine the appropriate regulatory response and level of communication with the licensees and the public.

- Changes to the enforcement policy will be made to reflect the recommended changes to the inspection and assessment processes. For example these changes may include revising the definitions and thresholds for severity levels to align them with the process and guidance developed for evaluating the safety significance of inspection findings.

Transition Plan

In addition to the above recommendations for improvement to the regulatory oversight processes, the staff proposed a plan and schedule to transition from the current processes. Highlights of the transition plan include:

- January to February 1999 - Thirty day comment period on the scope and concepts for improvement to the oversight processes.

- March 31, 1999 - Requested final Commission approval to continue with process development and implementation.

- February to May 1999 - Complete preparation of draft inspection and assessment program documentation and procedures.

- June to December 1999 - Perform a pilot program of the new regulatory oversight processes at two sites per region.

- January 2000 - Implement the new oversight processes for all plants.

- April 2000 - Hold the final Senior Management Meeting.

- April 2001 - Perform the first annual assessment for all plants under the new process.

In addition, the transition plan contains several planned activities to train NRC staff on the concepts and details of the revisions to the oversight processes. Members of the NRC staff, as well as members of the public and industry, are encouraged to submit comments during the 30-day comment period.

Progress on the continued development and implementation of improvements to the regulatory oversight processes will be included in future editions to this newsletter. Copies of SECY-99-007 are available on the SECY Index on the NRC Internet homepage. For more information on the regulatory oversight process improvements, contact Michael Johnson via e-mail (MRJ1) or by calling (301) 415-1241.

The Importance of Clear Writing

As a Federal agency, it is our responsibility to write concise, honest, and easily understood documents. By doing this, we help to ensure the public's understanding of NRC goals, actions, policies, and regulations. The NRC's plan to improve public communications, in response to Direction Setting Issue (DSI) 14 "Public Communication Initiatives," was presented to the Commission in SECY-98-089.

NRC's Commitment to Using Plain Language

The NRC's commitment to using plain language in agency documents was reiterated to all NRC employees in Yellow Announcement No. 8 on January 22, 1999. This commitment stems from a memorandum from President Clinton to the heads of executive departments and agencies of June 1, 1998, and applies to all new agency documents that "explain how to...comply with a requirement you administer or enforce." For the NRC, such documents should include all rulemaking documents, Commission papers, correspondence, memoranda, and other agency communications to licensees and others. Meeting this goal will be challenging given the technical nature of the nuclear industry.

Vice President Gore sent a follow-up memorandum and implementation guidance to agencies on July 28, 1998. This memorandum contains guidance with examples for writing plain language documents, including --

✓ Organize your material to serve the needs of your reader.

✓ Write sentences in the active voice and use "you" and other pronouns, especially in correspondence.

✓ Use common, everyday words in short sentences (15-20 words).

✓ Use easy-to-read design features like lists, tables, graphics, and "white space" to open up dense blocks of text.

Additional Guidance

To assist agency writers in complying with the Plain Language initiative and the goals of DSI 14, the NRC has established a comprehensive Plain Language Action Plan internal web site: (http://www.internal.nrc.gov/NRC/PLAIN/index.html). The site contains the memorandums from President Clinton and Vice President Gore, as well as a broad variety of agency guidance documents and links to external Plain Language web sites. The site also includes excerpts from the "Clear Writing" course, a 3-day workshop which emphasizes the three steps in the writing process: planning, writing, and editing. Course participants will also learn how to write for a specific purpose; write for a specific audience; gather material in a logical manner; edit a document for style; and edit a document for grammar, punctuation, and mechanics.

Results of Regulatory Impact Feedback

How do licensees rate the effectiveness of NRC regulatory activities? Here's what they told us as part of our regulatory impact feedback process!

- 63% of licensees rated the effectiveness of communications between NRC staff and licensees as favorable. Resident inspectors and regional management received the highest percent (90%) of favorable comments regarding their communication effectiveness.
- 87% of licensees rated inspector professionalism favorably. Resident inspectors received the highest percent (93%) of favorable ratings for professionalism.
- The topics receiving the most comments from licensees were: professionalism of NRC inspectors (20%), effectiveness of communications (26%), timeliness of licensing actions (6%), SALP (5%), and clarity of the 10 CFR 50.59 process and design and licensing bases (2%).

As you can see, much of the feedback from utilities that we regulate has been positive.

What is the source of this information? The NRC actively solicits feedback and comments from utility licensees regarding the impact on licensees operations caused by regulatory activities. This was performed as a one-time effort in 1981 and 1989. After the 1989 study, the Commission directed the staff to develop a process to obtain feedback on an ongoing basis and to report the results of this feedback to the Commission annually.

The staff developed a process in use today whereby NRR and regional managers solicit comments from licensees during routine visits to reactor sites. This feedback is documented, evaluated annually, and used as the basis of a Commission paper. NRR has recently added a new source of feedback to the regulatory impact process. The Institute of Nuclear Power Operations now acts as a sponsor and coordinates meetings between plant managers and the Chairman and the EDO to discuss regulatory issues. There was one such meeting at the end of 1997 and two meetings in 1998. NRR is currently documenting the process in a Management Directive.

Open channels of communication between the NRC and utilities are particularly important during this time of significant change. More information on licensees' feedback may be found in the latest Commission paper on Regulatory Impact (SECY-98-270, November 1998) and is available on the Internet (with other SECYs on NRC's internal server).

For more information on the regulatory impact process, contact Dave Allsopp via e-mail (DKA) or by calling (301) 415-3073.

PRA Applications Corner

This portion of the newsletter is devoted to sharing inspection experience gained using Probabilistic Risk Assessment (PRA) concepts and methods. Inputs and comments are welcome, and should be submitted to Douglas Coe via E-mail (DHC) or by calling (301) 415-1244.

An Example of Risk-Informing Inspection Scope

The Individual Plant Examinations for External Events (IPEEEs) are providing some useful insights into plant risk and should be considered when establishing the scope for an inspection. For example, the Three Mile Island IPEEE identified that the risk associated with an external flood is nearly twice that of all internal events (LOCAs, LOOPs, SGTRs, etc) combined. Three Mile Island is sited on a low-lying island in the middle of the Susquehanna River. The Final Safety Analysis Report (FSAR) describes several actions that must be implemented to mitigate the effects of the river flooding.

The Resident Inspectors recently used the results of the licensee's IPEEE and conducted an extensive review of the licensee's external flooding preparations. The inspection identified that the licensee flood mitigation program was generally effective. However, concerns were identified with the condition of a flood seal located between the reactor building and tendon gallery that could result in a common cause failure of the auxiliary feedwater system and required corrective action.

The resident inspectors did an excellent job using risk information to establish the inspection scope. External events such as fires, floods, and seismic events can be major risk contributors and should not be ignored when selecting "risk informed" inspection focus areas. Additional information regarding the findings of this inspection effort can be obtained in Inspection Report 50-289/98-03 or by calling Wayne Schmidt, Senior Resident Inspector, TMI, at 717-948-1165.

Today's quote for risk-informed thinking -

Minimizing the shock - U.S. author James Baldwin (1924-87) wrote *"Most of us are about as eager to be changed as we were to be born, and go through our changes in a similar state of shock."* We are now expecting a period of change in the inspection program. Recognizing that change is most "shocking" to people when goals are not kept clearly in mind, we might ask: what is the goal of the inspection program? One principal and lasting goal is to identify deficiencies that pose a significant risk to the public, if they exist. This can help reveal not only the level of public risk exposure, but can also help us assess a licensee's capability to self-identify and correct deficiencies commensurate with significance. How can PRA help? In many cases, it can help by elevating our thinking of significance into the logically consistent framework of core damage accident sequences. It can help to increase the likelihood of finding significant issues by improving our integrated-plant thinking, such as using accident sequences as an input to inspection planning. When we find a deficiency, it can help to expand our inspection scope to other areas where further deficiencies may, collectively, present a more significant risk. It can help us to minimize the "shock" by staying focused on the goal.

Another constant in the equation of change should be our use of the word "risk". The word risk should never be used loosely to mean whatever we want it to mean at the time. When something is called "risk-significant" we should always be prepared to state why, based on the accident sequences being affected. Statistician S. Kaplan writes *"When the words are used sloppily, concepts become fuzzy, thinking is muddled, communication is ambiguous, and decisions and actions are suboptimal".* If used with understanding, the word "risk" can carry meaning and substance. Otherwise, it can obscure and misinform. Use it wisely. Use it precisely.

Inspector Success Stories

The intent of this article is to showcase and share notable inspection experiences and findings between offices, regions, and inspectors. The goal is to make this article a regular feature in the newsletter, but this will not be possible without consistent input and feedback from management and the inspection staff. Please submit future nominations for this article to Ron Frahm, Jr. via e-mail (RKF) or by calling (301) 415-2986.

Example 99-01 (BWR- GE 6)

A review of the licensee's molded case circuit breaker (MCCB) testing program was performed to determine if the implementation of site procedures was consistent with industry and NRC standards. During the review, several deficiencies were noted with the test methodology and identification of valid test failures. The inspector's review resulted in a suspension of all MCCB testing and redevelopment of the MCCB test program. The more significant issues were as follows:

- The use of an incorrect test cable size resulted in faster trip times on the test stand than would occur if the MCCB was installed in the plant. This is of concern because the faster trip times could have masked breaker coordination issues between the load breaker and supply breaker.

- Failure to perform a low current trip test to ensure the MCCB does not prematurely open. This is of concern because in-rush current could open the breaker if the instantaneous trip set point is too low.

- Excessive current and pulse duration were noted during instantaneous trip testing. The licensee pulsed MCCBs up to 2 seconds and at 200 percent of the MCCB current rating. Industry guidance recommends a pulse duration of 0.083 to 0.166 seconds at 125 percent of the MCCB current rating. This is of concern because excessive duration and current could degrade the MCCB.

- Failure to verify if a thermal or instantaneous trip of the MCCB occurred during testing. At the inspector's request, the licensee attempted to reset a MCCB following an instantaneous trip test. Had the MCCB tripped on instantaneous overcurrent, the MCCB would have immediately reset. However, the MCCB would not reset, indicating that the thermal trip device had opened the MCCB. This is of concern because the licensee's test program had not verified the capability of the instantaneous trip mechanism.

The licensee did not regularly exercise MCCBs to increase reliability. Infrequent cycling of MCCBs could cause the breaker to fail on demand due to hardened grease. During testing, the inspectors noted valid test failures which were not recorded by the licensee. The licensee believed that MCCB trips occurring while establishing the test current were not credible, even though the test parameters had been met. In some cases, the licensee cycled the MCCB numerous times (preconditioned) prior to recording the test data. This is of concern because the licensee used the test results to modify the scope of the breaker test program. Since fewer failures were identified, less testing was scheduled to be performed.

This finding was identified at Clinton by Carey Brown. This significant finding reinforces the need to verify that procedures are reflective of industry standards committed to by the licensee and that test personnel are properly implementing the intent of the procedure. Reference Inspection Report No. 50-461/98-011 or contact Roger Lanksbury (e-mail RDL, (630) 829-9631) for more details on this inspection finding.

Example 99-02 (PWR, West. 4-Loop)

An NRC inspector was present in the control room during the shutdown of the unit and reviewed the licensee's control of maintenance activities and their consideration of the risk associated with the removal of equipment from service during the entry into a forced outage. The inspector focused on the equipment configuration which existed while the plant was in Mode 4 (Hot Shutdown), noting that one of the two required off-site electrical sources had been declared inoperable prior to the initiation of the shutdown.

About three hours after the plant had entered Mode 4, operators had removed a service water (SW) system MOV from service to perform testing; the MOV was a technical specification (TS) valve that automatically isolates the safety related SW heat loads from the non-safety related SW heat loads during an accident. The TS required that the condition be corrected within 24 hours or for the plant to be shut down within the next six hours. The inspector subsequently identified that the licensed operators had not identified or entered the applicable TS Action Statement when the valve was removed from service. When the inspector brought the matter to the operating crew's attention, they administratively entered the correct Action Statement, and work on the valve was completed within the allowed time.

Shortly after the plant had been shut down, the inspector reviewed the equipment configuration status while the plant had been in Mode 4 and observed that, in addition to the SW MOV, the licensee had removed the motor-driven emergency feedwater pump from service. The inspector noted that the licensee's forced outage plan had scheduled this equipment removal from service for Mode 5 (Cold Shutdown) performance, but personnel errors and work control process deficiencies resulted in the conduct of the activity during Mode 4. The inspector questioned the licensee concerning the risk associated with this unplanned Mode 4 configuration.

Because the licensee did not have a risk model for specific Mode 4 configurations, they performed two separate risk assessments: one using software that was developed from an at-power PRA and the other using an outage risk model developed for Mode 5 conditions. The at-power model was bounding for the Mode 4 condition and showed that the subject plant configuration would not have been allowed for planned maintenance due to the resultant risk increase related to the preclusion of establishing successful alternate reactor cooling. The Mode 5 risk model determined that the unplanned configuration did not result in an appreciable increase in risk. The inspector concluded that, although neither model was specifically developed for the observed Mode 4 condition and that the risk increase could not readily be quantified, an avoidable increase in risk had occurred.

In response to the inspector's findings, the licensee implemented several corrective actions, including increased training on the importance of the plant maintenance schedule, equipment operability, and the requirements for performing risk assessments for planned maintenance activities. Additionally, the licensee planned to incorporate general risk assessment guidance into the work control procedure.

This finding was identified by Ray Lorson at Seabrook Generating Station. It is a good example of an inspector being risk sensitive to different plant conditions with irregular equipment configurations, and the importance of assuring that the licensee is properly planning, tracking, and performing work during those plant conditions. Reference Inspection Report 50-443/98-09 or contact Ray Lorson (e-mail RKL, (603) 474-3589) for more details on this inspection finding.

Reactor Inspection Program

NEWSLETTER

Issue 99-02 *December 1999*

The Reactor Inspection Program Newsletter provides a forum to communicate current inspection program issues and activities to the reactor inspection staff. The intent is to ensure that inspectors are aware of current program direction, management expectations, inspection trends, program and policy changes, and lessons learned. Another important objective of this newsletter is to share useful inspection information between offices, regions, and inspectors to promote efficient and consistent inspection activities.

Hard copies of this newsletter have been distributed to each NRC resident inspector's office. The current issue of the newsletter, as well as previous issues, is also available to all NRC employees on-line via the NRC internal web site. From the NRC internal homepage, select the eighth bullet entitled "NRC Newsletters," and then select the first bullet entitled "Reactor Inspection Program Newsletter." The newsletter homepage allows users to access the latest newsletter as well as previous releases. Hyperlinks are provided to access referenced NRC websites, including SECY papers, Inspection Manual Chapters, Inspection Procedures, and e-mail.

The NRR Inspection Program Branch (IIPB) prepares this newsletter on an as-needed basis. Comments, recommendations, or proposed topics or articles are encouraged and appreciated. Please direct them to Serita Sanders via e-mail (SXS5) or by calling (301) 415-2956.

Inside this Newsletter . . .

Message From The EDO

My tenure thus far as EDO has been marked by change, some of which has directly impacted our regional offices. Over the past 18 months, we have developed incremental improvements to our existing processes for overseeing the performance of operating reactor plants. These changes include improving our process for carrying out Plant Performance Reviews, and also eliminating the Senior Management Meeting Process ("Watchlist") and Superior Performer recognition. In addition, as you know, we have just completed pilot testing a revised reactor oversight process that is intended to provide greater objectivity, clarity, and consistency to our activities in a manner that is more risk-informed and performance-based. Importantly, these changes have been developed and are being piloted with significant contributions and valuable feedback from inspectors and regional management. As we continue our improvement initiatives, effective communications among inspectors and managers will be critical, fundamental to our success and yet difficult to achieve. In order to communicate effectively, all parties need to listen as well as speak. As we continue to implement the new reactor oversight process, I commit on behalf of management to listen to your feedback.

To-date, the results of these efforts have reinforced my opinion that the NRC possesses a superb staff whose abilities and accomplishments are among the finest in government. Our inspectors bring outstanding knowledge, experience, and instincts to bear in accomplishing our public safety mission. It is my belief that the revised reactor oversight process will enable us to perform our primary mission with a better relationship to our outcome goals of maintaining safety; enhancing public confidence; increasing effectiveness, efficiency, and realism of our processes and decision making; and reducing unnecessary regulatory burden.

There is a clear paradigm shift that is inextricably linked to the revised reactor oversight process. This involves increasing our focus on safety significant issues and a corresponding lessening of the NRC's involvement in issues of minimal safety significance. The new oversight process has been designed to focus and apply agency resources on those issues that have a greater impact on public health and safety. To achieve this goal in a consistent and more objective manner, tools such as the Significance Determination Process and Risk Information Matrices have been developed to assist inspectors. Your input on the effectiveness of these tools is critical. And once agreed to, these tools should provide part of the structure for how you do your job. Training on the new reactor oversight process is being provided to all of our regional inspectors to enable them to better understand and implement the new process.

As we conclude the pilot program and move towards the start of implementation at all sites, I would like to congratulate you on our considerable success thus far. As this process continues to evolve, and as we proceed in developing and implementing other important changes such as risk-informing Part 50, I challenge you to continue to provide feedback and remain engaged in helping define the direction in which the agency is moving.

William Travers

Reactor Oversight In Transition

The reactor oversight process is currently undergoing major changes of its policies, processes, procedures, resources, etc. This, in part, is due to the the nuclear industry's improved safety performance. NRC's oversight of plant operations has had a significant impact on spurring enhancements made by industry. As the knowledge of risk insights has become more prevalent, the NRC has continued to risk inform its processes. The newly revised reactor oversight process, has been pilot tested in each region. Several, new features are key elements of the revised reactor oversight process:

1. During the pilot portion of the process, licensees report the results of the performance indicators (PI) to the NRC on a monthly basis. After initial implementation, the PIs will be reported on a quarterly basis.

2. The risk-informed baseline inspection program establishes the minimum inspection activity received by all licensees. It also covers those risk-significant attributes of licensee performance not covered by PIs and verifies the accuracy of PI data collection and analysis.

3. Thresholds have been established for licensee safety performance. Performance falling beyond these thresholds would warrant increased NRC attention on a gradual approach.

4. The Enforcement Policy has been revised to be consistent with the revised reactor oversight process. For example, the number of cited violations and the amount of civil penalty will not be an input to the assessment program; however, the issue that led to the enforcement action will be considered in the assessment.

5. Finally, guidelines have been established to more clearly identify and respond to declining licensee safety performance.

How can I learn more about the new process?

To assist all NRC employees in gaining a better understanding of the revised reactor oversight process the Transition Task Force (of the revised reactor oversight program) has developed two web pages.

The first web page: **www.nrc.gov/NRR/OVERSIGHT/index.html** has been created to provide information to the public. This web page contains frequently asked questions; a schedule of Commission and public meetings; copies of SECY Memorandums related to the new program; pilot plant assessment overview, results, and information about the program; copies of meeting transcripts; a listing of all performance indicators; and inspection reports, which are linked to the pertinent PIM data.

A second web page: **www.internal.nrc.gov/NRR/OVERSIGHT/index.html**, lists frequently asked questions of interest to NRC employees, the names of NRC and others who are working and have worked on the Transition Task Force, a list of training course dates, and other useful information.

One last word

This is a time of *transition* in our agency. Our aim is to improve the effectiveness and efficiency of our oversight process by focusing agency and licensee resources on those issues that are most risk significant. To make the new process work, we all must familiarize ourselves with the underlying principles that have led to this new oversight process. It is important to view change in our process in light of the agency's performance goals, which were established to focus efforts on fulfilling the agency's mission: 1) maintaining plant safety, 2) enhancing public confidence, 3) increasing effectiveness and efficiency and realism of our decision making processes, and 4) reducing unnecessary regulatory burden.

Arnold Glasow once said, " ...the trouble with the future is that it usually arrives before we are ready for it." Well, the future is here and we must be well prepared to deal with it.

The Pilot Program

A 6-month pilot program to implement the revised reactor oversight process at two sites per region has just been completed. The objective of the pilot program was to (1) test the PI reporting process, risk-informed baseline inspection program, significance determination processes, and revised assessment and enforcement programs; (2) collect lessons learned; and (3) identify those changes needed to be made prior to initial implementation. The pilot program commenced on May 30, 1999, and ended on November 27, 1999. The sites participating in this pilot program included: FitzPatrick, Salem, Hope Creek, Harris, Sequoyah, Prairie Island, Quad Cities, Cooper, and Fort Calhoun. These participating sites will continue operating under the revised reactor oversight process. Initial implementation for all plants is scheduled for April 2, 2000.

Criteria were established to enable the staff to evaluate the results generated by the pilot program. These criteria address many aspects and attributes of the new process and are being used to help determine if the revised reactor oversight process meets the agency's performance goals.

Also, during the pilot program an advisory committee, the Pilot Program Evaluation Panel (PPEP), reviewed the performance of the pilot program to provide the agency with an independent assessment of the readiness of the revised reactor oversight process for full implementation. The PPEP consisted of management representatives from the NRC and industry, public interest groups, and state regulatory authorities. Recommendations for initial implementation, will be presented to the Commission by the PPEP.

A Commission paper outlining the results of the pilot program and the staff recommendation for initial implementation will be prepared by the TTF in February 2000 to support a Commission meeting in late February.

A lessons learned workshop is scheduled to be held in Washington D.C., during the week of January 10, 2000. During this public workshop, NRC staff, industry representatives, and the public will meet to discuss lessons learned from the pilot program, identify those issues that require resolution prior to initial implementation, and identify possible resolutions for consideration prior initial implementation scheduled to begin April 2, 2000.

The program office staff has just completed working with the regions to revise procedures to address feedback received during the pilot program and to incorporate lessons learned. The staff plans to issue all of the oversight process procedures during the next few months.

Revised Reactor Oversight Process - Training

Two NRC staff training sessions will be held in each region (except RIV) and at the technical training center. The training started in November 1999 and is designed to train the NRC staff on the new process. Additionally, there will be one public workshop held in each region, starting in late February 2000 to present the new oversight process to the public and industry.

Training Workshops Schedule

To prepare the regional staff for initial implementation of the revised reactor oversight process, a five-day training course - Reactor Inspection and Oversight Program (G - 200) is being offered in each region. This course provides an overview of the oversight process and topics include PIs, SDP process, inspection procedures, inspection planning, inspection reports, assessment and enforcement. All inspectors are required to attend training sessions to become cognizant of the basic fundamentals of the revised reactor oversight process. Contact Lee Miller (LRM@nrc.gov or (423) 855-6510) at the TTC if you have questions.

Training Schedule
(Classes Remaining)

Region	Location	Breakout Sessions
Region I		
3/13-17/00	Hilton	HP & EP
4/3-7/00	RI Office	None
Region II		
1/24-28/00	TTC	None
2/14-18/00	Fed. Ctr	None
Region III		
2/28-3/3/00	RIII Office	None
Headquarters		
5/15-19/00	TBD	None
Chattanooga, TN		
2/7-11/00	TTC	PS,HP,EP
4/17-21/00	TTC	PS,HP,EP

(Note: The January course held at the TTC is limited to Region II staff and the February session is limited to 30 people.)

The breakout sessions give practical application of the significant determination process for the indicated disciplines. It should be noted that the SDP for the reactor area is covered in each Reactor Inspection and Oversight Program (G-200) course presentation.

PRA/SDP Applications

This portion of the newsletter is devoted to sharing inspection experience gained using Probabilistic Risk Assessment (PRA) concepts and methods, including the proposed Significance Determination Process (SDP) for reactor initiating event, mitigation system, and barrier cornerstones. Inputs and comments are welcome, and should be submitted to Douglas Coe via E-mail (DHC) or by calling (301) 415-1244.

CDF vs. CCDP- What's the fuss? How can the SDP find both?

Recently in the development of the SDP, a question arose regarding whether the change in annualized (i.e., averaged over a year) core damage frequency (CDF) or the conditional core damage probability (CCDP) is the appropriate risk "yardstick" for inspection finding significance. That is, should the inspection finding significance focus on the long-term "averaged" risk impact of a licensee's performance deficiency, or on the short-term "actual" increase in risk that includes routine maintenance and operational equipment outages that may have occurred in combination with the identified deficiency?

Core damage frequency (CDF) is the expected frequency of occurrence of a core damage event, given in units of events per year. Core damage probability (CDP) can be calculated by (average CDF) X (time over which this average CDF occurred). Conditional CDP (CCDP) is the probability that the core will be damaged given a specific plant condition or configuration, i.e. (specific CDF) X (time). CCDP may also be defined as the probability of core damage at an "instant" in time, given that a plant event has occurred. In Figure 1, the solid line represents the configuration-specific CDF values that vary with time, such as for planned on-line equipment outages.

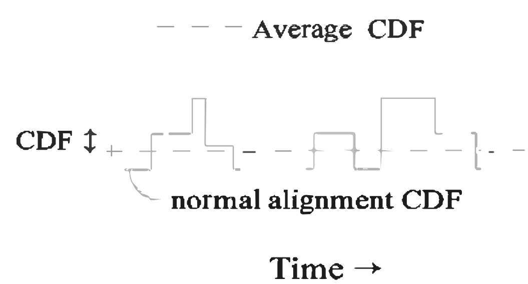


FIGURE 1

The lowest CDF shown by the solid line represents the CDF with all plant equipment in normal alignment for power operation. Thus, if the dotted line represents the actual average CDF, the *area* under the solid line equals the *area* under the dotted line, which is the CDP for a given time period.

Let's imagine that licensee performance deficiencies cause an additional unexpected equipment unavailability and results in a change in CDF over a period of time. This is shown in Figure 2 by the gray "box", whose area is the change in CDF caused by the deficient condition multiplied by the time the deficiency existed.

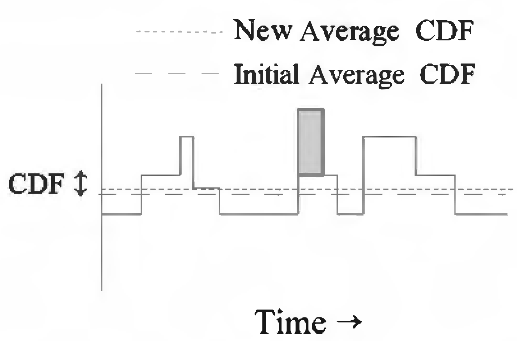


FIGURE 2

It can be shown that the difference between the two dotted lines in Figure 2 (the change in average CDF) is exactly equal in magnitude to the area in gray, because the gray area simply added to the existing area under the solid line. Thus the gray area, in CCDP terms, is *numerically equal* to the change in average CDF, shown by the difference between the two dotted lines in Figure 2.

A deficiency represented by the gray area could have occurred at any time or plant configuration. Figure 2 shows a deficiency causing equipment unavailability occurring during a routine maintenance outage of other equipment and thereby causing a higher CDF than if it had occurred during a period of normal equipment alignment.

Thus the risk significance of the deficiency can be viewed in at least two separate ways. First, it could be the *additional* CCDP (the gray area in Figure 3) that is added to the nominal core damage probability (the cross-hatched area in Figure 3) for the time period. This is the plant configuration risk and is sometimes called the Incremental CCDP (ICCDP).

Second, the risk could also be viewed as a change to the expected CDF for the year. This is illustrated in Figure 4 as the change to expected CDF caused by the unexpected deficiency averaged over *all* expected plant maintenance configurations in one year (shown in Figure 4 as the gray area and the *numerically equal* change in average CDF).

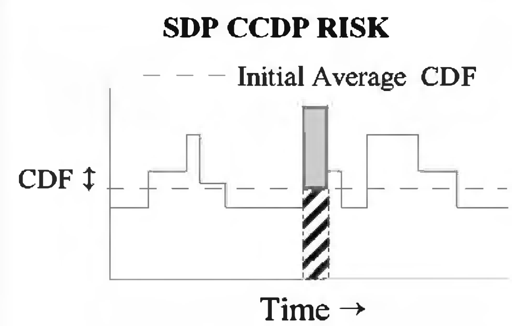


FIGURE 3

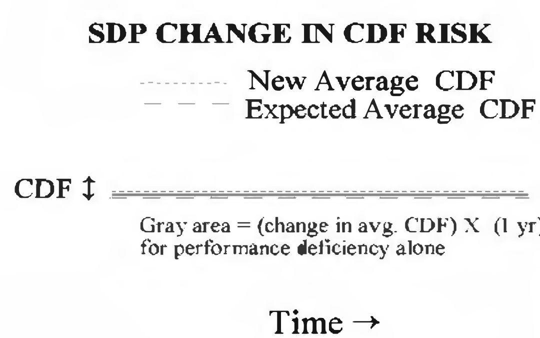


FIGURE 4

An important assumption being made in Figure 4 is that any maintenance configuration that exists at the same time as a deficient condition is entirely routine and not related to any performance deficiency. If they were, the total full plant configuration can then be considered "unexpected" and thereby add to the expected average CDF.

The question now becomes whether the risk significance of the deficiency should be characterized by the CCDP risk or the change in CDF risk. The SDP Phase 2 worksheets will estimate CCDP risk (gray area in Figure 3) if the total plant configuration is used as the input. Alternatively, the worksheets will estimate the change in CDF risk (difference between the dotted lines in Figure 4) if only the co-existent deficiencies are used as the input, since the unavailabilities used for the remaining mitigation equipment already include the likelihood of being out of service for routine expected maintenance.

Clearly, when a deficiency is found to be coincidental with routine maintenance, the first approach described above (CCDP) will generally render a higher risk significance. However, the new reactor oversight process described in SECY-99-007 uses the change in average CDF as the risk metric for reactor safety cornerstone Performance Indicator thresholds. The first objective of the SDP is to estimate the risk significance of inspection findings in a manner comparable to the PIs so that both would have equal "weight" for equal "color" when combined in the NRC Action Matrix. Furthermore, if the NRC assessment of licensee performance is influenced in a random manner by whether allowable maintenance was or wasn't in progress at the time, then the NRC Action Matrix (described in SECY 99-007A) would not necessarily produce consistent results, either for a given plant across time, or between similar plants for similar issues.

But CCDP is one of the principal risk metrics that the NRC Accident Sequence Precursor program uses to identify risk-significant events and conditions. It may be appropriate to use an estimated CCDP risk, based on best-available information and conservative but reasonable assumptions, to help determine the level of initial follow-up inspection effort warranted by potentially risk significant operating events or identified conditions. Work is ongoing to explore how such an approach might fit within the revised reactor oversight program.

A final decision on how the revised reactor oversight process will use CDF and CCDP won't be made until after the end of the pilot reactor oversight program. Until then, pilot-plant inspectors have been asked to use the SDP to determine *both* the change in annualized CDF due to licensee performance deficiencies *and* the CCDP associated with actual plant configurations.

Today's quote for risk informed thinking:
"It doesn't have to be perfect - it just has to work!"
- Anonymous

Changes To Enforcement

The enforcement policy has been revised to be better integrated with the new reactor oversight process and address prior weaknesses that existed in the enforcement policy. For example, the enforcement process has been criticized as not being risk informed, causing licensees to give high priority to correcting issues of low risk significance at the expense of more risk-significant items and being difficult to understand, overly subjective, inconsistent, and unpredictable.

Appendix F, "Interim Enforcement Policy for Use During the Reactor Oversight Pilot Program" to the Enforcement Policy was issued on August 9, 1999. This Appendix divides violations into two groups. The first group is violations that can be evaluated under the Significance Determination Process (SDP). The second group is violations that result in actual consequences, violations that the SDP does not evaluate, and those violations that may impact the regulatory process for oversight of reactors.

I. Violations Evaluated by the Significance Determination Process

Violations that the SDP evaluates as of very low significance (i.e., green) will normally be documented in inspection reports as non-cited violations (NCVs). However, a notice of violation (NOV) will be issued for three of the exceptions, which are described in Appendix C of the Enforcement Policy. The Appendix C exception for repetitive violations does not apply for the pilot plants.

Violations that the SDP evaluates as risk significant (i.e., white, yellow, or red) will be subject to action as determined by the Action Matrix and will result in an NOV. Assessment/enforcement panels and regulatory conferences will be held if merited by the specific issues. In addition to the new process, the Commission has reserved use of discretion for particularly significant violations to assess civil penalties in accordance with the Atomic Energy Act. Based on current performance of licensees, this discretion is expected to be rarely exercised. An example where such discretion may be considered would be for Severity Level I violations under the Enforcement Policy, e.g., an accidental criticality.

II. Violations Not Evaluated by the SDP and those Having Actual Consequences

The second group is violations that the SDP does not evaluate, which are violations that may impact the regulatory process for oversight of reactors and violations that result in actual consequences. Violations in this category will be processed in accordance with the Enforcement Policy using both severity levels and civil penalties. Violations within this group include:

- *Violations* that involve willfulness, including discrimination.

- *Violations* that may impact the NRC's ability to oversee licensee activities.

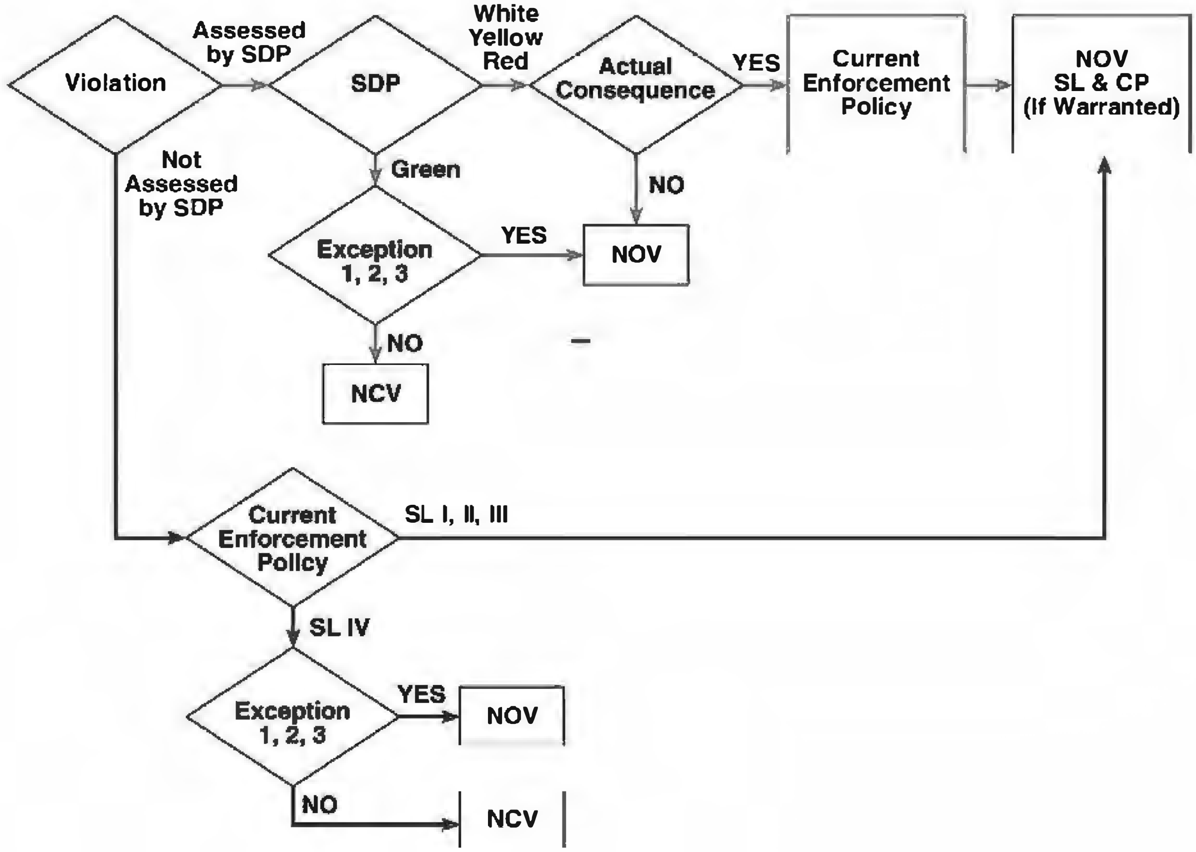
- *Violations* that involve actual consequences, such as an overexposure to the public or plant personnel, failure to make the required notifications.

Following review of the results from the pilot program, the Enforcement Policy will be modified for all reactor plants. The figure below illustrates the different enforcement paths described.

EGM 99-006 describes the new process in detail and is available on the Office of Enforcement's website at www.nrc.gov/oe. EGM 99-006 will be revised to extend the Interim Policy for the pilot plants to cover the period until initial implementation of the revised reactor oversight process. Efforts are underway to develop the appropriate guidance for initial implementation based on lessons learned.

Contact: Barry Westreich at BCW@nrc.gov.

NEW ENFORCEMENT PROCESS



Maintenance Effectiveness Inspections

Within the new baseline inspection program, there was a need to differentiate the envisioned performance-based inspections from the original programmatic inspection effort. During the 2-year programmatic inspections, the words *Maintenance Rule* became embedded in our jargon; thus, it became associated with something programmatic. Simultaneously, the emphasis on compliance oriented inspections is being superceded by our emphasis on performance-based inspections. This led to entitling the efforts to inspect the licensee's maintenance rule implementation within the baseline inspection program as "Maintenance Effectiveness" inspections.

Maintenance effectiveness inspections are a key aspect of the overall inspection effort. For details visit website: http://nrr10.nrc.gov/inspection/mainteff.htm

All questions and comments should be directed to Ed. Ford at (301) 415-1149 or via e-mail: ejf@nrc.gov.

Revised Reactor Oversight Program Goes Global

The NRC participated in the semi-annual International Information Exchange On Inspection Practices held on October 4-7, 1999. The Working Group on Inspection Practices (WGIP), an international group made up of members from the US, and 16 other countries, reports to the Nuclear Energy Agency's Committee on Nuclear Regulatory Activities. The primary purpose of WGIP is to exchange information and insights related to inspection of reactor power plants. The NRC's WGIP representatives, Michael Johnson, Chief of the Performance Assessment Section, Inspection Program Branch, and William Dean, Chief of the Inspection Program Branch attended the meeting.

NRC presented the latest developments on its new reactor oversight process, including the results to-date of pilot program implementation, feedback received, and remaining milestones leading up to full implementation. WGIP members expressed continued interest in the changes being made. Some members viewed the treatment of human performance and other crosscutting issues in the new oversight process (i.e., crosscutting issues are considered to the extent they impact performance in the cornerstones) as being significantly different from the approaches of other countries and potentially less leading. NRC participants expressed recognition that the approach represents a philosophical change from previous oversight processes and noted that the subject will receive continued attention as the NRC completes the pilot program, identifies lessons learned, and develops final process changes.

Inspection Happenings In Other Nuclear Regulatory Authorities

The Swedish Nuclear Power Inspectorate (SKI) has begun the practice of conducting a major inspection at each site each year in addition to routine ongoing inspection activities. This inspection, conducted by a multi-disciplined team of approximately 18 inspectors provides a comprehensive review of licensee activities in order to arrive at an integrated picture of licensee performance. This inspection covers areas such as engineering (e.g., modifications, safety oversight), accident management (e.g., EOPs, emergency preparedness), and human performance. In addition, in 1998, SKI initiated a practice of evaluating inspection process implementation and effectiveness following routine inspections and also on an annual basis. All inspectors and specialists who have participated in the subject inspections participate in the evaluation. The results of the review are documented in a report.

Several countries have implemented substantial changes to their inspection program. For instance, Belgium has recently revised its major inspection procedures to restate fundamental principles, clarify concepts and objectives, and provide greater structure to its inspection process. Spain (CSN) has recently consolidated its inspection program procedures and policy into a single document (similar to the inspection manual) and beginning in 2000 will conduct an annual inspection program consisting of approximately 50% generic inspections (core), 30% specific inspections (regional initiative), and 20% special inspections (area-of-emphasis). Additionally, CSN has completed a trial of its "SALP like" assessment process and will begin full implementation in 2000. Similarly, Finland's Radiation and Nuclear Safety Authority (STUK) plans to conduct an annual assessment of its inspection program and document the results in a report. Included in the program assessment will be an overall review of the safety performance of all plants as well as an assessment of the implementation of the inspection program including identification of needed improvement areas.

Several countries expressed increasing concern regarding the potential effects of economic pressures on the nuclear power industry. As a result of such pressures in Canada, in March 1999 licensees reported the closure of an important Canadian nuclear research laboratory (Whiteshell Laboratory). The Atomic Energy Control Board (AECB), Canada informed licensees of AECB concerns, requested further information on the consequences of the closure, and requested submission of licensee plans in the area of research and development to deal with such issues as aging systems and emerging safety problems. This area has and will continue to receive international attention.

In Germany, Federal elections took place on September 27, 1998. As a result, a coalition of the Social Democrats and Alliance '90/The Greens has come into power. The political aims of the new Federal Government are outlined in the Coalition Agreement of October 20, 1998. The most important feature of the new energy policy is the comprehensive and irreversible abandonment of nuclear power in Germany within this parliamentary term. The Government has begun consensus talks with utilities to discuss such issues as waste management. It plans to impose time limits on the operating licenses of utilities, if possible with, but if necessary without their consent.

Other Topics

In addition to routine exchange of information, WGIP discussed several topics designated for formal exchange. These included measuring the effectiveness of regulatory inspections, inspection of management, and inspections of contractor work. A written report on the results of WGIP work on these issues, including commendable practices, will be provided to CNRA in the coming year and will be made available to interested persons upon request.

NRC To Host Next International Workshop

During the week of May 14, 2000, the NRC, on behalf of the WGIP, will host an International Workshop in Baltimore, Md. on Activities Related to Radiation Protection Inspections; Regulatory Inspections Required for Long Shutdowns and Subsequent Restarts; and Use of Objective Indicators by the Regulatory Authority in Evaluating the Performance of Plants. The workshop will be attended by approximately 60 inspectors/managers from regulatory authorities of over 20 countries. As a part of the workshop, NRC will conduct a panel presentation on its revised reactor oversight process . Additional information regarding the workshop will be provided in the future.

Direct all inquiries about this topic to Michael Johnson via e-mail (MRJ1@nrc.gov).

Inspector Clipboard

1. N+1 Resident Inspector Policy
2. Resident Supervisory Training
3. Distinguished and Meritorious Awards
   Special Act Awards

N+1 Resident Inspector Policy

Status: The staff has recommended to the Commission that the current N+1 resident inspector staffing policy be revised to an "N" staffing policy for multi-unit sites (i.e., two resident inspectors at dual unit sites and three resident inspectors at three unit sites.) This recommendation was made as a result of current improved industry safety performance and to allow the Agency increased flexibility to allocate inspection resources where most needed. If approved, the Agency will not refill vacant N+1 resident inspector positions at multi-unit sites as they become vacant.

The following is a brief history on the resident staffing and N+1 Policy. The resident inspector (RI) program began in 1978. It was established to improve the NRC's ability to independently verify licensee performance and enhance our incident response capability. The NRC adopted the N+1 resident inspector staffing policy (1988) for multi-unit sites to respond to NRC concerns about safety performance.

The staff's current projection for attrition amongst resident inspectors is not expected to completely offset the relocation of plant-specific inspection resources through the elimination of N+1 resident staffing at multi-unit sites. If approved by the Commission, the staff does not intend to reassign any resident inspectors to achieve N resident staffing until after it reports to the Commission on regional resource utilization in June 2001, following one year implementation of the revised oversight process.

Supervisory Training for Senior Resident Inspectors

The Office of Human Resources recently clarified the policy regarding mandatory training for first-level supervisors. SRIs and other Team Leaders (TLs) are not coded, counted, or classified as supervisors (although they may perform supervisory duties), and they are not required to take the mandatory training for first-level supervisors. However, because they do perform supervisory duties, they may take any or all of the courses required for first-level supervisors, as well as other management courses the agency offers. SRIs and regional TLs may request and attend the supervisory training courses with their supervisors' approval.

Awards

The Nuclear Regulatory Commission held its Twenty Second-Annual Awards Ceremony June 16, 1999. Some of our peers received NRC's Distinguished and Meritorious Service Awards, which are the highest awards that NRC can give to its employees. Let us all congratulate the following individuals for their dedicated service and a job well done:

Senior Resident Inspector Excellence
Antone C. Cerne
Millstone 3
Region I

Mary Helen Miller
Cooper Station
Region IV

Resident Inspector Excellence
John M. Jacobson
Paducah Site Office
Region III

In addition, the Chairman of the NRC the recently recognized the efforts of a number of the regional staff who significantly contributed to the development of the baseline inspection program. This effort was recognized by the issuance of a "Special Act Award." The following individuals were recognized by the Chairman through this unique team award and should be commended for a job well done:

Dyle G. Acker`	Region IV
Kenneth P. Barr	Region II
Joseph B. Brady	Region II
Laura L. Collins	Region III
Thomas W. Dexter	Region IV
Peter W. Eselgroth	Region I
Ronald A. Langstaff	Region III
James D. Noggle	Region I

July 25, 2001

Inspector Newsletter

***********SPECIAL EDITION**********

This newsletter is intended to provide feedback and insights to NRC field inspectors on the first year's implementation of the new Reactor Oversight Process (ROP). This newsletter can also be accessed on the ROP Digital City homepage. The attachment to the newsletter contains some new examples for meeting the inspection report requirements of IMC 0610*, something near and dear to all field inspectors' hearts. Overall, the first year's implementation was very successful in increasing the use of risk information in reactor oversight. NRC field inspectors have done an outstanding job of implementing the new ROP! There are continuing efforts to make changes as needed to further refine and improve the new ROP. A special thanks goes to Ms. Meredith Prue, the NRC Office Assistant at Pilgrim, who helped to format this newsletter. Any comments or questions on issues discussed in the newsletter should be directed to Doug Coe in NRR's Inspection Program Branch at e-mail address DHC@NRC.GOV.

Inside this Newsletter ....

Inspection Manual Chapter 0610* Reactor Inspection Reports

Major changes have been implemented in the content and format of NRC inspection reports since the start of the new ROP. By design, the inspection reports are significantly shorter in length, as the result of not documenting minor issues, observations, and also not including positive information in the reports. Inspection reports are more risk-informed, reducing unnecessary burden on both the licensees and the inspectors in the field.

As part of the continual assessment of the ROP, the Inspection Program Branch (IIPB) audits a sampling of inspection reports. The audits compare the reports to the program's requirements in Inspection Manual Chapter 0610* for documenting inspections. For the first quarter of 2001, about half of the green or greater findings documented in reports didn't meet the criteria. An analysis of those that didn't meet IMC 0610* criteria points to two areas that need improvement.

The first area is the descriptions of significance in the Details section. Section 05.06, "Report Details", of IMC 0610* contains very specific guidance in this area. This format is easy to use and serves to inject consistency in NRC inspection reports. The significance of the inspection findings is intended to be documented in four separate paragraphs.

- The first paragraph should be one or two sentences. This paragraph should include a risk characterization color and applicable enforcement action (e.g., NCV), but the paragraph does not need to stand alone. For example: "A noncited violation of TS 5.4.1 for an inadequate surveillance procedure resulted in the opening of a safety relief valve during testing, which was determined to be of green safety significance."

- The second paragraph describes the finding. This description may be several paragraphs long, depending on the complexity and significance of the finding.

- The third paragraph is a more detailed "significance evaluation" describing the logic for entering the Significance Determination Process (SDP). This means the inspector needs to document the answers to the Groups 1, 2, and 3 threshold for documentation questions in Appendix B of IMC 0610*. This is the area in which the most problems have been identified. The writeups must identify the cornerstone that is affected and why the issue is more than minor. Then the inspector must state the results of the SDP evaluation. For example, "The SDP characterizes the finding to be green because...." The inspector must also explain why the finding is not greater than the color given. The underlying requirement is that the logic used to determine the significance color must be documented in sufficient detail to allow a knowledgeable reader to reconstruct the logic used to arrive at the final decision.

- The fourth paragraph describes associated enforcement actions, if any. Both the requirement violated and the associated licensee's corrective action should be included in this final paragraph.

The second area for improvement is the consistency of applying the criteria for determining if an issue should be documented. That is, too many inspection reports documented minor issues as green findings rather than screening these issues from the inspection report. The intent of the guidance and requirements in IMC 0610* is to apply the criteria for minor violations to all potential findings. If the issue has not had an effect on safety, even if it occurred under different circumstances, then the issue is minor and should not be documented. Inspectors should refer to the Office of Enforcement (OE) Web page under Guidance Documents, Appendix A, Index, Guidance for Classifying Violations as Minor Violations.

Adherence to the guidance in IMC 0610* is necessary to—

- ensure our communications to the licensees and the public are focused on significance,
- produce inspection reports that are clear, concise, and understandable,
- achieve consistency across the regions, and
- increase inspection program objectivity and predictability.

Consistency in documenting findings requires clear, explicit guidance that is understood and adhered to by all. To this end, the attachment to this newsletter provides good and bad examples of inspection report write-ups.

IIPB will continue to focus efforts on further improving the inspection program by periodically highlighting good and bad examples of inspection report write-ups. The next proposed revision to IMC 0610* will further refine the guidance for writing inspection reports and is expected to include a sample inspection report. The IIPB point of contact on IMC 0610* is Thomas Foley at 301-415-1036.

Inspector Success Stories

Once in a while it is interesting to look across the country and highlight a few inspection findings that were identified while using the new ROP inspection procedures. Of special interest are findings that were NOT first identified by the licensee or issues that became self-disclosed through an operational event. The regional offices submitted their very best inspection findings within the last year with the intent of highlighting these as models for the Division of Reactor Programs (DRP) and Division of Reactor Safety (DRS) field inspectors.

a. Emergency Feed Water Pump Deficiencies at TMI Unit 1

While determining plant status, a resident inspector identified that the licensee failed to promptly identify and correct a degraded condition on a safety related pump. TMI Unit 1 is a PWR with three independent emergency feed water (EFW) system pumps: two motor-driven and one turbine-driven. Two of the three pumps are required to meet the most limiting design basis flow requirement. The Technical Specification (TS) Limiting Condition for Operation requires three pumps to be operable and allows one pump to be out of service for 72 hours. The EFW system is risk significant because the system automatically starts to remove secondary plant heat when the main feed water system fails.

The inspector found that the outboard bearing oiler on the “A” EFW pump was empty. The oiler is an inverted glass bulb. As oil level in the pump bearing decreases below the mouth of the oiler, the liquid seal is broken, permitting air to enter the glass bulb and oil to discharge from the oiler into the pump bearing. The oiler maintains a constant oil level in the bearing housing, provided oil is maintained in the glass bulb. After further review, the inspector found that oil had been leaking from the pump for the previous 3 months for which operators had been compensating for by regularly adding oil. This deficient condition had not been entered into the corrective action process for resolution and no actions had been taken to identify the cause of the oiler leak.

Also during this 3 month period, inservice test (IST) data for the pump showed an increase in pump vibrations. System engineers recognized the change, but did not initiate actions to identify the cause of the increased vibrations. It was later determined that the increased vibrations were directly related to the condition causing the oil leak (loose bolts on the cover to the bearing housing). After evaluating pump performance data, the inspector determined that the pump had been inoperable for 39 days, which violated the TS outage time of 72 hours.

This finding was evaluated using the reactor safety SDP and TMI's plant specific SDP notebook. The phase 2 SDP evaluation for the pump being inoperable for greater than 30 days determined it to be a white preliminary finding (i.e., low to moderate safety significance). NRC Inspection Report 50-289/01-002 treated this issue as an apparent violation of 10 CFR 50, Appendix B, Corrective Action.

Several aspects of the inspector's performance were noteworthy. After initially finding the empty oiler, the inspector reviewed the operating experience and IST data for this pump, which led to learning of the increased pump vibrations. Also, the past surveillance test data was instrumental in determining the fault exposure time of 39 days. This is a good example of the use of the new ROP inspection procedures to identify a potentially risk significant inspection finding. For more information, contact Greg Smith, RI at TMI-1.

b. Degraded Fire Barrier in Switchgear Room at LaSalle

A resident inspector found an unsealed fire barrier while implementing Inspection Procedure (IP) 71111.05, "Fire Protection" at LaSalle Nuclear Station. Using a flashlight, the inspector identified a 2.75-inch diameter hole in the wall separating the safety related switchgear rooms. The opening was approximately 20 feet in the overhead. A grounding strap ran through the hole, but the hole had not been sealed with any fire retardent sealant, which compromised the 3-hour rating between redundant division safety-related switchgear rooms. As a result of the inspector's finding, the licensee began reviewing the extent of the problem and found a second unsealed opening between the two switchgear rooms.

The two openings represented a degradation of a fire protection element and compromised the 3-hour fire barrier separation between redundant safe shutdown trains. The inspection finding was analyzed using the Fire Protection SDP. A phase 2 SDP review determined that the two unsealed fire penetrations were of very low risk significance (Green). NRC Inspection Report No. 50-373/00-13 documented the finding as a noncited violation.

Although this issue was ultimately determined to be of very low risk significance, this was an excellent example of an inspection finding that provided the licensee with valuable information to assist in making an informed decision. The licensee addressed the identified deficiency and, as a result, reduced plant risk during certain fire scenarios. This is consistent with the fundamental objective of the new ROP, which is directed at controlling contributors to risk, such that agency actions, including resource expenditures, are consistent with the actual risk importance. For more information, contact Paul Krohn, SRI at Point Beach.

c. Potential Ice Buildup in Safety Related Piping at Prairie Island

An inspector identified a potential for ice blocking safety-related piping while inspecting equipment alignment using IP 71111.04 at Prairie Island. The inspector noticed icicles hanging from the cooling water dump to the grade line outside of the auxiliary building. Looking closer, he saw a large buildup of ice inside the visible portion of the pipe.

Normally the return path for cooling water (called essential cooling water at most plants) flows back into the outfall of the circulating water system. However, because the circulating water system is not safety-related, it was assumed that this flow path could be blocked by a seismic event. The system also has an emergency dump line, which can be opened from the control room, to ensure that a flow path for cooling water to vital components can be maintained. This 20-inch diameter, open-ended dump line exits the auxiliary building and runs about 15 feet before terminating. This line is normally dry and is isolated by a motor operated valve. The line connects to a common crossover, which is also isolated by MOVs from each of the two cooling water return headers.

The licensee was testing MOVs, which required that the crossover line be put in service. One of the isolation valves leaked by the seat allowing river water to collect in the emergency dump piping. The water in the dump line, which is open to the atmosphere, began freezing and blocking the pipe. The inspector recognized the potential for blockage and immediately notified the licensee. The licensee's corrective actions included insulating the exposed piping and installing a temporary heater to clear the ice from the open pipe.

The SDP evaluation for the issue came out as potentially risk significant using the seismic screening criteria worksheet in the reactor safety SDP. A phase 3 SDP evaluation concluded that the issue was of very low significance (Green) because a seismic event has an extremely low probability of disabling the normal discharge path. This issue is documented in NRC Inspection report No. 50-282/01-02; 306/01-02.

This finding is an excellent example of how the inspector improved nuclear safety at the plant by identifying a deficient condition that could have blocked the cooling water emergency dump line. Changes to system configurations can create adverse weather issues where none had previously existed. The annual NRC adverse weather inspection did not detect this issue since the problem was only evident during certain system alignments. For more information, contact Steve Ray, SRI at Prairie Island.

d. Flood Protection Deficiencies at Brunswick

A resident inspector, using IP 71111.06, "Flood Protection", identified equipment deficiencies at Brunswick. The maintenance rule component was accessible only through manholes. The inspector identified the deficiencies while reviewing licensee obtained digital images taken during their licensee inspection. The observations were later confirmed during direct inspection of the component. The deficiencies included torn cable jackets, corroded and broken cable supports, leaking ductbanks and sump pumps, and inoperable level control circuits. The licensee had been aware of some of these deficiencies for almost 2 years but had not initiated proper corrective actions.

As a result of the these findings, the licensee initiated a new engineering service request to properly document and evaluate all deficiencies associated with the safety-related manways. Subsequently, the licensee determined that no operability issues existed. This NRC finding was determined to be of very low safety significance (Green), and was documented in NRC Inspection Report 50-325/00-04 as a noncited violation.

A second issue identified by the inspector was that most of the safety-related cables and splices in the manholes were under water for extended periods. The ductbanks in many manholes were not sealed and sump pumps were inoperable. The safety-related battery system ground resistance had been affected by the submerged cables, and was causing the licensee to increasingly search for grounds. The licensee's specifications for the cabling stated that the equipment met the requirements of 10 CFR 50.49. This qualification was lost when cables or splices were submerged in water. Further review by the inspectors determined that the nuclear industry had not qualified cables for long-term submergence because the cable submergence testing was only done for 14 days. This issue was left as an unresolved item pending further inspection and analysis.

These finding are a good example of the inspector finding flood protection deficiencies because of a new focus on flood protection measures as part of the new ROP. For more information, contact Gene Guthrie, RI at Brunswick.

e. ALARA Issues at Callaway Result in Three White Findings

A health physicist inspector identified several significant ALARA concerns at Callaway Nuclear Station during a refueling outage. While performing baseline IP 71121.02, ALARA Planning and Controls, the inspector found that the licensee planned and scheduled outage work activities to reduce the length of the outage without adequately incorporating ALARA, failed to properly train workers in dose reduction methods, and failed to ensure good communications between radiation protection personnel and other work groups. Six jobs accrued more than 5 person-rem and exceeded their dose projections by 50 percent. The Agency determined that these performance problems were a violation of 10 CFR 20.1101(b), ALARA principles.

The NRC inspection findings included the following:

- Lack of ownership in the scaffolding program. Reviews of scaffolding packages were not timely. Alternatives to scaffolding were not pursued. Scaffolding was erected during times in the outage when dose rates were high, such as during the reactor coolant system cleanup.

- Steam generator work commenced 3 to 4 days earlier than normal, providing less time for radioactive decay.

- In the original outage schedule, all reactor coolant pump seal work was planned when the steam generator sides were full. However, because all four seals had to be worked, this was not possible. As a result, some seal work was continued with the generators empty. In the past, the work crews moved sequentially from pump to pump resulting in lower doses by minimizing tool movements. In this outage, the seal replacement activities were fragmented and the crews had to move between pumps repeatedly as other work activities allowed. This forced the crews to stage equipment multiple times increasing total worker exposure.

- Insufficient mockup training, especially for steam generator manways and inserts and those that used robotic eddy current testing equipment.

These findings were evaluated with the Occupational Radiation Safety SDP. Three white findings were identified and documented in NRC Inspection Report 50-483/2000-17. It was obvious that licensee senior managers didn't convey expectations on ALARA and had fostered a culture that didn't support the ALARA concept. The licensee appealed the SDP results, denied the Notice of Violation, and also claimed a backfit. On May 4, 2001, the NRC issued a response that upheld the original staff conclusions and the NRC actions taken.

These findings are a good examples of the inspector identifying significant ALARA issues and following the SDP guidance for occupational radiation safety. The findings sent a clear message to the nuclear industry on the importance of the ALARA concept. As you would expect, during their next refueling outage, Callaway focused more significantly on ALARA and achieved substantially better results.

ROP Information on the Web

NRR maintains the ROP Web sites to provide useful information on our processes to internal and external stakeholders in a timely, accurate, and user-friendly manner.

ROP Digital City

http://nrr10.nrc.gov/NRR/ROP_DIGITAL_CITY/ROP_digital_city.html is an internal NRC Web site designed to get pertinent information out to inspectors and other NRC employees in advance of the internal processes that distribute information (ERIDS, ADAMS, etc.). This site is routinely updated and includes the latest guidance, draft information (including guidance and PI FAQs), feedback forms, and inspection program points of contact. This site also provides links into the ROP Home Page and other subpages that are available to the public and licensees on the external site.

The ROP Home Page

Http://nrr10.nrc.gov/NRR/OVERSIGHT/index.html serves as the primary gateway to the vast array of information available on reactor oversight. The ROP Home page provides introductory remarks, a direct feedback mechanism, and hyperlinks to several subpages including the plant assessment results, ROP program documents, ROP meeting notices and summaries, and a "plain English" description of the ROP.

The Plant Assessment Results page

http://nrr10.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html provides the most recent plant performance information, using performance indicators and NRC inspection findings to determine the applicable Action Matrix column for each plant. Plant performance information is also available in comprehensive summary matrices for performance indicators, inspection findings, and action matrix designations. Note that the internal NRC Web pages referenced above may be more up to date than the information on the external NRC site page available to your licensees.

You should consider bookmarking pages you use often, and don't forget to check ROP Digital City frequently for the latest news and information. We continue to make improvements to the ROP Web pages to ensure that they are useful for communicating accurate and timely ROP information to all stakeholders. Feedback on the Web page is appreciated and should be provided directly to Ron Frahm (301-415-2986) or Conchita See (301- 415-1306).

1st Year ROP Results and Insights

SECY 01-0114, "Results of the Initial Implementation of the New Reactor Oversight Process," was issued on June 25, 2001. SECY 01-0114 communicates the results and lessons learned from the first year of the implementation of the new ROP. Included in this paper are a myriad of issues associated with the new ROP. Listed below is a brief synopsis of a few salient issues that may be of most interest to inspectors in the field.

a. Internal Stakeholder Survey Results

In March 2001, NRR conducted a survey of those individuals within the agency who were involved with the ROP initial implementation in Headquarters and in each regional office. The NRC engaged Los Alamos National Laboratory to formally analyze the survey data, with a final report expected to be released by early summer 2001.

The survey results indicated that internal stakeholders had a more positive perception of the ROP than they had during the previous survey conducted November 1999, at the end of the six month pilot program. The inspector's perception of the ROP showed a marked increase in the understanding and acceptance of the various components of the ROP. The survey showed that most inspectors felt that the new ROP increased predictability, consistency, clarity, objectivity, timeliness, and efficiency. Additionally, the ROP was thought to be more risk-informed and reduce unnecessary administrative burden on both the NRC and licensees.

Respondents indicated opportunities for improvement in two areas. First, some inspectors felt that better timeliness was needed in answering inspector feedback forms. The other opportunity for improvement involved the timeliness and ease of use of the SDP. Inspection Programs has made changes to the feedback process to improve response timeliness and the concerns regarding ease of use of the SDP are being addressed for fire protection, reactor safety and physical protection SDPs. The point of contact for internal survey results is August Spector (301-415-2140).

b. End of Cycle (EOC) Performance Meetings

The EOC review meetings were held during May 2001. This process replaced the old Plant Performance Review (PPR) and Systematic Assessment of Licensee Performance (SALP) processes. The PPR and SALP assessment processes were substantially more qualitative than quantitative in nature. This time around the EOC plant assessments were based on the Action Matrix inputs of standard PIs and inspection findings.

The results of the EOC reviews are available on the NRC Web site: from the external NRC Web server, click on Program Office, NRR and then Action Matrix Summary. A quick tabulation shows that about 25% of the plants were outside of the Licensee Response Column. Of these, 18 plants were in the Regulatory Response Column, 3 were in the Degraded Cornerstone Column (i.e., Callaway, Kewaune, Millstone 2), and only Indian Point 2 was in the Multiple/Repetitive Degraded Cornerstone column. What does all this mean? It appears that the Action Matrix is successful in differentiating plant performance based on a well-defined set of inputs (i.e., PIs and inspection findings). Based on this information, the NRC decides the proper level of agency response, including supplemental inspections and other pertinent regulatory actions. One opportunity for further improvement is the need to enhance the guidance for determining the existence of substantive cross-cutting issues. IMC 0305 references substantive cross- cutting issues but does not currently provide a threshold. The point of contact for questions about plant performance assessment is Robert Pascarelli (301-415-1245).

c. N + 1 Resident Inspector Staffing Update

In a letter dated January 1, 2000, the Commission approved an interim revision to the resident inspector N+1 staffing policy to allow reducing the staff to N for multi-unit sites. The Commission further specified that in no case would the resident site staff be reduced below two inspectors. Additionally, some flexibility was retained that allowed Regional Administrators, in consultation with NRR, to adjust the number of resident inspectors assigned to a site upward if the circumstances warranted. Further analysis to provide recommendations on inspection staffing is planned to be completed and issued in June 2001. During the first year's implementation of the ROP, the agency has rapidly completed its transition to the "N" resident inspector staffing as approximately 75% of multi-unit sites have already been reduced to N from N+1. The point of contact for questions about resident inspector staffing is Jim Isom (301-415-1109).

d. Significance Determination Process (SDP) IMC 0609

Several program changes were made to the SDP as a result of the lessons learned workshops and stakeholder feedback received during the initial implementation. Probably the most important change to the Reactor Safety SDP, is the development and issuance of the plant specific risk-informed inspection notebooks. Issuance of the notebooks is scheduled for completion during the summer of 2001. NRR and the regions have begun a round of benchmarking to compare the SDP and licensee risk model results to ensure that the SDP notebooks are generally conservative. These benchmarking activities should be completed at a rate of about 2 site visits per month.

During the first year of ROP implementation, 22 inspection findings were processed by the Significance Determination and Enforcement Review Panel (SERP) and characterized as white or greater. These 22 findings (18 white, 3 yellow, and 1 red) cover a range of topics including: fire protection, radiological protection, emergency preparedness, security and reactor safety.

Also of interest is the availability of a Web-based SDP Instructional guide. The guide was developed with useful examples based on various reactor safety SDP issues. This guide is intended to supplement the SDP training that inspectors received prior to full ROP implementation. The guide can be accessed from the NRC Internal Home Page by selecting Employee Training and Development, Self-Paced Learning, Web-Based Training, SDP Instructional Guide or at http://papaya.nrc.gov/SDP/index.htm.

Questions related to SDP guidance should be directed to Peter Koltay at 301-415-2957 or Marvin Sykes at 301-415-3297.

e. IMC 1245 Training

A working group was formed in August 2000, charged with reviewing, assessing, and modifying the inspector training and qualification requirements contained in Inspection Manual Chapter (IMC) 1245, "Inspector Qualifications for the Office of Nuclear Reactor Regulation Inspection Program," to support the reactor oversight process. The working group comprises representatives from the Regions, Technical Training Center, and NRR. The working group is guided in its efforts by a steering committee of headquarters and regional managers.

The IMC 1245 working group is defining competency-based training and qualification requirements for inspectors. The content and methods of the existing training program are being reviewed to identify which program areas already support the newly defined competencies, where improvements are needed, and where new training must be developed. Definition of the requirements is expected to be completed this summer. However, the new requirements may be implemented over time to allow the development or revision of training and qualification materials. Changes to the training and qualification program are not expected to result in additional training for currently qualified inspectors.

What will be the output of this group? IMC 1245 will be revised to incorporate the changes to the content of the inspector training and qualification requirements and also to incorporate improvements to the administrative aspects of program. The administrative changes are based on feedback from inspectors and regional managers and will include improvements to the structure of on-the-job and self-study training to better define the desired outcomes and thereby improve consistency. The revised manual chapter will also include a requirement for IIPB to conduct regular assessments of the effectiveness of the training and qualification process in preparing inspectors to implement the inspection program. The results of those assessments will serve two purposes: defining the continuing and refresher training needs of inspectors, and providing an ongoing means for maintaining the initial inspector training and qualification program content. The point of contact for this area is Mary Ann Ashley, NRR (301-415-1073) or any of the following regional representatives:

Michele Evans, Region I (610-337-5224)
Kenneth Kolaczyk, Region I (610-337-5327)

Len Wert, Region II	(404-562-4540)
Kerry Landis, Region II	(404-562-4510)
Gary Shear, Region III	(630-829-9876)
Phil Harrell, Region IV	(817-860-8250)

Attachment

Example write ups for inspection reports.

Good Example

Summary of Findings

Green. A Non-Cited Violation of TS 5.4.1.a. for an inadequate surveillance procedure, which resulted in the inadvertent opening of a safety relief valve during testing. The procedure failed to provide instructions to reset the low-low set logic before applying an input signal to the trip unit.

Summarized the performance issue and its significance, described violation and identified the requirement violated.

The finding had an actual impact of lifting a relief valve, which could cause a reactor scram. The finding was of very low safety significance because although the finding contributed to the likelihood of a primary system LOCA initiator, mitigation systems were all available (other than for routine scheduled maintenance) during the period the deficiency existed. Because the finding is of very low safety significance and the finding was captured in the licensee's corrective action program, this finding is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. (Section 4OA3).

SDP logic is clearly described including mitigation credit (using same language as the phase 1 reactor safety SDP logic).

Report Details

4OA3 Event Follow up (71153)

1. Inadvertent Safety Relief Valve (SRV) Opening During Testing

Inspection Scope

The inspectors observed how control room personnel responded to an SRV that unexpectedly opened on July 18, 1999. The inspectors arrived in the control room shortly after the SRV was closed and observed the follow-up actions of licensed operators, including operator briefings, actions required by the off-normal procedures, and monitoring of plant conditions. As part of the follow up to this event, the inspectors observed plant chart recorders, compared off-normal procedure requirements to observations of operators performance, and held discussions with plant personnel regarding the various methods available to the operators to close the SRV if the valve had become stuck open.

Scope provides details of activities actually completed by the inspector and includes the criteria used for determining acceptable performance.

The following documents were reviewed and used as criteria for evaluating the operators' response to this event:

DES -21-1, "SRV Inadvertent Opening/Stuck Open"

DES- 00-3901, "Unanticipated Opening of SRV 1B21F0051D During Surveillance Test"

DES- 00-3903, "SRV Weeping After Being Opened and Closed"

a. Findings:

Green. A noncited violation of T.S 5.4.1.a for an inadequate surveillance procedure, which resulted in the inadvertent opening of a safety relief valve during testing. On July 18, 1999, during the calibration of SRV -1B21F0051D, the SRV unexpectedly opened at 2:23 PM. The licensee was using surveillance procedure DES-B21-T0369 at the time. A licensed operator responded to the event by promptly following procedure DES B21-1, "SRV Inadvertent Opening/Stuck Open," which required reducing power to 90 percent and then closing the SRV. The SRV was closed successfully within 2 minutes of it opening. As expected, there was an increase in the suppression pool temperature and level; however, these parameters remained within TS limits.

The first sentence summarizes the performance issue, its significance, and enforcement.

The licensee's investigation determined the cause to be an inadequate surveillance instruction (SVI). The SVI did not have a step to reset the low-low set logic before applying an input signal to the trip unit. The licensee also determined that it had missed an opportunity to prevent this occurrence during the identical testing the previous week. Then the licensed operators and instrument technicians questioned why the low-low set logic lights were lit and thoroughly evaluated the condition. They decided to reset the logic before continuing the test. This action was not documented and the procedure weakness was not recognized at the time. Based on questions from the inspectors, the licensee determined that the most recent revision to the procedure left out the specified step. This problem identification concern is referenced in section 4OA2 of this report.

The performance deficiency associated with this event is an inadequate procedure that led to the unexpected opening during calibration of the SRV at full power. The finding was greater than minor because it had an actual impact of lifting a relief valve which could cause a reactor scram (an initiating event), if it is assumed that the relief valve stuck open for a longer period of time. The event was of very low safety significance because, although the finding contributed to the likelihood of a primary system LOCA initiator, mitigation systems were all available (other than for routine scheduled maintenance) during the period the deficiency existed. Therefore, the postulated event would have been nothing more than a reactor trip accompanied by a rapid plant cooldown. Technical Specification 5.4.1.a requires that written procedures be established, implemented, and maintained covering the activities specified in Regulatory Guide 1.33, Appendix A. Regulatory Guide 1.33, Appendix A, Item 8b, requires procedures for the surveillance tests listed in the Technical Specifications. Contrary to TS 5.4.1.a. and Regulatory Guide 1.33, Surveillance Procedure DES-B21-T0369 was not maintained and is an apparent violation . However, because of the very low safety significance and because the issue is in the licensee's corrective action program, it is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-XXX/1999-024-02). This violation is licensee Condition Report 00-3901.

"Contrary to" statement IAW Enforcement Manual.

Poor Example

Summary of Findings

Green: As a result of an inadequate test procedure, one safety relief valve unexpectedly opened during testing on July 18, 1999. The procedure failed to provide instructions to reset the low-low set logic before applying an input signal to the trip unit. A Non-Cited Violation was identified for the inadequate procedure.

Does not site requirement violated.

The finding was of very low safety significance because the relief valve did not stick open. The inspectors used the plant-specific worksheets in the Phase 2 Significance

Mentions SDP but does not explain logic for SDP

Determination Process (SDP) analysis to assess the safety significance of the issue. (Section 4OA3)

significance determinations. Does not address affected cornerstone, assumptions, and 0610* screening results.

Report Details

4OA3 Event Follow up (71153)

Inadvertent Safety Relief Valve (SRV) Opening During Testing

Findings:

Does not summarize the inspection results, significance, or applicable enforcement; just a recitation of events.

While performing procedure DES-B21-T0369, SRV 1B21F0051D opened unexpectedly. The licensed operator response to the event included promptly following DES B21-1, which required reducing power to 90 percent and then closing the SRV. The SRV was closed successfully within 2 minutes of opening.

The licensee's investigation determined the cause to be an inadequate surveillance instruction (SVI). The SVI did not have a step to reset the low-low set logic before applying an input signal to the trip unit. The licensee's investigation also determined that it had missed an opportunity to prevent this occurrence during the identical testing the previous week. Then the licensed operators and instrumentation technicians questioned why the low-low set logic lights were lit and thoroughly evaluated the condition. They decided to reset the logic before continuing with the test. This action was not documented and the procedure weakness was not recognized at the time.

Problem identification should be discussed in Section 4OA2.

The performance deficiency was an inadequate procedure that led to the unexpected opening during calibration of the SRV at full power. Technical Specification (TS) 5.4.1.a requires written procedures be established and maintained covering the activities specified in Regulatory Guide 1.33, Appendix A. Item 8b of Appendix A requires procedures for the surveillance tests listed in the TS. The inadequate surveillance procedure is a violation of TS 5.4.1.a. However, because of the very low safety significance, this issue is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-440/1999-014-02 (DRP)). This violation is in the licensee's corrective action program as Condition Report 00-3901.

NRC Enforcement Manual required wording is "because of the very low significance and because the finding is in the licensees corrective action program (CR-XXX), this is...".

The inspectors used Phase 1 and 2 of the Significance Determination Process (Manual Chapter 0609) to assess the significance of the issue. Because the inadequate procedure resulted in the SRV opening during the test, the issue had an impact on safety. However, the SRV did not stick open and using the worksheets in the Phase 2 analysis, the finding was determined to be of very low safety significance (Green).

Lacks detail and does not provide traceable SDP logic. Confuses event significance with finding significance. Enforcement and significance determination should also be in the same paragraph, if possible .

INSPECTOR NEWSLETTER

Issue 03-1 January, 2003

Our goal is to provide useful and succinct information to inspectors.

Purpose of Inspector Newsletter

Previous newsletters issued by IIPB focused on communicating policy issues surrounding the ROP. These newsletter were lengthy and boring (yes, we agree they were boring). We realize that inspectors are busy and that the ROP is no longer new. Therefore, we have shifted the focus of the newsletter on the inspectors. Best practices and hands-on training guidance exist in various formats in each region. We intend to showcase these practices in this newsletter. **HOW ARE WE GOING TO DO THIS---**We have established an editorial board consisting of members from each region. Board members, listed separately will provide input to this newsletter. You are encouraged to contact your regional board member with recommendations for best practices, inspector checklists or any practices that may provide value to inspectors. **WHAT DO WE WANT FROM YOU---**We need to know what you want included in this newsletter. Do you want pictures? More examples of inspector best practices? Please contact Fiona Tobler or Allan Barker, IIPB to let us know what you'd like to see in the newsletter.

Inspector Happenings

We know that inspectors are a tight knit group. Everyone seems to know everyone. Most of us would like to know what's going on in the regions. This column will list recent promotions and reassignments. If we leave your name out that just means your region forgot to tell us, so please contact us directly and we will include you in the next edition. We can also include names of former NRC inspectors that you come across in plants. Let us know if you like this column.

Region I

Jim Trapp -RI, SRA selected to Branch Chief
Wayne Schmidt - RI, selected as SRA
Ray Lorson, SRI selected to Br. Chief
Michele Evans, Br. Chief, reassigned to NRR/IIPB
Ed Knutson,RI Vermont Yankee to Nine Mile Point
Beth Sienel -RI Millstone to Vermont Yankee
Tony Cerne, SRI Millstone 3, retiring spring 2003
Len Cline, RI Calvert Cliffs to SRI, Fitzpatrick
Silas Kennedy, DRS to RI Millstone
Joe OHara, DRS to RI Calvert Cliffs
Mark Ferdas, DRS to RI, Hope Creek

Region II

Scott Freeman-RII, Oconee RI to SRI at Sequoyah
Gene Guthrie-RII, Brunswick RI to SRI at Catawba
Joel Munday-RII, Hatch SRI to Br. Chief
Bill Bearden-RII, to SRI Browns Ferry 1

Region III

Pat Louden - RIII Clinton SRI to Br.Chief
Ken O'Brien - RIII Reactor Inspector to Br.Chief
Julio Lara - RIII Kewaunee SRI to Br.Chief
Eric Duncan - RIII LaSalle SRI to Br.Chief
David Pelton -Lic Examiner to RI as SRI @ Vermont Yankee
Doug Simpkins - RIII Davis Besse RI to RII Plant Hatch SRI
Ivy Netzel - RIII Reactor Engineer to D.C. Cook RI
Doug Eskins - RIII Reactor Eng. LaSalle RI
Joe Larizza - RIII Fermi Resident leaving the agency

Region IV

Troy Pruett-RIV SRA to Br. Chief

In this issue....

"Nothing great was ever achieved without enthusiasm"
Ralph Waldo Emerson

Real Problems, Real Solutions

The purpose of this column is to showcase inspector best practices. Some of the newsletters may showcase these best practices by supporting a specific theme. The theme for this month is "questioning attitude". The finding below illustrates an inspector using a questioning attitude in going beyond performing a simple comparison of documented test results. The inspector used insights from past operational experience and independent research into acceptance criteria bases in developing the finding.

FOCUS ON SURVEILLANCE TESTING

The licensee performed stroke time testing of the Unit 2 pressurizer power operated relief valves (PORVs) in February 2002 to obtain new in-service testing baseline stroke time values for the PORVs following maintenance. The testing was also performed to demonstrate operability of the PORVs for low temperature over-pressure protection (LTOP) prior to Unit 2 entering Mode 5 (Cold Shutdown) upon completion of refueling. Two PORVs are used for LTOP; the PORVs are air-operated and have backup air supply bottles designed to provide sufficient air to cycle the PORVs for 10 minutes without operator action during an LTOP event. Consequently, the minimum backup air supply bottle pressure of 900 pounds was a critical parameter, as was the PORV minimum stroke time in the open and closed directions.

The inspectors noted that licensee personnel had difficulty getting the PORVs to meet the minimum stroke time acceptance criteria during testing at the beginning of the Unit 2 refueling outage. Licensee personnel subsequently revised the stroke time acceptance criteria based on their review of the original design calculation for sizing the backup air supply bottles. The inspectors compared the revised acceptance criteria against the acceptance criteria from the backup air bottle sizing calculation and identified that licensee personnel failed to correctly incorporate the acceptance criteria from the design calculation into the surveillance test procedure. The result was that the licensee could have considered an inoperable PORV to be operable. The inspectors reviewed the actual as-found stroke times for the two PORVs against the acceptance criteria from the design calculation and concluded that the PORVs were operable.

For more information contact: Brian Kempker, Sr. Resident Inspector, D.C. Cook
RPT Number 50-315/316/02-02/Issue Date: 08/30/02

Quirky Tidbits

What do you think about this column? Appropriate for the NRC or too funky? We would like you to share some of your personal accomplishments. It's good to know that we have lives outside of work. We could have some fun with this column.

1. Chuck Casto, RII, completed an Ironman 2.5 mile swim, 112 mile bike ride, & 26.2 mile run).
2. Pat Gwynn, RIV, drummer for "The Boroughed Tymes" was on stage with Martha & the Vandellas, the Dave Clark 5 and the Shadows of Knight. In 1966 his band played at McCormick Place in Chicago, IL, during the Teenage Worlds Fair. He retired at the ripe old age of 15. Pat is the blonde in the middl e.

Real Problems, Real Solutions (Continued)

FOCUS ON SAFETY

The licensee identified foreign material in the standby liquid control (SLC) tank which made both subsystems of the SLC system inoperable. The inspector noted that the licensee's actions were limited to recovery of the tank and did not include an assessment of the alternate SLC system or associated emergency procedures.

The inspector conducted a walk down of the alternate SLC system and reviewed emergency procedures. The licensee was supposed to have chemicals available in the warehouse to support alternate SLC injection. The inspector went to the warehouse to determine if the chemicals were onsite. Warehouse personnel identified an inventory of chemicals on their computer which they thought were the referenced chemicals and which were stationed in the warehouse. The inspector requested to see the chemicals. A warehouse attendant took the inspector to the location identified by the computer where the chemicals were being stored. Upon arrival, the inspector determined that the referenced chemicals were not of the correct kind or in sufficient quantity to perform the alternate SLC function. Further investigation by the licensee determined that the appropriate alternate SLC chemicals were not onsite and had been removed from inventory over a year earlier.

For more information contact: Troy Pruett, Region IV DRS Plant Support Branch Chief or Max Schneider, Sr. Resident Inspector, Millstone, RPT Number 50-458/00-14/Issue Date: 12/06/00

RII/DRS Spotlights

Region II/DRS website contains "spotlights" that are aimed at providing supplemental inspector training for experienced and inexperienced inspectors. The latest spotlight is "Breaking Through the Wall of Assumptions". The following was abstracted from this spotlight:
"Having a questioning attitude encourages our foresight. A questioning attitude fosters awareness of uncertainty and hazards. That's why we focus on recognizing "error-likely situations". ***A healthy questioning attitude has to overcome the temptation to rationalize away our"something's not right" gut-feelings.*** Using an "If-then" logic or "What-if.." questions can improve our questioning attitude and foresight. Also, a questioning attitude used multiple, alternative indications (facts). Indications of critical parameters are verified against independent, alternative indications to improve comprehension of the actual situation".

Inspector Tips

The purpose of this column is to provide you with some hands-on inspection tips. This column may or may not appear in every issue. It just depends on the topic and on our whim (smile). The tips this month relate to "Questioning Attitude".

1. Challenge abnormal indications or conditions
2. Do not assume someone else has already recognized the abnormality
3. Be inquisitive
4. Qualify the information source
5. Validate the information (clarify & confirm)
6. Verify the information from an independent source

What are you looking at?

The purpose of this column is to provide in-field inspection things to consider when conducting in-plant tours. Here are a few things Carey Brown, Resident Inspector at Clinton Power Station looks at when inspecting pump motors

- baseplate positioning bolts should be backed off and locked to allow for expansion
- ground straps should be tight, clean and unpainted
- proper oil level
- site glass "bulls-eye" should be clear so oil is observable
- ventilation openings should be clean to allow for adequate air flow
- electrical conduits should be appropriately sealed for the area (EQ)
- look for unusual vibrations

Got other ideas and tips? Please forward them to you regional newsletter editorial board member.

INSPECTOR NEWSLETTER

Issue 03-2 March, 2003

OUR GOAL IS PROVIDE USEFUL AND SUCCINCT INFORMATION TO INSPECTORS

Newsletter Feedback

Thanks to everyone who took the time to provide feedback on our first newsletter. Please continue to send us your comments and suggestions. Here are some of the comments we received:

1. *"I like the newsletter. Very informal, but informative"*
2. *"I enjoyed the newsletter. It was succinct and informative. Please continue with this effort".*
3. *"Good job. This has been something for which I've been asking for some time. As a new resident, I was at the mercy of the SRI and his tutelage. If he was not a good instructor, I did not learn the intricacies of the position. This is a great way to let other inspectors know of which things to watch. Again, good job, and let me know how I can help".*
4. *"Overall, I think the newsletter is a very good help to inspectors. I like reading stories of good findings and also inspection tips. I think topics like these will especially help out new inspectors. No negative comments on the newsletter".*
5. **THANKS TO STEVE BURTON** for this comment: *"I got the inspector newsletter and look forward to its continued return. The old letters had all of the rotation dates (for SRI and RI positions in all regions) to aid in planning purposes. It would be nice to see this information return".*

WE TOOK ACTION--the Reactor Inspector Rotation Schedule has been updated and is posted on ROPs Digital City. For a copy click on http://nrr10.nrc.gov/NRR/ROP DIGITAL CITY/ROP _digital city.html

BY THE WAY-- Digital City has a new and dynamic webmaster, IIPB's own Larry Turner (no, he is not related to Ted). He is reinventing Digital City so check it out.

Inspector Happenings

Region I

Travis Rhoades-New hire- Reactor Inspector,
Paul Bisset- DRS, Retired
Joseph O'Hara- DRS to RI Calvert Cliffs,
J. Daniel Orr- to SRI Salem 1 & 2,
Beth Sienel- RI Vermont Yankee
Michele Evans- DRP to Sr. Ops Engin. IIPB/NRR

Region II

Jonathan Bartley- SRI Watts Bar - on a 1-year reserve call-up
Katherine Green-Bates- PE to Turkey Point RI
Norm Garrett -RI - acting SRI at Hatch
Militza Maldonado- new secretary Turkey Point
Tom Morrissey- RI Vogtle - acting SRI for 3 months at Watts Bar
Roger Reyes- RI Turkey Point to RI Crystal River
Steve Sanchez- RI Crystal River to RI St. Lucie
Otis Smith- SI DNMS to DRS
Joelle Starefos -RI Browns Ferry to NRR

Region III

Billy Dickson-Dresden RI to Clinton SRI
Rob Krsek -Palisades RI to Kewaunee SRI
Dan Kimble-Monticello RI to Lasalle SRI
Jack Rutkowski-New RI at Davis Besse
Rich Berg-New RI at Kewaunee
Tim Steadham-New RI at Fermi

Region IV

Ken Brockman-to IAEA as Director Div. of Nuclear Installation Safety
Russ Bywater - to SRI at ANO
Mike Runyan - to SRA
Gail Good - to acting Deputy Director- DRP

Former Employees

John Russell-former RI at SONGS is part of the team searching for weapons of mass destruction in Iraq.

Spotlight on Tony Cerne

Tony Cerne, RI, Senior Resident Inspector at Millstone 3 retires in March with over 25 years of NRC inspector experience. Tony is considered to be one of the few remaining NRC experts for construction activities; as SRI Seabrook in the 1980's, his expertise was crucial to the effective oversight of construction activities during a highly contested plant licensing. In 1996, he was tabbed to be SRI Millstone 3 to provide highly talented and credible inspection of Millstone's recovery efforts. He has received numerous awards, including Agency-wide Resident Inspector of the Year, Meritorious Service, and Distinguished Service. (**IMAGINE** that he was able to accomplish all of this with a degree from West Point). Everyone the editor talked to had nothing but positive things to say about Tony. **HERE'S WHAT TONY HAS TO SAY:** (b)(6)

(b)(6)

What are we doing for you?

Thanks to a mysterious RIII inspector we are working on several initiatives for inspectors. One of these initiatives is to provide you with several posters for your office. Currently underway are posters that display existing NRC Values and NRC Principles of Good Regulation. Posters will be mailed directly to sites and provided to regions within the next two months. The posters are 11 by 19 inches and were created by NRC's graphic departments.

Chief Examiner's Planning Guide

Region II developed a Chief Examiner's Planning Guide to help implement the guidance promulgated in NUREG-1021, Operator Licensing Examination Standards for Power Reactors, for the development and administration of operator licensing examinations. The planning guide helps the Chief Examiner manage the examination project by developing a project plan (chart) that identifies the sequences of events that must be accomplished in the development, administration and documentation of operator licensing examinations. The planing guide has proven to be an effective management tool in helping the branch increase efficiency and effectiveness in the administration of operation licensing examinations. A chart list all the tasks (a total of 77) which must be completed. Already the staff has reduced the time required to implement examination workload just by identifying process efficiencies. For a copy of the guide click on http://r2.nrc.gov/roi/2602.pdf

In memory of Ted Easlick
Senior Resident Inspector, Brunswick NPP

Real Problems, Real Solutions

FOCUS ON OFF-NORMAL CONDITIONS

Title: Control Room Operators Inattentive to Decreasing Auxiliary Component Cooling Water System Surge Tank Level

Discussion: During routine Unit 2 control board walkdowns, the inspector identified that operators had not observed and investigated the cause of a decreasing level in the Auxiliary Component Cooling Water (ACCW) system surge tank. The cause was later found to be the result of a small through-wall leak in the shell side of the Chemical and Volume Control System (CVCS) Letdown Heat Exchanger.

On December 20, 2002, the inspector noted that the Unit 2 Control Room ACCW surge tank level indication was reading lower than normal. The inspector knew that this was a closed cooling water system and it was not typical for surge tank level to fluctuate. Upon closer examination of the paper recorder and the plant computer point for surge tank level, the inspector noted that level had started decreasing steadily during the previous 8-10 days. The inspector alerted the control room operators to the condition and they indicated that actions to investigate the cause of the anomalous level indications would be initiated.

On December 24, the inspector conducted follow-up inquiries into the licensee's investigation of the surge tank level decrease. The inspector noted that surge tank level had almost decreased to the low ACCW surge tank level alarm setpoint. When questioned, the new on-shift operations crew was unaware of the decreasing level and of any actions that had been initiated to identify the cause of the condition. No substantive action had been implemented by the previous operating crew, such as the initiation of a work request or Condition Report (CR) to investigate the anomalous decrease in surge tank level. Following discussions with the Shift Supervisor (SS), positive actions were implemented to investigate the condition and the licensee subsequently identified that the source of the ACCW leakage was from a small through-wall leak in the shell side of the CVCS Letdown Heat Exchanger. The Letdown Heat Exchanger leak was eventually repaired and the ACCW system was refilled to its normal volume.

This issue demonstrates the importance of ensuring that operators are paying close attention to control room indications for anomalous conditions and ensuring that they are taking proper corrective actions to address conditions that may be adverse to quality once they are identified.

John Zeiler, Sr. Resident Inspector, Vogtle (RII DRP Value Added Finding/RPT Number 50-425/02-04 (Minor)

QUIRKY TIDBITS

While Bill Kane was in Region I his office was hit by a tornado. How many people can make that claim? Fortunately Bill was visiting a site that day. Had he been sitting at his desk he would have been seriously injured or killed according to a Region I news account. His office suffered extensive damage. The editor asked Bill if this experience netted any spiritual realizations--Bill said that it was time to move to headquarters!

WHAT ARE YOU LOOKING AT?

This is Region II's Inspection Planning Model. An electronic version is available on ROP's Digital City under the March Inspector Newsletter.

INSPECTOR NEWSLETTER

Issue 03-3 May, 2003

Our goal is to provide useful and succinct information to inspectors.

PEN SCANNERS--Are They Useful and Will They be Made Available?

I'm sure some of you have heard that IIPB conducted two IT initiatives pilots: one utilizing pocket PC technology and the other utilizing pen scanner technology. The pen scanner pilot evolved as a result of a suggestion from Dave Beaulieu, former Calvert Cliffs, SRI, (yes, we do listen to your ideas). Our friends, Tom Rich and Mike Williams in OCIO, bought pen scanners for 12 participants. For detailed information on both pilots go to OCIO's website http://irm29.nrc.gov/tat/default.htm
This website provides assessments and articles on new technology. Anyway, long story short, the pilot was successful. We believe that this is a useful tool for inspectors. Here is what **Gene Guthrie**, SRI, Catawba, had to say about the scanner *"When I first received it I wasn't sure what I was going to use it for but as I did my job and looked for a way to use it, it has become a useful tool"*. Here is what **Jamnes Cameron, Sr.** Radiation Specialist, Region III had to say *"It saved me from having to hand-write notes. I could then beam to my handheld and incorporate into a written report on my desktop"* (wow, he is on the ball) and here is what **Pat Louden**, former Clinton, SRI had to say *"Excellent device, easy to learn how to use. Especially useful to scan excerpts directly into an existing document"*. We asked what the inspectors actually scanned and here's what they said: work control procedures, correspondence, plant procedures (procedure titles), training records, technical specifications, and portions of control room logs.

Why are we telling you all of this? Because IIPB was able to secure unplanned funds to provide some of you with pen scanners. NRR is purchasing 167 scanners, of which 67 will go to resident sites. The other 100 (25 per each region) will be sent to regional IT coordinators to be distributed in DRS/DRP. Installation and support will be provided by your regional IT coordinators. We'd like feedback from you on the scanners. Please send us ideas for other technology that could help you perform your jobs more efficiently.

INSPECTOR HAPPENINGS

Region I
Mel Gray-DRS inspector to SRI Hope Creek
Robert Berryman-RI Indian Point 3
Mark Cox-RI Indian Point 3 to Indian Point 2
Lois James- RI Indian Point to HQ/IIPB
Anthony McMurtray to HQ in July
David Werkheiser-new hire, Reactor Insp. DRS
Donald Jackson- new hire, Oper. Engin, DRS
Stephen Pindale-to Sr. Reactor Insp./DRS
Kevin Mangan- to RI, Millstone 3

Region II
Mark King-acting SRI at Watts Bar
Kathy Weaver-RI/ANO is acting SRI at Brunswick until 5/30
Steve Rose- on rotation to RI at Farley
Bob Hagar- to SRI at Robinson
Gerry McCoy - to SRI at Surry
Doug Simpkins- to SRI at Hatch

Region III
Robert Orlikowski - RI at Monticello
Douglas Tharp - Reactor Engineer

Region IV
Bruce Mallett-RII, DRA to RIV, RA
Mark Satorious-IIPB/HQ to Deputy Div.Director, DRP
Jim Melfi-DRS Inspector to RI at Palo Verde

CORRECTION: Russ Bywater from SRI ANO to SRA

PREPARING FOR A VISIT BY SENIOR MANAGEMENT

Don't be nervous----we found some terrific guidance from the regions that can help make these visits go smoothly.

FOR RESIDENT INSPECTORS:

Region III's guidance "Resident Office Checklist for NRC Management Visits" provides a detailed checklist for resident inspectors to use in preparing for management visits. This step-by-step process details pre-visit activities, day of visit activities, site tours with visitors and post-visit activities. This five page document is awesome!

FOR MANAGEMENT:

Region IV's guidance "Preparation of Briefing Materials" has a great checklist for branch chiefs. We thought this was so helpful that we posted it separately on Digital City.

FOR EVERYONE:

Region I's "Preparation of Briefing Materials for Commissioner and NRC Senior Management Visits to Licensed Facilities" describes the roles of everyone involved in the process. It includes the responsibilities of the; Div. Director, Br. Chief, SRI, Public Affairs Officer and the Regional State Liaison Officer. A very useful and impressive feature is the sample briefing sheet. Do yourself a favor and check it out.

All of the documents referenced above are located on Digital City under the May newsletter. http://nrr10.nrc.gov/NRR/ROP_DIGITAL_CITY/ROP_digital_city.html

SUPPORTING OUR TROOPS FROM RIII

KUDOS to Region III for their support of war efforts. They created a website to honor Region III service personnel and their families who are engaged in war efforts. This site includes links to all branches of the armed services. To view, click on http://r3intra.nrc.gov/nrc3/heros.htm

RIII's EEO Advisory Committee invited staff to join them for PROJECT YELLOW RIBBON on May 5th. Yellow bows will be distributed in support of our troops.

NRC BUSINESS CARDS

Inspectors can obtain business cards from the contacts listed below. NRC policy on ordering business cards is posted on the internal web. Orders of 250 or more cards will be printed by the Seattle Lighthouse for the Blind. Orders under 250 can be printed by your region contact. The template for making in-house business cards is located in Informs, NRC Form 675. Here are the regional contacts that can make this happen:

Region I - Amy Linde
Region II - Melba Hawkes
Region III - Rowlene Wendoll
Region IV - Phil Longdo

INTERNAL SURVEY RESULTS

A big "Thank You" to all of you who completed the 2002 Internal Stakeholder Survey last Fall. The results have been analyzed–including your written comments. To view the complete analysis, go to ADAMS ML03870883. Six specific comments on procedures were identified and have been turned into feedback forms. Check out the list on Digital City and keep an eye there and here for updates.

REAL PROBLEMS, REAL SOLUTIONS

FOCUS ON SIMILAR COMPONENTS, SIMILAR DEFICIENT CONDITIONS

ISSUE: On January 5, 2003 at Calvert Cliffs Nuclear Power Station, the 1B Diesel Generator Breaker, 152-1403, failed to close on demand. The affected breaker was a General Electric (GE) Magne-Blast type breaker. Inspection revealed that an SBM type auxiliary switch had a broken cam follower. The cam follower is constructed of clear "Lexan" material with a steel pin running through the center of the Lexan material. Lexan is a clear polycarbonate material manufactured by GE.

The licensee inspected individual components/breakers operated by an ESFAS actuation signal that are affected by this deficient condition. The inspection focused on identifying cracking of the Lexan cam followers. Of the twenty-four breakers inspected, five, including 1B DG breaker, had defective SBM type switches. The five failed switches were from the following breakers: Service Water Pumps, High Pressure Safety Injection Pump and Diesel Generator output. The NRC inspectors on site inspected each failed switch. Results of the visual inspection revealed noticeable cracking of the Lexan material in all the removed switches. The SBM switch located on the 1B DG appeared to be the worst case. The pin had sheared and was found on the bottom of the switch. The Lexan material at that location was cracked with some pieces missing.

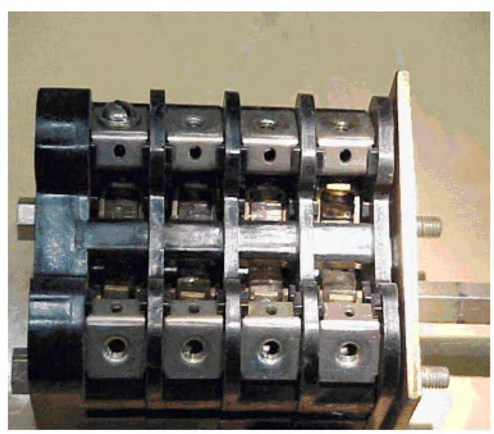
The licensee replaced the five defective SBM switches with newer SBM and SB-12 type switches. Both SBM and SB-12 switches contain Lexan cam followers. However, the SB-12 switch was fabricated with Lexan that was not exposed to hydrocarbons, a potential failure mechanism discussed in Information Notice 80-13. The additional breakers requiring inspection provide power for 1E 4KV busses for both Unit 1 and Unit 2 and four 1E 480V busses for Unit 2. These breakers are normally closed and cannot be inspected while the units are on-line.

In 1976, GE identified a problem with SBM switches that were manufactured with Lexan cam followers. Consequently, GE issued Service Information Letter (SIL) 155 to boiling water reactor licensees recommending replacement. Maine Yankee Inspection Report 95-04 notes similar problems with cracked SBM switches. The NRC issued Information Notice 80-13 focusing on failures of switches exposed to hydrocarbons. Calvert Cliffs has identified that these switches failed from fatigue.

For this issue a deeper understanding of the cam follower condition was gained by the inspectors from their visual inspections.

For more information contact:
Joe O'Hara, RI, Calvert Cliffs
Inspection Report No:2003-002.

⇓



CAN YOU RECOGNIZE THE DEFICIENCY?

Real Problems, Real Solutions (continued)

FOCUS ON DEGRADED EMERGENCY DIESEL GENERATOR

ISSUE: During a PI&R inspection, the team identified that the licensee's bases for continued operability of Emergency Diesel Generator 1(EDG 1) because of degrading bearings was weakly supported. The team independently reviewed the vibration data associated with EDG 1 and determined that the available data did not support the conclusions. Based, in part, on the vendor's review, the licensee had developed an operability evaluation that supported operability of EDG 1 for a minimum of 30 days.

The team reviewed the vibration data with the licensee and later the vendor to assess the overall bases for their conclusions. Subsequently, the licensee contracted with a second vendor to perform an independent analysis of the vibrations in EDG 1. The second vendor also concluded that the bearings would last the design basis mission time of 30 days. The team discussed with the licensee and vendor, the key assumptions used in the operability evaluation and identified areas where the vendor was unaware of or had not completely considered other information. Based on the licensee's decision that they could not rely on either vendor's analyses to support continued operation of the EDG 1, the licensee declared EDG 1 inoperable.

Following disassembly of the EDG 1, the condition of the bearings was more appreciably degraded than had been understood and the degradation mechanism, arcing across the bearings (preliminary assessment), had not been considered as a degradation mechanism by either vendor.

The importance of performing thorough reviews of the bases for licensee operability evaluations is highlighted through this finding.

For more information contact: George Replogle, SRI, Columbia Generating Station
Inspection Report No: 50-397/03-04

WHAT ARE YOU LOOKING AT?

Here are insights on the inspection and performance assessment of batteries that Gene Guthrie, the Senior Resident Inspector at Catawba, has gained through his inspection experience. They would be useful for all resident inspectors to apply in their inspection of vital batteries. Thank you Gene!

Lead Acid/Ni Cd Battery Performance Issues

- **As little as two cells outside Technical Specification (TS) limits may cause battery bank loss of safety function if remaining bank capacity does not meet load profile requirements.**
- **Elevated battery room temperatures for extended periods can reduce battery life by as much as 50%.**
- **Replacing battery cells in a battery bank could cause increased performance problems with battery bank average parameters and ability to meet TS requirements.**
- **New replacement battery cells do not charge to similar volts or have similar specific gravity values as battery cells that have been in service.**
- **Cells that are failing to meet TS parameters may be of same lot numbers.**

- **Battery cells may show trending before going outside TS value.**

- **Battery cell performance operating experience as it relates to the PSA model should be accurately reflected in Maintenance Rule functional failure criteria.**

ELLIS MERSCHOFF FACTOIDS

Alongside an impressive career with the NRC we found some interesting facts about Ellis (current RIV Administrator) that we thought were important to share before he begins his new job as Chief Information Officer in May. These facts were supplied by colleagues.

1 He swam the Chesapeake Bay Swim (4.4 miles)
2. He completed the Alcatraz Triathalon in June without a wet suit. Water temperature was 57 degrees. The event included a 1.5 mile swim, 2.5 mile run, 13 mile bike ride and a 7.5 mile run.
3. His most famous quote is “If you’re not here when I need you, why do I need you?”
4. He owns horses
5. He owns a 3/4 ton pickup truck
6. His mother (in her 80’s) completed long distance bike rides
7 He wanted to be an astronaut
8 He was on the pro arm-wrestling tour earlier in his life.
9. While a bachelor, Ellis owned and lived on a sail boat
10 He promised RIV that he would sit in a dunk tank if they met their 2002 Combined Federal Campaign goals. He did, and was dunked along with Ken Brockman and Art Howell.
11 He has promised to kiss a pig at RIV’s May picnic because 2003 Combined Federal Campaign goals were met. **WILL ELLIS KISS THE PIG?** Read the July issue to find out.

Quirky Tidbits

(b)(6)

INSPECTOR NEWSLETTER

Issue 03-4 July, 2003

Our Goal is to Provide Useful and Succinct Information to Inspectors

NOTE: THIS EDITION PROVIDES USEFUL INFORMATION TO INSPECTORS ON HOW TO ACCESS WEB-BASED PIM ENTRIES AND ADAMS DOCUMENTS

OperatingExperience Highlights

Operating Experience Guidance

A new Office Instruction, LIC-503, "Generic Communications Affecting Nuclear Reactor Licensees," has been issued to provide clear guidance on when it is appropriate to use each of the agency's four generic communication tools - the Information Notice, Regulatory Issues Summary, Bulletin, and Generic Letter. Click here for a copy http://nrr10.nrc.gov/webapps/OI/OI-listing.cfm

Operating Experience Website

To keep you abreast of domestic and international operating experience, information is provided on the Operating Experience Section's internal web site: This site includes links to documents and information such as the current event and morning reports, archived reports, generic communications, events briefings, and an archive of international events. The international events are those reported to the IAEA Advanced Incident Reporting System Database. Check it out by clicking on: http://nrr10.nrc.gov/rorp/index.html

Contact: Jerry Dozier, Reactor System .Eng. Operating Experience Section

Inspector Happenings

Region I
New Hires:
Thomas Sicola- Reactor Inspector, DRS
Manan Patel- Nuc.- Sfty Intern, DRP
Amar Patel- Nuc. Sfty Intern, DRP
Dante Johnson- Nuc. Sfty Intern, DRP
Gerald Wilson- Reactor Inspector, DRS
Harold Eichenholz- IAEA to Sr. Reactor Inspector, DRS
Other:
Anne Passarelli, Nuc. Sfty Intern, DRP
Joseph Schoppy, SRI Hope Creek, to Sr Reac. Insp, DRS
Lois James, RI IP 2 to NRR,
Mark Cox, RI, IP 3 to IP 2
Robert Berryman, Reactor Inspector to RI, IP 3
Anthony McMurtray, SRI, Peach Bottom, to Sr. PM, NRR

Region II
Eugene DiPaolo to SRI at Brunswick
Mark Giles to SRI Calvert Cliffs
Rodney Fanner to RI Farley
Daniel Arnett to RI Surry
Hollie Krex -new Site Secretary at Brunswick
Mark King- acting SRI at Watts Bar
Jim Canady- acting SRI at Brunswick
Ross Telson- acting SRI at Quad Cities
Scott Shaeffer- to RII as the Sr Project Engin.
Joe Brady- to SRI at McGuire
Binoi Desai- to R II as Sr Project Engin.
Andrew Sabisch- new PE, Branch 1
Ed Chrisnot- RI Occonnee to RI Browns Ferry
Ivan Hall-new hire/security inspector
James Shehee-new hire/security inspector

Region III
Ray Ng - New Reactor Engineer DRP
Mina Sheikh - Reactor Engineer
Robert Ruiz - Nuclear Safety Intern
Liliana Paredes - Nuclear Safety Intern
Luke Haeg - Nuclear Safety Intern
Michelle Garza - Completed Qualification Board/New RI - Palisades
Hipolito Gonzales - Completed Qualification Board/Begins NRC Graduate Fellowship Program

Region IV
Zach Dunham-RI to Columbia Generating Station
Jeff Cruz- to SRI at South Texas ProjectRick Deese - to SRI at ANO
Neil O'Keefe- SRI to RIV/DRS Inspector

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FY 02 SURVEY FEEDBACK

In the last newsletter we listed 6 feedback forms that were created as a result of the 2002 Internal ROP Survey. Here is our condensed response to Feedback Form No: 71111.07-630

COMMENT:
Frequency of some procedures could be modified for efficiency.
A - The Mods and 50.59 could be combined with the SSDPC with reduced scope or move to a 3-year cycle.
B - Heat sink could be combined with SSDPC if service water is a picked system for review.
C - Heat sink additional inspections could just look at the latest results since all the programs/GL responses have been looked at.

RESPONSE:
A. Recent revisions to IPs 71111.02 and 71111.17 changed their frequency of implementation from annually to biennially. Those changes enabled them to be implemented simultaneously with IP 71111.21 on a biennial basis thus achieving a reasonable measure of synergism. Presently, there is a regional initiative underway for the assemblage of the existing baseline inspection (BI) procedures into draft master IPs. Each region will originate one or two of the master IPs. The goal is increased synergism by eliminating any duplicate inspection activities which may occur when just implementing several existing IPs simultaneously. A pilot program will check for any gains in efficiency and effectiveness during the actual implementation of the master IPs.

B. This is possible now under current BI guidance. The existing BI program allows implementation of any combination of BI IPs simultaneously if it is justifiable based on their individual frequencies of implementation, the similarity of their inspection requirements, the available inspection opportunities, and the overall scope of the proposed inspection.

C. Whether an inspector can fully implement a particular baseline program IP is dependent on its inspection requirements and the available inspection opportunities. IP 71111.07 identifies several alternative ways to verify the functionality of heat exchangers and not all of them have to be implemented, only the one that is most suitable for the given circumstances at a particular plant. Presently, IP 71111.07 requests the inspector to determine what test/method is used for verifying the functionality of a heat exchanger, how that test/method is setup, and whether the results of the test/method verify the operability of the heat exchanger. Future inspections for this IP will review the results of whatever test/method that a given licensee selects for verifying the functionality of its heat exchangers.

CONTACT: Ed Kleeh, IIPB

In Memory of Danny Billings

Danny Billings, Reactor System Engineer, NRR, passed away on May 14, 2003. Danny joined the NRC's Resident Inspector Development Program in 1995 in RI. After completing inspector qualifications he became a Resident Inspector at Oconee. RII paid a tribute to Danny in their May DRP newsletter. They made this statement: “We will also miss his outgoing personality--he certainly stood out in a group of introverted engineers--and he was always the life of the party”.

REAL PROBLEMS, REAL SOLUTIONS

Grand Gulf Agastat Relays

Last November, the licensee experienced several relay failures which placed reactor plant safety related systems out of service and entry into unplanned limiting conditions of operation (LCO). The relays were manufactured by Agastat. The vendor drawing for these Agastat relays defines a normal service life of 10 years. The licensee decided to replace some of these Agastat relays less often than 10 years. When these relays began to fail and reveal themselves, the inspectors reviewed the licensee's condition reports and causal analysis documents and felt there was no technical justification for exceeding 10 years of service life and the inspectors challenged the licensee's decision making.

Region IV management was briefed on these conditions and ultimately decided to send a special inspection team to further evaluate the condition in February 2003

. See Grand Gulf Inspection Report 2003-06 (ml031040581).

CONTACT: Tim Hoeg, SRI, Grand Gulf.

REGION III WEBSITE

We plan to review all of the regional websites to see what may be of value to inspectors. RIII's web-site contains lots of good information and pictures. Here's what we found in Region III that may be of interest to you:

Value Added Findings

This is a must to check out! RIII took the lead in creating these findings. Value-added findings are written and distributed to communicate and share findings and techniques with inspectors and/or reviewers. Value-added findings do not have to be "Findings" as defined by MC 0612.
Value-added findings are posted by division. Findings for DRP go back to 1999. Here's an example of a value-added finding that may be of interest to you--"Inappropriate Operability Conclusion Addressing Through Wall Leakage on ASME Code Class III Piping" (VAF-2003-26). To view click on: http://r3intra.nrc.gov/drp3/vaf.htm

"Going on a Trip"

This is awesome–everything you need when traveling to a RIII site is available in one click. Per diem rates, maps, driving instructions, lodging and links to useful information while at sites are available.

> "I can not give you the formula for success, but I can give you the formula for failure, which is ...try to please everybody"
> Herbert Bayard Swope, 1882-1958

QUIRKY TIDBIT

Fiona Tobler is quirky! Despite various interests, including running, biking, swimming, yoga, Buddhism, holistic health, reading, volunteering, and more, she clearly excels in none of the above. However, she is good at talking. This skill and her interests have landed her on TV three times.

1. Her first TV appearance showcased her volunteer efforts with cat rescue (this lasted less than 2 years because it was emotional and costly--besides all of her friends started avoiding her because she hounded them to adopt cats)
2. The next TV appearance was an interview while running a 10K race thru Antietem Battlefield (fortunately she had make-up and jewelry on which was far more important to her then placing in the race).
3. Lastly, she was interviewed while attending a Dali Lama conference.

Fiona is managing editor of this newsletter and works in the Inspection Program Branch.

ANOTHER QUIRKY TIDBIT

Ms. Mary Ann Ashley, the IMC 1245 guru, drives a PT Cruiser with orange flames!

DID ELLIS KISS THE PIG?

Yep, he sure did. Ellis kissing Petunia the pig!

Plant Issues Matrix (PIM) Information Available!

Check out the next page–you may find something of great interest! Conchita See, NRR's Dynamic Web-Page Expert, redesigned the ROP PIM Database. Just in case you didn't know, you have access to PIM information beyond that posted on Digital City. This database allows you to review all findings since the ROP has been in place. You can sort by inspection procedure, system, cornerstone or issue significance. To view the database click on :

http://nrr10.nrc.gov/rps/dyn/rop_ir1_select.cfm

Dynamic Web Page

ROP PIM Report Select by
Procedure, Cornerstone, Word Search - Selection Page

(1) **Sites**
- ◉ All ○ 1 ○ 2 ○ 3 ○ 4
- ○ Select from the list
  - Arkansas Nuclear One (R4) - ANO
  - Beaver Valley (R1) - BV
  - Braidwood (R3) - BRAI

(2) **Event Date** - *There are no ROP data prior to 1998*

From: [ ] *01/01/2002* To: [ ] *05/01/2003*

(3) **Procedures**
- ◉ All
- ○ Select from the list:
  - 2515/142, Draindown During Shutdown and Common-Mode Failure (NRC GL 98

(4) **Cornerstone**
- ◉ All
- ○ Select from the list
  - Initiating Events
  - Mitigating Systems
  - Barrier Integrity

(5) **Significance**
- ○ All
- ◉ Greater than Green (White, Yellow, and Red)
- ○ Select from the list:
  - Green
  - White
  - Yellow

(6) **Item Types**
- ◉ All
- ○ Select from the list
  - Apparent Violation
  - Finding
  - NonCited Violation

(7) **A wildcard search of the PIM or leave blank for ALL.**

Tips: To expedite your search, use two or more key words. The search is not case sensitive and will do partial word search. Use both boxes below to enter the key words.

[ ] (example: reactor coolant)

and

[ ] (example: leakage)

(8) **Select sort order and total by**
- ◉ Item Types, Cornerstones, Event Dates, Sites
- ○ Cornerstones, Item Types, Event Dates, Sites
- ○ Sites, Event Dates, Item Types, Cornerstones
- ○ Sites, Cornerstones, Item Types, Event Dates

(9) **Page Format** ◉ Detail ○ Summary

(10) Click [Go]

DISCOVER THE POWER OF WEB-BASED ADAMS

Have you ever needed to investigate if a generic communication was written on a topic, plant, or piece of equipment? An easy and powerful way of searching Operating Experience is now available using Web-Based ADAMS. Here's how to do it:

Go to the Internal NRC Home Page (the one that comes up when you click on Netscape Communicator)

In the list, find, under Computer Resources, find "Web Based Access to ADAMS," click on it.

Go to the mid-page of the Web Based Access Page and click on "Advanced Search"

Before beginning the search click on "Results Field Option," This allows you to select the information that you want displayed on the Search Results list.

Go to the bottom of the page and click on "center hit" (This will produce sentences with your search words identified in your search results list)
After making your selections, click on "Save Selections". This will take you back to the ADAMS Advanced Search Page

Go down the list to the Document Type Field, Depress "Click From Known Values"

Select NRC Information Notice (or other type of Generic Communication, such as NRC Generic Letter or NRC Bulletin, etc). Click on "Select Values"

Now you are ready for the search. Notice under the Mode that you can use Concept, Pattern, or Boolean. Boolean is the most powerful because you can use logical connectors such as OR or AND between the words that are to be searched for. Select the Mode desired. If you have questions there is an online HELP file that you can refer to for help.

Now type your search word in the "search" field and click on the "Search" button

Notice the title, image file, and sentence in the retrieved document with your search words are included. Click on the title to retrieve the text of the document with your search words highlighted. If you want a clean copy of the document then click on the image file.

You can also do this with the other document types associated with operating experience such as: Inspection Reports, Licensee Event Reports, Part 21 Correspondence, NUREGS, and others!

Thanks to Jerry Dozier, OE Section for providing instructions. Tom Smith, Chief, Public Document Room/Library Branch, OCIO, is available to assist you with searches. Please provide comments or feedback to Tom at 301-415-7204.

INSPECTOR NEWSLETTER

Issue 03-5 September, 2003

OUR GOAL IS TO PROVIDE USEFUL AND SUCCINCT INFORMATION TO INSPECTORS

STORY TELLING

By Tom Farnholtz

TROPICAL STORM CLAUDETTE

It is true that sometimes the best plans may not turn out as you expect. Such was the case the week of July 13, 2003.

The previous week, Region IV was tracking and monitoring tropical storm Claudette as it moved westward from the southern Caribbean, grazed the Mexican Yucatan peninsula, and entered the Gulf of Mexico. The weather services predicted that the storm would most likely continue to move in a westerly direction and come ashore in northern Mexico or southern Texas. The policy of Region IV is that if a tropical storm or hurricane is in the Gulf of Mexico, regional personnel will track it and have plans in place to send inspectors to affected sites. The purpose of this policy is to relieve the resident inspectors at an affected site to allow them to attend to family and property.

Region IV has three sites of particular concern when it comes to tropical storms or hurricanes. These are Waterford (near New Orleans, LA), River Bend (near Baton Rouge, LA), and South Texas Project (near Bay City, TX). The most likely site to be affected by this storm was South Texas Project but plans were in place for the other sites in the event of the unexpected. On Friday of that week, travel arrangements were made to get inspectors to these sites on Sunday, July 13 in advance of the beginning of the window when the storm could affect one of our sites, based on the current prediction.

(Continued on the next page)

INSPECTOR HAPPENINGS

Region II
Phil O'Bryan-new PE, DRP
Jim Reece-acting SRI @ Watts
Bob Hagar-SRI @ Robinson
Bob Monk-RI @ Browns Ferry
Shakur Walker-RI @ McGuire
Kathy Weaver-SRI @ Turkey Point
Len Wert-to Deputy Div.Director/DRP
Randy Musser-SRI @ Harris
Region III
Pat Higgins-new Reactor Engineer, DRP
Region IV
Travis Rhodes-RI @ Wolf Creek
Eddie Crowe-RI @ ANO
John Dixon-RI@ANO
Geof Miller-RI @ GG

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These arrangements were done on very short notice and required the location and reservation of four wheel drive vehicles that inspectors could drive to the site if the need arose. This was not as easy as it sounds because the inspectors would be leaving from their residences which were not necessarily located near a large airport where a car rental agency would normally be found and open on Sunday.

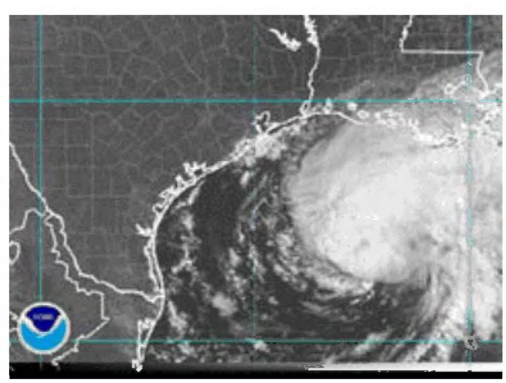
Based on the predictions from the weather folks, a decision was made to not travel on Sunday. This was due to the slow movement and a turn to the north. A westward movement was still predicted but the timing was uncertain. On Monday, a Region IV inspector traveled to South Texas Project for a planned site visit. A second inspector was dispatched to the site when it became increasingly obvious that South Texas Project was most likely to be affected. The reason for this was to cover the site 24/7 for as long as the storm was in the neighborhood.

By Monday afternoon, the storm was predicted to turn more westerly and pick up strength. South Texas Project was in the cross hairs or very close. The two regional inspectors planned to return to the site early Tuesday morning prepared to stay as long as was required. The resident inspector was cut loose on Monday to take care of his house and family and asked to return to work whenever it was safe to so. During the night, the storm sped up and made the expected turn west. It was upgraded from a tropical storm to a Category 1 hurricane (sustained winds greater than 74 MPH).

By the time the storm made land fall just a few miles south of the South Texas Project site, the inspectors were in the Unit 1 Technical Support Center. The licensee had released all non-essential personnel and staffed up the TSC. The site was in the northwest quadrant of the storm. This was not good news because this was where the worst rainfall was located. Unit 1 was shutdown and in a forced outage to repair the bottom mounted instrumentation nozzles in the reactor vessel and Unit 2 was operating at 100 percent power. By procedure, Unit 2 would be shutdown if the sustained winds on site were predicted to be greater than 74 MPH. These conditions were not expected.

Throughout the day, the Region staffed the Incident Response Center in the Monitoring mode and the Headquarters Incident Response Center was standing by to assist as required. Headquarters was conducting a drill in their IRC on this day which provided an opportunity to conduct two event responses simultaneously. A reactor safety counterpart link was established between the site and the Region IV IRC.

The storm was fast moving and the conditions on site deteriorated quickly. The inspectors monitored the wind speed, direction, and precipitation on site using the primary and secondary met towers. At the height of the storm, the primary tower failed to provide good data. The maximum wind speed on site was about 63 MPH with maximum gusts to about 80 MPH. There was a significant amount of rain but not as bad as anticipated because the storm was moving fast through the area. The licensee evoked 50.54(x) to pull all personnel from the outside for safety reasons. It would have been dangerous for a person to be outside in those conditions. During the storm, we attempted to conduct a secure conference call between the site and a Region IV security inspector to provide details of this aspect of the event. Equipment problems made this difficult but the information eventually got transmitted.



By Tuesday afternoon, conditions on site were improving. When the winds subsided enough to send people out to do damage assessment, the licensee formed teams to walk down the plant and report. On-site damage was minimal with some insulation damage on the exposed turbine deck, fire hose houses blown over, and some light poles at the training center came down. The biggest concern was that most of the emergency sirens lost power because of widespread power failures. Power to these sirens was not expected to be restored for some time. Alternate means of notifying the public in case of a plant emergency were credited.

By the time it was all over, a list of items had been generated for equipment repair and cleanup activities. These were prioritized and put into the licensee's work control program. Once assessments had been made, the region, with concurrence from headquarters, determined that the IRC personnel and the on-site inspectors could be released late Tuesday afternoon. The on-site inspectors left the site and drove back to Bay City. The effects of the storm were obvious from the damaged agricultural crops, the non-functioning traffic lights, and the precariously leaning telephone poles.

After the storm had passed, the National Hurricane Center determined that this storm had maximum sustained winds of 90 MPH and was the cause of three deaths. Certainly, the NRC has had to deal with worse storms (Hurricane Andrew comes to mind) but the unpredictability and potential for serious injuries and property damage serve as a reminder that we all need to be ready to change our plans to come to the aid of our fellow inspectors as the need arises. If you are assigned to a site that is subject to the effects of a hurricane, it's nice to know that there are people in both the regions and headquarters that are there to help.

The editorial board appreciates the time and effort it took to write this article. Story telling is a very effective way to transfer knowledge and experience. Thank you Tom!

OPERATING EXPERIENCE CORNER

A new Reactor Operating Experience (ROE) information system has been developed to provide a search mechanism for Event Notifications, Regional Morning Reports, and Power Reactor Status Reports, as well as providing issue tracking and reporting tools for the NRR Operating Experience Section (OES) and providing the mechanism by which Regional Morning Reports are generated. ROE utilizes recent database advances to fully integrate OES tasks and event analysis with existing NRC operational data. ROE replaces the previous information system used by OES, known both as the Events Tracking System - ETS, or PC Integrated events - PIE. This previous system was DOS based and needed to be replaced to support the upgrade of the NRC's operating system to Microsoft Windows XP in 2003. **The OES staff will be happy to perform searches to support your inspection needs** and, in the future, will be examining the viability of making the system available NRC-wide.

Contact: Eric Benner, Sr. Reactor Engineer, Operating Experience Section, 415-1171

Fire Incident at TMI, Unit 2, and Appropriate Use of Water for Rapid Fire Extinguishment

SPLB staff received compliments from a licensee and from the resident inspector on Information Notice (IN) 2002-27, "Recent Fires at Commercial Nuclear Power Plants in the United States," which was issued on September 20, 2002. This IN communicated lessons learned from recent fire events and reinforced the importance of de-energizing electrical equipment and of the proper use of water for rapid fire extinguishment. On July 2, 2003, TMI Unit 2 experienced a 480V dry transformer fire. The fire brigade and off-site fire department appropriately used water to quickly extinguish the fire. The TMI resident inspector wrote:

"I received very positive feedback from the TMI station fire marshall concerning your IN 2002-027 on recent fire events at nuclear power plants. TMI' s fire brigades trained extensively on the lessons learned detailed in the IN. That training was extremely valuable in their fire fighting strategy for the recent transformer fire."

This event illustrates how quality operating experience communications promote the NRC's mission to maintain safety. If you identify significant or recurring events or inspection findings appropriate for generic communication, please bring it to your supervisors attention. You may also contact Terry Reis of the Operating Experience section for specific guidance. Terry can be reached at 415-3281

DID YOU KNOW THAT.....

Dr. Stuart N. Sheldon, a Reactor Engineer in RIII, DRS, achieved a significant professional accomplishment co-authoring a control systems engineering textbook. The text, *Linear Control Systems Analysis and Design with MATLAB,* Fifth Edition, was published and made publicly available on August 14, 2003. The text emphasizes bridging the gap between theory and practice, providing the mathematical basis and realistic examples for the different design methods. The text presents a clear and thorough account of feedback control systems, which enables the readers to gain a complete and practical understanding of conventional, and modern control theory.

Dr. Sheldon received his PhD in Stochastic Estimation and Control from the Air Force Institute of Technology in 1989. From 1990 to 1999, he worked for the Air Force Wright Laboratory, initially on active duty, then as a contractor in various positions. During that time, he collaborated with his co-authors on robust flight control related research programs. Dr. Sheldon was asked to contribute to the fifth edition of the textbook, providing new material on digital control and the use of modern computer software for control system design. Dr. Sheldon joined the NRC in 1999, and is responsible for conducting various Reactor Oversight Program inspections.

(b)(6)

WE SAY WAY TO GO---CONGRATULATIONS!

QUESTION: HOW TO DEVELOP A RESIDENT INSPECTOR?

This came from a newly appointed SRI who wanted to do a great job in developing his RI. He did a smart thing---he contacted some of the SRI's he respected and received some good guidance. The SRI's were happy to share information. Note that these are not management recommendations or IIPB policy but instead feedback from inspectors such as yourself. Here are some suggestions:

1. Participate on reactive /supplemental inspection teams
2. Assist other regions in inspection support
3. Participate on DRS teams, SSDIs, etc.
4. Go to region and perform duties as PE (even if only for a few days)
5. Participate on PI&R inspections at backup facility
6. Give RI visibility to management
7. Make things happen for the RI. For example, if a manager is coming to the site let the RI conduct the tour or debrief
8. Make sure that if the RI is on a rotational assignment (even for a few days) that you get performance appraisal input
9. Volunteer the RI for a task at the region's counterpart meetings (e.g. make presentation on event)

If you have other suggestions or ideas we would love to share them. More importantly, if you would like to pose a question use the newsletter as a forum to receive replies. Please contact your regional editorial board member or Fiona Tobler.

REAL PROBLEMS/REAL SOLUTIONS

: QUESTIONING ATTITUDE
"It has always been that way"

How does an inspector react when they hear, *"it has always been that way"*? Is their reaction different if they hear this at a meeting from one individual or from an informal conversation with a member of the plant staff? At Brunswick, the RI, Joe Austin, noticed water running from a building roof drain located inside the RCA to a storm drain located outside the RCA. The run off water from this storm drain is collected by a storm drain collection tank, monitored for radiation, and then pumped to a pond for subsequent release to the environment. A rad monitoring system (RMS) isolates the tank if out of limit rad levels are detected. However, the inspectors determined that the RMS for the tank had been bypassed approximately 10 years ago due to problems with spurious alarms by the system. Therefore, the licensee had been taking daily samples as a compensatory measure - a satisfactory, but less frequent sampling method. Degraded conditions can be accepted as normal plant operation over time. As the inspectors continue to ask questions, the licensee was motivated to further review the status of the radiation monitoring system. The licensee found that the problem had been resolved about a year ago, but the RMS unit was still in bypass. The RMS was taken out of bypass. From this display of a questioning attitude by the inspectors the licensee realized a different operating status of a rad monitoring system designed to protect the environment. **BOTTOM LINE: TRUST YOUR INSTINCTS.**

For further information contact: Joe Austin, RI, Brunswick, 910-457-9531

Inspector Tips For Strainer Inspections

Debris intrusion events have the potential to be very safety significant. Several facilities have experienced degradation of service water systems due to debris from cooling water sources or fish intrusions. Important vulnerabilities for inspectors to consider include the use of cross-tied systems, common circulating water and service water intakes, early warning indicators, and backwash operations. Inspectors should consider using the following list of items to assess the susceptibility of a facility to a debris intrusion.

Debris Intrusion Target Items

1. Degradation of Physical Barriers
-- Traveling Screens: Are the traveling screens corroded or physically damaged?
- -Strainer Baskets: Are there bypass routes around the basket rim and discharge outlet or holes/tears in the basket mesh?
- -Heat Exchangers: Do heat exchangers have excess fouling or debris?
--Marine Life: Are devices used to deter marine life (chlorine injection, strobe lights, ultrasonic vibration, and air injection systems) functional?
--Backwash System: Is the drain line clogged?

2. Testing Procedures
--Service Water Realignment: Are valves and associated equipment necessary for re-alignment routinely tested?
--System Cross-Tie Valves: Are system cross-tie valves and associated equipment tested?
--Heat Exchanger Performance: Are the results of heat exchanger performance testing satisfactory?
--Backwash System: Is the backwash system operation periodically tested?

3. Procedural Adequacy
--Screen or Strainer Breakthrough: Do procedures exist for rapidly securing all circulating water pumps to prevent debris from being introduced into the service water system?
--(For common intake areas) If traveling screens become clogged with debris, do procedures for securing circulating water pumps ensure an adequate service water supply exists for safe-shutdown?
A. If circulating water pump operation is stopped automatically upon receipt of a forebay low level signal, verify that this feature is tested.
B. If circulating water pump operation is stopped manually, verify that operators have received sufficient training for these actions.
C. If actions include the dispatch of operators to the intake house, verify that those personnel have received sufficient training in the recognition of severe debris intrusion events.
--Early Warning Procedures: Do procedures exist to prepare for seasonal fluctuations in marine life or debris loading? Are operators aware of conditions which may cause a temperature gradient at the intake facility?

4. Design Review
--Strainer Basket/Traveling Screen Analysis: Review the structural evaluation of the strainer basket or traveling screen assembly. Have all credible failure modes due to high debris loading been considered (e.g., buckling and crushing of the basket mesh due to high differential pressure)?
--Heat Sink Availability: In the event that traveling screens become clogged with debris, review the intake forebay low water level setpoints for securing the circulating water pumps. If the intake forebay is required, will the source be threatened by the same debris intrusion event? If a source of makeup water to the intake forebay is required, will the intake forebay retain an adequate water supply for safe shutdown?

--Backwash System: Do the strainers rely on their own discharge as the source of backwash flow? If so, debris clogging may render backwash flow insufficient to clean the strainers.

About the author: Dustin Reinert was a RIV Summer Intern and is currently a Mechanical Engineering senior at the University of Texas. Dustin's summer engineering project involved a review of debris intrusion events at D.C. Cook, Diablo Canyon, and South Texas Project. **Kudos** to Troy Pruett, RIV, Br. Chief, for highlighting the accomplishments of a summer intern.

Tech Downloads...

Marc S. Ferdas msf2@nrc.gov Resident Inspector - Hope Creek

Tech Downloads is a new addition to the Inspector Newsletter. We hope to share a variety of "tech" information. If you have a tip, a website, etc. that you think would be useful for other inspectors to know about please let Mark know. Questions will also be accepted.

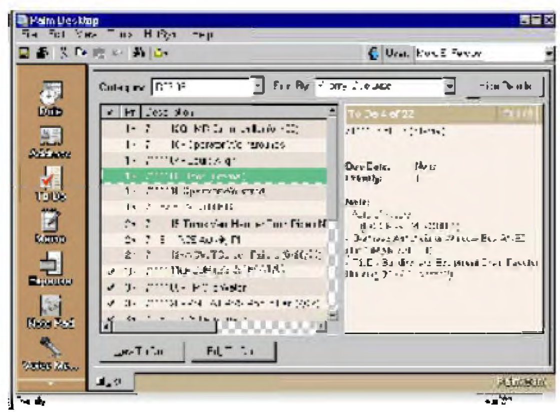
Download of the Month

PDA "To Do List"

Since the "To Do List" allows you to create new categories, you can use this list to manage and track the inspection procedures performed and the issues you are monitoring during an inspection period. For example you can create a "To Do list" called IR 03-06 (aka inspection report 2003-06).

Within each list you can make a procedure or issue into a "to do" item in that list [i.e., 7111122 - ST RHR Pmp (8/24)]. You can then assign a priority to each item, with each priority equating to a status for that item [i.e., Priority 1 = not started, Priority 2 = work in progress, Priority 3 = complete and documented. You can also add a note to a "to do" item. This can help you access notes and thoughts easily and quickly for a "to do" item. For example you can keep track of people you talked to and procedures and documents you reviewed. You can also assign due dates for when you want to start or finish an item, which will appear in your calendar.

As you can see the "To Do list" can help you manage and keep track of your inspection efforts.



Picture of Palm desktop software, "To Do List" Screen

QUIRKY TIDBIT

Marty Farber is a quirky guy who'll be retiring from the NRC in October. Marty's interest range from music to collector cars. A technical career was not one of Marty's first choices. Marty first attended Cleveland Conservatory of Music then dropped out to pursue jazz interests. He then attended Fairleigh Dickinson University where he studied Political Science and reigned as a doubles table tennis champion until the love of cars pulled him away to pursue a career as a professional drag racer. Marty then joined the Navy and it was while in the Navy when Marty got into the engineering arena (electrical). Marty's quirky interests are still alive and well today as he is a member of a community symphony and has three vintage cars, a '61 Austin Healey, a '67 Ford Fairlane 500, and an '87 Mercur XR4Ti.

NEW INSPECTOR TOOL

The Phase 1 SDP Worksheet is now available in a format for those inspectors who want to complete it using Word Perfect. You can find the form on ROP Digital City near the bottom of the page. This is made available courtesy of Bob Hagar who sent us this suggestion via a feedback form. Thanks, Bob!

INSPECTOR NEWSLETTER

Issue 03-6 November, 2003

Our goal is to provide useful and succinct information to inspectors.

The material presented in this newsletter is for informational purposes only and does not necessarily reflect official agency guidance or policy. Approved Reactor Oversight Process guidance is promulgated in NRC's Inspection Manual.

INSPECTOR IT INVOLVEMENT

Marc Ferdas, RI, Hope Creek, and Jamnes Cameron, RIII, Sr. P.E, are representing inspectors at the OCIO's quarterly IT counterpart meetings. They attended their first meeting in July. They provided inspector perspective to regional IT coordinators and OCIO staff, including Ellis Merschoff, Director, OCIO. Jamnes did a presentation on "IT and the Art of Inspection". Additionally, they briefed Stu Richards, IIPB and Doug Coe, IIPB, on uses of pocket PC's, pen scanners and GPU devices. Both Marc and Jamnes did an outstanding job representing inspector needs.

WHAT'S NEXT? Marc and Jamnes have been given pen tablets to identify efficiencies and potential uses for inspectors. Marc suggested exploration of a **personal digital pen**. This pen has an optical sensor and digitally captures handwritten notes. We plan to conduct an assessment to determine if a pilot is appropriate. We will keep you posted.

WE HEARD that some of you may have been surprised to receive **PEN SCANNERS**. The May Inspector Newsletter discussed the scanners and distribution plan. Please contact your IT coordinator if you need assistance.

INSPECTOR HAPPENINGS

Region I

New Employees

Theodore Wingfield- Reactor Inspector, DRS
Marlone Davis- to Reactor Inspector, DRS
Mark Giles- SRI, Calvert Cliffs
Peter Presby- from Comanche Peak to Reactor Inspector, DRS

Reassignments

Paul Cataldo- SRI, Beaver Valley
Dave Kern- SRI, Three Mile Island
Fred Jaxheimer- Intern to RI, Susquehanna
Javier Brand- RI, Three Mile Island
Shri Iyer-Intern to Reactor Inspector, DRS
Melvin Gray- from DRS to SRI, Hope Creek
Dan Schroeder- from DRS to RI, Peach Bottom

Region II

Andy Sabisch-RI, Catawba
John Hanna-Acting SRI, Turkey Point
Charles Patterson-SRI, Farley
Susan Andrews-Site Secretary, Robinson
Lee Harmon-Acting Site Secretary, McGuire

Region III

Marty Farber-SR. Reactor Inspector, Retired
Jim Belanger-Sr. Security Inspector, Retired

Region IV

David Dumbacher-PE, Branch D
Veronica Klein- NRR intern to Comanche Peak
John Dixon-RI, ANO
Ron Cohen- PE, Branch B

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REGION 1 WEBSITE REVIEW

VALUE ADDED FINDINGS are now being developed in Region I. We found some other good stuff on the DRP web-site that may be of interest to you. There is a list of subject technical experts and a DRP weekly calendar. To view Value Added Findings click on http://r1ntweb.nrc.gov/drp/Drp.htm

REAL PROBLEMS/REAL SOLUTIONS

When You're Feeling Down in the Sumps by Joe Schoppy

On June 9, 2003, the NRC issued Bulletin 2003-01, *Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors*, to all pressurized-water reactor (PWR) licensees. In their follow-up to Bulletin 2003-01, Ginna Station identified two bypass paths (approximately 45 square inches total) around their ECCS sump screen. Based on the potential risk significance, NRC Region I charted a Special Inspection team to evaluate the condition. Ginna corrected these bypass paths and also removed three drums of solid material (primarily boric acid residue) that had covered the sump floor. Chemical analysis indicated that the residue was at least 8 years old with a recharge within 18-22 months (most likely deposited during their last refueling outage). The NRC requested that Ginna hold on to the material in the drums until the team had an opportunity to inspect.

Although the licensee was essentially finished inspecting, correcting, and cleaning their sump; the NRC team still managed to find additional deficiencies. Although requiring additional confined space training, radiological control briefings, and double anti-C's; the team insisted on performing an internal inspection of the dry sump [**practice ALARA but go the extra mile**].

The team identified two additional bypass paths, a missing nut on a reactor coolant drain tank support pedestal, undersized washers for bolts on the bottom of the sump screen, a loose nut on a screen support bolt, foreign material in the sump (a wood splinter, tape, a piece of burlap), and an abandoned conduit (bolted in but retired in place) [**attention to detail**]. Although requiring additional radiological briefings and controls, the team insisted on performing an independent assessment of the material (reported to be "just boric acid residue") in the drums [**trust but verify**]. The team found numerous miscellaneous foreign objects (uni-strut clamp, woven gasket, metal file, and assorted smaller debris) intermixed with the boric acid residue that the licensee had removed from the "clean side" of the sump [**caution: boric acid residue allowed to accumulate in the sump masked debris present in the sump**]. In addition, the team identified a potential design deficiency with respect to the actual screen mesh size [**good questioning attitude**]. (The Ginna UFSAR states that the screen excludes particles greater than 0.25 inches in diameter from the RHR pump suction. The actual screen mesh size is 3/16" x 5/8". If all potential debris was spherical in nature, the team would not have questioned the operability of ECCS components downstream of this screen.) Ginna engineering performed operability evaluations for the sump bypass, debris, and screen mesh size issues. [Team members included: Jamie Benjamin (RI DRS), Chris Hunter (RES intern currently assigned to Ginna), Mark Marshfield (Ginna RI), Wayne Schmidt (RI SRA), and Joe Schoppy (RI DRS).]

Persistence and Teamwork Lead to White Finding at Dresden

In July 2001, a Dresden Unit 3 scram caused the initiation of HPCI, and generated a water hammer that damaged a pipe support. The licensee discovered the damaged support and documented it in a condition report (CR) and an apparent cause evaluation (ACE) as a potential water hammer. The support was not repaired.

Subsequently, licensee management rejected the ACE and extended the due date for repairing the support from November to December 2001. While reviewing CRs, the Resident Inspector recognized the CR, ACE, and extended repair date as a potentially significant problem **(be alert for safety issues)**. The Resident contacted the Regional specialist in this area, who quickly recognized that signs of a water hammer were present (**seek clarification when needed)**. The licensee would not acknowledge the potential problem and continued to consider HPCI operable and did not promptly repair the support. The inspectors involved Regional management **(communicate)** who also concluded that this was a potentially significant issue.

Senior Regional management and staff, including the inspectors, conducted phone calls with senior licensee management where the Region presented evidence that the HPCI system experienced a substantial water hammer, that the original support should be repaired, and that the HPCI system should be considered inoperable, at least until the damage was repaired and the system was properly vented. The licensee continued to maintain the position that there was no proof of a water hammer and therefore HPCI was operable. The Regional specialist was dispatched to Dresden and walked down the system along with the resident and the licensee's specialists **(verify through direct observation)**. Additional evidence of a water hammer was identified. However, the licensee continued to defend their original position. Licensee statements during the NRC's inspection gave rise to the belief that a 50.9 violation may have occurred and OI help was requested. The licensee fixed the original support on September 30, 2001. When the licensee did vent the system, substantial air was discovered, thus providing part of the mechanism for generating a water hammer. The water hammer was confirmed in October when the licensee's fast acting recording system was discovered to have recorded a large pressure spike on the system.

Outcome: Subsequently, Regional inspectors devoted substantial effort to inspecting the HPCI failure and evaluating licensee operability analyses. Ultimately, a WHITE finding for HPCI inoperability and a 50.9 violation were proposed. At the enforcement conference, the licensee acknowledged a cultural problem of trying to defend their original position instead of **objectively evaluating the facts with safety in mind**. The teamwork and perseverence by the Resident Inspector, the Regional specialists, and OI resulted in the discovery and resolution of a safety significant equipment issue and identification of an organizational culture that was insensitive to this safety significant event. **Contact** the Dresden Resident Inspector Office or the Region III Mechanical Engineering Branch with questions regarding this issue.

OPERATING EXPERIENCE

BWR FUEL CHANNEL BOW AND CONTROL ROD INTERFERENCE

WHAT IS IT? Elongation of one channel face relative to opposite fuel channel face.
WHAT HAS HAPPENED? There has been some notable control rod performance problems at some BWRs.
POSSIBLE CAUSES? Initial manufacturing/stress relaxation, fast fluence gradients, and/or shadow corrosion.

Sam Hansell, SRI, Susquehanna, briefed on this topic at the Operating Reactor Events Briefing on October 15, 2003. NRR management--Jim Dyer, Bill Borchardt, John Craig, Susie Black and Cindy Carpenter were present as well as a host of others. Here's what John Craig had to say **"the slides and presentation were excellent".** Jim Dyer also noted that this was an exceptional presentation.

Sam and Blake Welling, Resident Inspector, Limerick, worked together on the slides. **WE** wanted to know what made these slides so good so **WE** asked. Sam and Blake did a "dry run" by providing regional training and received feedback before and after the training to improve the focus of the topic and to stick to the most important points. Prior to the HQ presentation, Eric Benner, OE section, revised the slides to improve the focus for NRR managers. Here's what Sam had to say "we need to know who our audience is for any verbal or written presentation and alter the message for the group of interest", and "it is difficult at times to accept critical feedback and use the information to improve a written product. The less defensive we are the better for the entire agency". You may want to consider tossing aside that **EGO** when finalizing briefing slides.

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Click on http://nrr10.nrc.gov/rorp/index.html for a complete set of slides.

FEEDBACK FORMS

Oh my gosh, do you believe that IIPB has the nerve to utter those works! We know what lots of you think about this process. **DARK HOLE, UNTIMELY, UNRESPONSIVE**, just to name a few adjectives. Seriously, we know that we have lots of work to do to gain your confidence in the process. More to follow on upcoming improvements, **BUT**, in the interim, we want you to know that from May, 2003, to September, 2003, we closed 76 feedback forms. This is a big improvement from the previous 5 month period during which we closed 40 feedback forms. In case you may have forgotten if you submitted a feedback form check out digital city under feedback--you will find several feedback reports. Contact the lead reviewer **OR** Fiona Tobler for the status. We want you to use the process because we need and value your input.

QUIRKY TIDBITS

Michael Miller, Resident Inspector, River Bend Station, has a quirk not common in the nuclear industry. He is an actor (no, really). He was in the drama club in high school. He and Delta Burke (you might remember Delta as "Suzanne Sugarbaker " in the TV series Designing Women) had the lead roles in the senior class play. Both he and Delta were summoned from backstage to "front and center" right after opening night and offered an opportunity to audition for a role in a traveling production (all costs paid and a token allowance) that would result in admission to Rollins College on scholarship with 12 credit-hours for spending the summer doing the play. Michael, however, had already enlisted in the Navy's "delayed entry program." He contacted the recruiter and was informed the deal was irrevocable. Michael had to decline the offer from Rollins. Delta is now rich and famous, Michael is not. **{HE MAY NOT BE RICH BUT WE HOPE THIS NEWSLETTER WILL MAKE HIM FAMOUS}** Michael has performed in two plays since then, one while attending Nuclear Power School and one during his assignment as the River Bend Resident. Michael is also a skilled web developer and designer using asp.NET and SQL-Server 2000.

SRI INSPECTOR ADVICE

"A BRANCH CHIEF'S PERSPECTIVE"

BASIC STUFF

1. Always look forward, even if going slow, when discussing issues with your Branch Chief (BC). Remember there are three choices for people: Lead, Follow or Get Out of the Way. The last choice are for people who want to stop and talk philosophy, when forward movement is needed. Good SRIs should Lead.

2. Never get emotional about a technical issue or someone's position.

3. Always look at the resident office, the Region and HQ as a team, when you discuss with the BC or Senior PE.

4. Major Motto: "Never upset anybody you need." For instance, we all need HR and NRR to work with us. If you badmouth either party and they hear about it, or send them a "flaming" email, what do you think their reaction will be the next time you really need their help? If you do have a problem, give it to the BC. From the Region, he can figure out the best way to get the message across without burning too many bridges.

5. Work closely with the Senior PE. Both of you are equals in grade. Work as a team getting things evaluated and reports in good shape. He is a good sounding board on something that may not feel exactly right to you, but you can't seem to see the right way to go. Not knowing the details, he may be able to provide some "forest" perspective on the issue. If, after both the SRI and Senior PE review a report, the BC has to make major revisions or ask many questions, both SRI and Senior PE may sustain a "significant emotional event."

EXTERNAL-TO-SITE STUFF

1. Never imply that you "can't" do something that the BC asks you to do. State that you will try to do whatever he asks, within your ability. Try to calmly explain limitations of what you can do, while you are explaining your intention to give it your best shot. If you believe what they ask for is really "inappropriate," do your best to get the message across to him that what he proposes is not a good idea for ANYBODY to do.

2. Ensure you know what issues the BC wants you to call him (or the Senior PE, if acting) about and when. This is especially important during the night, and to support the morning DRP/DRS meeting. BCs normally take the position that "no news is good news". Also, whoever is acting for you needs to know the BC's contact requirements. Additionally, faxing daily outage info, normally provided by the site, to the BC helps minimize calls during outages. The DD or RA should not know about some plant events before the BC. Never let the BC get "set up".

3. If explaining something technical to a BC or DD and they don't "get it," just calmly cover the area that was not clear. Try not to imply, by a statement or tone of voice, that you "can't believe they don't understand what you said and that they must be dense as a rock."

4. Ensure that you and the BC understand who at the site is in charge at all times and who is on call at the site. You are in charge at all times, unless your RI or somebody else knows it.

5. Always go through the PM when contacting NRR on an issue. If problem arises, let the BC be the heavy and not you, in any discussion with NRR staff members.

6. You are responsible for ALL technical resident office communications with the Region, NRR and licensee, unless you are gone and the RI is known to be in charge.

7. Make sure you sit down with the BC (not on phone) and have an "open" discussion of what "big picture" issues and other special things that he cares about and that you should be aware of. Also, tell him what you would like him to do for you.

8. Always provide the BC with your recommendation and why, whenever you discuss a problem with him. Mention that you have an idea of what to do even before you describe the issue, to keep him from "jumping in" with his ideas, before you give yours.

9. If you are concerned about something in the Region or HQ, ask your BC something like: "Are you aware of......". BEFORE you say: "I have a problem with ......". It will give you a better feeling of how to state your "concern"

SITE-INTERNAL STUFF

1. Always ensure that you and your RI understand each other's technical position on an issue, if in disagreement. If disagreement is not significant to the issue, let it go. If it is a big deal, and you can't reach agreement, get with the BC. Don't go to war with your RI. Let the BC take the heat and make the call.

2. Watch for RI and Region staff interactions with site secretary. There should be no excuse for loud inspector complaints to or about the site secretary. The secretary works for you and no one else.

3. Watch for any Region staff interaction problems with the licensee. Although you are not responsible for their actions, you should inform the inspector and/or Region management of perceived problems. Remember, you should contact the DRA if the licensee informs you of inspector misconduct. The Region should not hear from the licensee before you.

4. Try to see things from "10,000 feet." You need to be able to give that perspective on issues, especially in today's regulatory environment. Something may seem important from a "tree" perspective, but not from the "forest".

5. For problem solving, try to run all options out based on thinking through first: "If we went this way, what would happen?," and predict what the outcome would be for all cases. The best choice is very often obvious after you imagine the options into the future. Imagine for each option that you are called upon in the future to defend the consequences of your decision. If for any option, your only choice, without looking stupid, is to use your Enterprise communicator to plead: "Beam me up Scotty," instead of rationally explaining your decision consequences, it's probably not the right one.

6. Always think "Verify the licensee is OK" and not "Find licensee problems". If you imply by words or body language that you are doing the latter, your credibility with the licensee and the Region will go down the tubes. If you find things that appear to be incorrect, ask the licensee to help you understand why they believe things are OK. Give them the opportunity before you "jump off the cliff."

7. Never share info with the licensee information that comes from the BC, Region, or NRR management unless you get the OK from the manager. Sometimes, managers give personal opinions in discussion or may phrase things in private discussions with you, that may not be "politically correct."

NOTE: We hope you appreciate the guidance---share yours with us.

DID YOU KNOW THAT......

Gene Guthrie, SRI, Catawba, is a skilled craftsman. He has been doing woodworking since 1990. He is self-taught and creates beautiful pieces by looking at pictures. Although he has sold some pieces, most of his woodwork is for family. Gene also loves fishing and boating.

Prior to his position at Catawba, Gene, was the RI at Brunswick. Gene began his career with NRC in Region I in 1997. Gene was previously employed with General Electric and Lockheed Martin at Knolls Atomic Power Laboratory Inc.

Who said inspectors are boring? Share your hobby with us.

(b)(6)

Maple Lamp Filled with Spices

Brazilian Cherry Clock

17th Century Reproduction Poplar Cabinet with Handmade Solid Brass Hardware

RIV BASELINE INSPECTION PROGRAM CHECKLIST

RIV provided us with some good stuff thanks to the efforts of Bill Jones, DRP, Br. Chief, and company—Vincent Gaddy, Don Stearns, David Proulx, Terry Jackson, Michael Hay, Grant Larkin, George Replogle and Zach Dunham--aka Branch E. The following is one example of a baseline inspection program checklist. **Many thanks to Branch E!**

Although checklists can be useful to ensure inspection requirements are not missed, they should not take the place of a "questioning attitude".

Click on http://nrr10.nrc.gov/rop-digital-city/index.html under the November Inspector Newsletter to print out checklists for all of the procedures.

71111.15 Operability Evaluations

Objectives: Review operability evaluations affecting mitigating systems and barrier integrity to ensure that operability is properly justified and the SSC remains available, such that no unrecognized increase in risk has occurred.

Inspection Requirements	Requirements Met By:
• Operability evaluation review < Select op eval involving risk significant SSCs < Review the technical adequacy of the op eval, and verify if operability is justified < If the op eval involves comp measures, determine if the measures are in place, will work as intended, and are appropriately controlled < If operability is not justified: determine TS impact, use SDP to evaluate the risk significance of the inoperable equipment	• FSAR and Technical Specifications • Design basis calculations • Generic Letter 91-18, "Resolution of Degraded and Nonconforming Conditions" • Vendor technical manuals • IM Part 9900, "Operable/Operability - Ensuring the Functional Capability of a System or Component" • Equipment/system history • Common cause • Current technical specifications amendments • OWA list (Oftentimes this list contains degraded/nonfunctional SSCs that should have operability evaluations performed) • Ensure op eval is thorough (make sure it addresses whether or not the SSC can still perform its safety function in the degraded condition - Safety functions are discussed in the FSAR) • If you are in over your head, call for help.

Tech Downloads...

Feedback, ideas, and suggestions are welcome.
Contact: Marc Ferdas, RI, Hope Creek. at msf2@nrc.gov

Transferring Documents Between Your PDA & Desktop

by Jamnes Cameron

Reference documents come in many formats, including Microsoft Word and Wordperfect. In order to load those documents onto a handheld, you may need to convert them into a format usable by your PDA. If your device uses the Palm OS, you will need to use a second utility program (such as Documents to Go) loaded on your desktop computer to complete the conversion. On your desktop, open the conversion software application. Either click the "**Add Item**" button to add the file or drag and drop the document into the application window. Close the program and syncronize your PDA with your desktop to transfer the file(s).

If your device operates using Pocket PC, you may not need to convert it or you can use a Wordperfect utility to convert it, depending on the format of the original document. If your document is in Word format, you do not need to do anything other than drag and drop the document into the "**Mobile Device**" icon in your "**My Computer**" window. If the document is in Wordperfect format, first, open the Wordperfect program. Open the document you want to transfer. Then click on "**File**", then "**Save as**." When the save window opens, remove the ".wpd" extension in the file name window. Then click on the format window and select the "**Microsoft Word 97**" format. Click "**OK**." You will then have two copies of the same file, one with a Wordperfect file extension (.wpd) and a second with a Word extension (.doc). Drag and drop the copy with the Word extension into your "**Mobile device**" icon. If your PDA is in its cradle, the document will be automatically transferred to it.

SOME HELPFUL HINTS:

To "drag and drop" - using the left button on your mouse, click on the desired file and hold the button down. Now, move the cursor to the desired location and release the button. This will move the file from its original location to the new specified location. If you want to maintain the file in its original location and make a copy in a new location, position the cursor over the desired file. Click and release the right mouse button. A window of possible selections will appear. Click on "**Copy**." Move the cursor to the new desired location, click and release the right mouse button again. Click on "**Paste**." A copy of the document will be added to the new location.

To find the "**Mobile Device**" icon - with your PDA in its cradle, double-click on the "**My Computer**" icon on your desktop. A window will open with all of your available drives, including one that looks like a PDA, titled "**Mobile Device**."