



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

August 26, 2010

MEMORANDUM TO: ACRS Members

FROM: Sherry Meador **/RA/**
 Technical Secretary, ACRS

SUBJECT: CERTIFICATION OF THE MEETING MINUTES FROM
 THE ADVISORY COMMITTEE ON REACTOR
 SAFEGUARDS 565th FULL COMMITTEE MEETING
 HELD ON SEPTEMBER 10-12, 2009 IN ROCKVILLE,
 MARYLAND

The minutes of the subject meeting were certified on December 10, 2009 as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment:
As stated



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

December 10, 2009

MEMORANDUM TO: Sherry Meador, Technical Secretary
Advisory Committee on Reactor Safeguards

FROM: Cayetano Santos, Chief */RA/*
Reactor Safety Branch
Advisory Committee on Reactor Safeguards

SUBJECT: MINUTES OF THE 565th MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS (ACRS),
SEPTEMBER 10-12, 2009

I certify that based on my review of the minutes from the 565th ACRS Full Committee meeting, and to the best of my knowledge and belief, I have observed no substantive errors or omissions in the record of this proceeding subject to the comments noted below.

OFFICE	ACRS	ACRS:RSB
NAME	SMeador	CSantos/sam
DATE	12/ 10 /09	12/ 10 /09

OFFICIAL RECORD COPY

CERTIFIED

Date Certified: 12/10/2009

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During its 565th meeting, September 10-12, 2009, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letters, and memoranda:

REPORTS

Reports to Gregory B. Jaczko, Chairman, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Digital System Research Plan for FY 2010 – FY 2014, dated October 2, 2009
- Report on the Safety Aspects of the License Renewal Application for the Three Mile Island Nuclear Station, Unit 1, dated September 28, 2009
- Report on the Safety Aspects of the License Renewal Application for the Beaver Valley Power Station, Units 1 and 2, dated September 16, 2009
- Report on the Safety Aspects of the License Renewal Application for the Indian Point Nuclear Generating Unit Nos. 2 and 3, dated September 23, 2009

LETTERS

Letter to R. W. Borchardt, Executive Director for Operations, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Plant-Specific Operating Experience for License Renewal Applications, dated September 28, 2009

Letter to Dr. Brian Sheron, Director, Office of Nuclear Regulatory Research, NRC, from Mario V. Bonaca, Chairman, ACRS:

- ACRS Assessment of the Quality of Selected NRC Research Projects - FY 2009, dated September 16, 2009

Letter to Mr. Theodore Robinson, Esq., Citizen Power, from Edwin M. Hackett, Executive Director, ACRS:

- Response to Your August 27, 2009, Letter to the Advisory Committee on Reactor Safeguards Concerning Containment Liner Integrity at Beaver Valley Power Station, Units 1 and 2, dated September 23, 2009

MEMORANDA

Memoranda to R. W. Borchardt, Executive Director for Operations, NRC, from Edwin M. Hackett, Executive Director, ACRS:

- Open Items in the Draft Safety Evaluation Report Related to License Renewal Applications, dated September 23, 2009

- Letter from Citizen Power Concerning the License Renewal for the Beaver Valley Power Station, dated September 22, 2009
- Proposed Revisions to Regulatory Guides 4.16, 8.18, 8.24, 6.9, and 1.115 dated September 21, 2009
- Proposed Revision 2 to Regulatory Guide 6.7, dated September 21, 2009
- Request by the ACRS for a Future Briefing by NRR on Current Containment Liner Corrosion Issues and Actions Being Taken by the Staff to Address Them, dated September 21, 2009
- Proposed Revision to NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility," dated September 21, 2009
- Withdrawal of Regulatory Guides 4.5, 4.6, 7.1, 7.5, 1.83, and 1.165, dated September 28, 2009
- Questions Raised by a Member of the Public During an ACRS Subcommittee Meeting On Watts Bar Unit 2, dated September 16, 2009

MINUTES OF THE 565th MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
ROCKVILLE, MARYLAND

The 565th meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held in Conference Room 2B3, Two White Flint North Building, Rockville, Maryland, on September 10-12, 2009. Notice of this meeting was published in the *Federal Register* on August 25, 2009 (72 FR42946-42947). The purpose of this meeting was to discuss and take appropriate action on the items listed in the meeting agenda. The meeting was open to public attendance.

A transcript of selected portions of the meeting is available in the NRC's Public Document Room at One White Flint North, Room 1F-19, 11555 Rockville Pike, Rockville, Maryland. Copies of the transcript are available for purchase from Neal R. Gross and Co., Inc., 1323 Rhode Island Avenue, NW, Washington, DC 20005. Transcripts are also available at no cost to download from, or review on, the Internet at <http://www.nrc.gov/ACRS/ACNW>.

ATTENDEES

ACRS Members: Dr. Mario Bonaca (Chairman), Dr. Said Abdel-Khalik (Vice-Chairman), Mr. J. Sam Armijo (Member-at-Large), Dr. George E. Apostolakis, Dr. Sanjoy Banerjee, Dr. Dennis Bley, Mr. Charles Brown, Dr. Michael Corradini, Mr. Otto L. Maynard, Dr. Dana A. Powers, Mr. Harold Ray, Dr. Michael Ryan, Dr. William Shack, Mr. John Sieber, and Mr. John Stetkar.

I. Chairman's Report (Open)

[Note: Mr. Sam Duraiswamy was the Designated Federal Official for this portion of the meeting.]

Dr. Mario Bonaca, Committee Chairman, convened the meeting at 8:30 a.m. In his opening remarks he announced that the meeting was being conducted in accordance with the provisions of the Federal Advisory Committee Act. He reviewed the agenda items for discussion and noted that no written comments or requests for time to make oral statements from members of the public had been received. Dr. Bonaca also noted that a transcript of the open portions of the meeting was being kept and speakers were requested to identify themselves and speak with clarity and volume.

HIGHLIGHTS OF KEY ISSUES

II. License Renewal Application and Final Safety Evaluation Report (SER) for the Indian Point Nuclear Generating Unit Nos.2 and 3

[Note: Mr. Peter Wen was the Designated Federal Official for this portion of the meeting]

The Committee met with representatives of the NRC staff and Entergy Nuclear Operations Inc., (Entergy or applicant) to discuss the final Safety Evaluation Report (SER) related to the license renewal application for the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3).

Entergy discussed its evaluations, corrective actions, and commitments relative to the IP2 spent fuel pool. Entergy has committed to a quarterly sampling program to test for changes in tritium concentrations in groundwater in close proximity to the IP2 spent fuel pool. Regarding the leak found in the IP2 refueling cavity during refueling operation, the applicant discussed the inspection conducted to date and the actions planned to be performed prior to and during the period of extended operation. The applicant also discussed the issue of the IP2 containment liner that was damaged during the 1973 waterhammer event. The integrated leak rate tests and inspection results have confirmed that the containment liner has not experienced any degradation following the repairs. Entergy will perform another inspection of the affected area prior to the period of extended operation.

The NRC staff discussed how the applicant amended its buried piping and tanks inspection program to include additional testing of buried components. Entergy has committed to 51 inspections prior to entering the period of extended operation and additional periodic inspections during the period of extended operation. This inspection and monitoring program is consistent with the Generic Aging Lessons Learned (GALL) Report and significantly exceeds the minimum number of inspections required in similar programs at other plants. The staff also provided additional information regarding the applicant's flow-accelerated corrosion (FAC) operating experience. The staff concluded that the applicant's FAC program is consistent with the GALL Report and is acceptable. The staff also provided a brief discussion on the applicant's metal fatigue monitoring program and the reactor vessel upper-shelf energy criteria.

The Indian Point final SER contained no open items. Based on its review, the staff concluded that the requirements of 10 CFR 54.29(a) have been met.

The Committee issued a report to the NRC Chairman on this matter, dated September 23, 2009, recommending that the Entergy application for renewal of the operating licenses of IP2 and IP3 be approved.

III. License Renewal Application and Final SER for the Three Mile Island Nuclear Station, Unit 1

[Note: Mr. Christopher Brown was the Designated Federal Official for this portion of the meeting]

The Committee met with representatives of the NRC staff and Exelon Generation Company, LLC, (Exelon or applicant), to discuss the final SER related to the license renewal application for the Three Mile Island Nuclear Station, Unit 1 (TMI-1).

The applicant discussed the method used to consider plant-specific operating and maintenance experience. The method initially used by the applicant was inconsistent with industry guidance. Subsequently, the applicant conducted a direct plant-specific operating experience review for mechanical systems. The applicant indicated that no new aging effects were identified. The applicant also discussed the cause of the corrosion that occurred on the containment liner. The applicant indicated that a weld repair prior to the period of extended operation will be performed followed by an integrated leak rate test for the liner. The applicant also discussed water in underground cable vaults (manholes) and the implementation of semi-annual inspections of vaults to prevent water intrusion. Restoration of the french drains at the bottom of the vaults was also discussed as a measure to prevent water intrusion.

The NRC staff provided an overview of the TMI-1 license renewal inspection/operating experience review. The staff discussed how the applicant reevaluated plant-specific operating and maintenance experience. The staff also discussed the inspection findings of the applicant's plant-specific operating experience, corrosion of the reactor building liner, water found in underground cable vaults and the environmental effects on fatigue life of piping and components for TMI-1.

The TMI-1 final SER contained no open items. Based on its review, the staff concluded that the requirements of 10 CFR 54.29(a) have been met.

The Committee issued a report to the NRC Chairman on this matter, dated September 28, 2009, recommending that the application for renewal of the operating license for TMI-1 be approved.

IV. Draft Final Revision 2 to Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants"

[Note: Mrs. Kathy Weaver was the Designated Federal Official for this portion of the meeting]

The Committee met with representatives of the NRC staff to review draft final Regulatory Guide (RG) 1.189, Revision 2, "Fire Protection for Nuclear Power Plants." The staff described the changes in RG 1.189. These changes included discussions of safe shutdown success path components and components important to safety, and the use of operator manual actions and fire modeling for assessing components important to safe shutdown.

The staff also provided the Committee with a summary of the public comments and their resolution. Industry stakeholders commented that NEI 00-01, Revision 2, "Guidance for Post Fire Safe Shutdown Circuit Analysis," should be referenced in the Guide. The staff described the three areas in which it did not endorse NEI 00-01:

- NEI 00-01 Appendix E, Operator Manual Actions, lacks a clear discussion of the reliability of manual actions and is insufficient to address all plant response scenarios.
- The test data do not justify a limit of 20 minutes for the clearing DC circuit hot shorts for components important to safe shutdown.
- The staff is also concerned with the NEI position that only one cable be considered to have hot shorts for non-latching, non-locking circuits and that concurrent multiple faults in separate cables don't need to be considered.

On September 8, 2009, NEI submitted additional information to address these issues. The staff has come to resolution with industry stakeholders on two of these issues. The staff will continue to work with industry to refine the guidance for operator manual actions. The staff also noted that, when Revision 2 to RG 1.189 is issued, licensees will have 6 months to identify compliances and an additional 30 months to resolve these noncompliances. The staff will make additional revisions to RG 1.189 to address the September 8, 2009 comments by NEI and submit the final version of RG 1.189 to the ACRS for consideration during its October 8-10, 2009 meeting.

V. Draft Digital Instrumentation and Control (DI&C) Research Plan for FY 2010 – 2014

[Note: Mrs. Christina Antonescu was the Designated Federal Official for this portion of the meeting]

The Committee met with representatives of the NRC staff to discuss the July 28, 2009, draft Digital Instrumentation and Control Research Plan for FY 2010-2014. The staff presented information on the research that is needed to supplement and augment current review guidance and develop technical bases to support risk-informed digital system reviews and operational assessments. Some of the issues captured in the DI&C Research Plan are: understanding of associated failure modes; complexity and potential new failure modes; limited operating history; higher level of system integration and complex communication schemes; and cyber vulnerabilities.

This Plan updates the previous Plan for FY 2005 - FY 2009. The staff stated that the purpose of the Plan is to provide a communication and planning framework that identifies necessary research initiatives to support regulatory decisions.

Specifically, the draft digital I&C Research Plan for FY 2010-2014 divide the research into five areas:

- Safety Aspects of Digital Systems
- Security Aspects of Digital Systems
- Advanced Nuclear Power Concepts
- Knowledge Management
- Additional Carry-Over Projects from Digital System Research Plan FY 2005 - FY 2009

The DI&C Research Plan is a continuation of research programs that support regulatory needs of the NRC licensing offices.

The Committee issued a report to the NRC Chairman on this matter, dated October 2, 2009, stating that the July 28, 2009 Digital System Research Plan for FY 2010 - FY 2014 is well directed toward meeting the agency needs. In addition, the Committee provided comments on the following topics to allow the staff to consider them as the Plan is refined: communications among plant-wide systems; safety assessment of tool automated processes; development of benchmark and reliability data; and analytical assessment of DI&C systems and digital system PRA.

VI. Updated Information Related to the License Renewal Application and Supplemental SER for the Beaver Valley Power Station

[Note: Mrs. Kathy Weaver was the Designated Federal Official for this portion of the meeting]

The Committee met with representatives of the NRC staff and FirstEnergy Nuclear operating Company (FENOC), the applicant, to review new information submitted by FENOC and the associated Supplemental SER prepared by the staff related to the license renewal application for the Beaver Valley Power Station (BVPS), Units 1 and 2.

The applicant discussed the new information regarding the Unit 1 containment liner corrosion identified in 2006. Of the three areas of corrosion identified, two were replaced with new plate material. The third area of the liner showed minimal loss of thickness at the deepest pit and was left in place for further monitoring. The applicant further discussed the containment liner inspection performed in April 2009 on Unit 1, in which a paint blister was discovered on the containment liner revealing through-wall corrosion. The applicant attributed this corrosion to a moist piece of foreign material (wood) which was found embedded in the concrete immediately behind and in contact with the liner. The applicant's corrective actions included removal of the wood, inspection of the concrete, and replacement of the affected section of the liner. Future corrective actions include follow-up ultrasonic examination of the replaced area during the next Unit 1 refueling outage and visual examinations to be performed during the next Unit 1 and Unit 2 refueling outages. Supplemental non-random volumetric examinations on the Unit 1 containment liner will be completed by December 2010. In addition, supplemental random volumetric examinations of a minimum of 75 sections of the containment liner will be performed during the next three outages with all tests to be completed no later than the beginning of the period of extended operation. For Unit 2, supplemental volumetric examinations will be completed prior to entering the period of extended operation.

The NRC staff also provided an overview of the applicant's commitments associated with the BVPS, Units 1 and 2 containment liners and discussed its Supplemental SER. Based on its review, the staff concluded that the requirements of 10 CFR 54.29(a) have been met.

The Committee issued a report to the NRC Chairman on this matter, dated September 16, 2009, recommending that the FENOC application for renewal of the operating licenses of BVPS, Units 1 and 2 be approved.

VII. Subcommittee Reports

ESBWR Subcommittee Report

The Chairman of the Economic Simplified Boiling Water Reactor (ESBWR) Subcommittee provided a report regarding the matters discussed at the July 21-22, and August 21, 2009, Subcommittee meetings. During the July 22-22, 2009, meeting, the staff and General Electric Hitachi described the resolution of issues associated with the ESBWR Design Control Document (DCD). During the August 21, 2009, meeting, the staff and Dominion Virginia Power presented multiple SER Chapters (2, 3, and 14) with open items, related to the North Anna combined license application (COLA). The SER Chapters contained information incorporated by reference from the ESBWR DCD. Several technical issues were raised by the Subcommittee that will have to be resolved in the context of the certification of the ESBWR design. These issues include: potential explosion hazards on the site, the methodology for determining the frequency of airplane crashes, and slope stability issues. The Committee plans to continue its review of this matter during future meetings.

AP1000 Subcommittee Report

The Chairman of the AP1000 Subcommittee provided a report regarding the matters discussed at the July 23-24, 2009, Subcommittee meeting. In January 2009, the Westinghouse Electric Company submitted Revision 17 of the DCD, for the AP1000 advanced pressurized water reactor (PWR). In October 2007, the Tennessee Valley Authority (TVA) and the multi-utility consortium NuStart Energy, submitted a COLA for two AP1000 reactors designated as Bellefonte Nuclear Station Units 3 & 4 at TVA's existing yet inactive Bellefonte reactor site in Jackson County, Alabama. The staff is reviewing this material and is required to obtain the views of the ACRS. The Subcommittee was briefed on ten Chapters of the AP1000 DCD amendment and the Bellefonte Reference Combined License Application (RCOLA) for which there were uncontested open items. The Committee determined that because of the complexity and number of amendments being proposed in the DCD, it is impractical to perform the requested reviews (DCD amendment and RCOLA) in parallel, as first requested by the staff. Consequently, the members agreed to conduct these reviews in series. The Subcommittee is scheduled to review the remaining DCD amendments and draft SER chapters in Subcommittee meetings currently scheduled for October 2009, November 2009, and January 2010.

Plant Operations and Fire Protection Subcommittee Report

The Chairmen of the Plant Operations and Fire Protection Subcommittee provided a report regarding the matters discussed during the July 28, and July 30, 2009, Subcommittee meetings. On July 28, 2009, the Subcommittee visited the Watts Bar Nuclear Plant and held a public meeting with TVA. TVA discussed their activities in support of the Watts Bar Unit 2 license review. The focus of the plant tour was to observe first-hand the material condition at Unit 2 and the status of construction, and review the controls TVA has implemented to ensure that Unit 2 construction activities do not impact the safe operation of Unit 1. The members noted that material condition at Unit 2 appeared favorable, and the TVA's process for Unit 2 construction and licensing was carefully thought-out and systematic. On July 30, 2009, the Subcommittee met with the NRC Region II Administrator and his staff at the Office of Region II in a public meeting. The staff discussed the regional organization, the inspection program in support of Watts Bar Unit 2 construction, the inspection results and future plans, and other regional activities. As further progress has been made, the Subcommittee and subsequently the full Committee will meet with the staff and TVA to discuss the Watts Bar, Unit 2, licensing.

Reliability and PRA Subcommittee Report

The Chairman of the Reliability and PRA Subcommittee provided a report regarding the matters discussed at the August 18, 2009, Subcommittee meeting. The Subcommittee met with the staff and industry representatives to discuss Regulatory Guide 1.205, Rev. 1, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," and the Standard Review Plan, Section 9.5.1, "Risk-Informed, Performance-Based Fire Protection." These are guidance documents for plants adopting NFPA-805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants." The staff presented an overview of the resolution of public comments. The NEI representative discussed industry concerns with current draft revision to Regulatory Guide 1.205; and the EPRI representative

described industry activities to develop an EPRI Fire PRA methodology. Several issues were raised by the Subcommittee that will have to be resolved prior to submitting this Guide to the full Committee for approval. Therefore, the Subcommittee decided to have another meeting in November prior to presenting Revision 1 of Regulatory Guide 1.205 to the full Committee in December 2009.

Evolutionary Power Reactor (EPR) Subcommittee Report

The Chairman of the EPR Subcommittee provided a report regarding the matters discussed at the September 8, 2009, Subcommittee meeting. AREVA, NP presented analyses and results from Technical Report ANP-10299P, "Applicability of AREVA NP Containment Response Evaluation Methodology to the U.S. EPR for Large Break LOCA Analysis," Revision 1, and also provided an overview of several analyses included in the US EPR DCD FSAR submitted to NRC for review. Several technical issues were raised by the Subcommittee that will be discussed further when relevant Chapters of the EPR DCD SER are reviewed by the Subcommittee. These included the applicability of scaling methodologies and benchmarks used in the analyses, uncertainty analyses, and operability of some components of the containment ventilation system. Subcommittee members also expressed interest in learning more about the review of the US EPR design conducted by European Countries where the EPR is being built and the differences in the licensing basis for those plants compared to the licensing basis being developed for the US EPR. The Subcommittee will begin its review of SER Chapters with open items for the US EPR DCD in November 2009.

VIII. Executive Session

[Note: Mr. Edwin Hackett was the Designated Federal Official for this portion of the meeting.]

A. Reconciliation of ACRS Comments and Recommendations/EDO Commitments

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of July 27, 2009, to comments and recommendations included in the March 19, 2009, ACRS letter concerning draft final Regulatory Guide 5.71, "Cyber Security Programs for Nuclear Facilities." The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of July 17, 2009, to comments and recommendations included in the June 16, 2009, ACRS letter on the National Institute of Standards and Technology License Renewal Application. The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of June 23, 2009, to comments and recommendations included in the May 20, 2009, ACRS letter concerning Proposed Resolution of Generic Safety Issue – 163, "Multiple Steam Generator Tube Leakage." In addition, the Committee also considered the EDO's response of June 23, 2009, to a May 18, 2009, memorandum concerning the review of Steam Generator Action Plan Items. The Committee decided that, based on the commitments made by the staff, it was satisfied with the EDO's responses.

- The Committee considered the EDO's response of July 29, 2009, to comments and recommendations included in the June 25, 2009, ACRS letter concerning the Safety Evaluation of the Mitsubishi Heavy Industries (MHI) Topical Report MUAP-P, Revision 2, "Defense –In-Depth and Diversity," related to the US-APWR Design. The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of July 17, 2009, to comments and recommendations included in the June 17, 2009, ACRS letter concerning draft Final Revision 2 to Regulatory Guide 1.21, "Measuring, Evaluating and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste," and 4.1, "Radiological Environmental Monitoring for Nuclear Power Plants." The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of June 23, 2009, to comments and recommendations included in the May 18, 2009, ACRS letter on Draft Final Regulatory Guide 1.214 (DG-1212), "Response Procedures for Potential or Actual Aircraft Attacks." The Committee decided that it was satisfied with the EDO's response.

B. Report of the Planning and Procedures Subcommittee Meeting

Review of the Member Assignments and Priorities for ACRS Reports and Letters for the May ACRS Meeting

Member assignments and priorities for ACRS reports and letters for the May ACRS meeting were discussed. Reports and letters that would benefit from additional consideration at a future ACRS meeting were also discussed.

Anticipated Workload for ACRS Members

The anticipated workload for ACRS members through December 2009 were discussed and the objectives were to:

- Review the reasons for the scheduling of each activity and the expected work product and to make changes, as appropriate
- Manage the members' workload for these meetings
- Plan and schedule items for ACRS discussion of topical and emerging issues

Open Items in the Draft Safety Evaluation Report (SER) Related to License Renewal Applications

In February 2003, the Committee established a policy that the draft SER associated with a license renewal application submitted to the ACRS Subcommittee for review should have 10 or less open items. This policy was to preclude having another Subcommittee meeting to discuss the resolution of large number of open items (e.g. 40 open items in the draft SER for Catawba and McGuire license renewal application) and to minimize the full Committee time in discussing the resolution. The Commission and the EDO were informed of this policy. Since establishing this policy, it has been adopted strictly. Since there is new staff management, who are not aware of this policy, the Committee needs to reemphasize its policy.

ACRS Meeting With the Commission

The ACRS is tentatively scheduled to meet with the Commission on December 4, 2009. We informed the Office of SECY that we would let them know, after the September ACRS meeting, whether the Committee wants to hold this meeting or prefers to postpone it until April 2010. Since there are no major topics and the December meeting workload is expected to be heavy, it is suggested that the meeting with the Commission be postponed to April 2010.

Commission Meeting on New Reactor Issues

The Commission is scheduled to hold a meeting with the staff on September 22, 2009, between 9:30 A.M. and 11:30 A.M. to discuss new reactor issues – Progress in Resolving Issues Associated with ITAAC Closure. Members interested in attending this meeting should inform the ACRS Executive Director.

Questions Raised by a Member of the Public Regarding Watts Bar, Unit 2

During the July 28, 2009 meeting on Watts Bar Unit 2, that was held at Spring City, Tennessee, a member of the public raised several questions regarding Watts Bar, Unit 2. Since the Committee does not have all the information to respond to these questions, these questions will be referred to the EDO for disposition.

Candidates for Membership on the ACRS

In response to the announcement in the *Federal Register* notice, press release, and in several Technical Magazines soliciting candidates for membership on the ACRS, we have received several applications. The ACRS Member Candidate Screening Panel will review these applications and develop a list of qualified candidates for interview by the Panel and the ACRS members in November. The Committee should provide feedback to the ACRS Executive Director on the expertise to fill future vacancies.

Resumes that have been received for the ACRS vacancy announcement are available at the ACRS Sharepoint site at <http://portal.nrc.gov/CB/acrs/ACRS%20Member%20Solicitations/Resumes/default.aspx>. Please note that this link is part of the ACRS Sharepoint site, and CITRIX is required for access. SharePoint is the only Agency approved vehicle for sharing Personally Identifiable Information (PII). For members who prefer to review the notebooks containing resumes of the candidates, as has been in the past, notebooks will be made available for check out during the September and October meetings. Please see Jessie Delgado for a copy of the notebook. The notebooks must be returned when your review is completed.

Naval Reactor Review

The ACRS will review the Safety Analysis Report related to a new naval reactor design in June 2012. The staff plans to issue a draft SER in August 2013 in preparation for a full-day Subcommittee meeting in September 2013. This would be followed by a full Committee meeting in October 2013. This schedule is similar to what was done in previous reviews.

To help the members prepare for this review, Naval Reactors have proposed a visit to Naval Reactors Headquarters in Washington D.C. (Half a day on December 2, 2009). Other visits may be planned in the future.

Standard Review Plan and Regulatory Guides

a) Standard Review Plan

The staff plans to issue the following Standard Review Plan (SRP) for public comment and would like to know whether the Committee wants to review this SRP prior to being issued for public comment.

- Proposed Revision to NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility"

The staff plans to publish a proposed revision to NUREG-1520, and requests that the ACRS defer its review until after reconciling public comments. The proposed revision updates the March 2002 SRP that is used by the staff to perform safety and environmental impact reviews of applications to construct, operate, extend, or modify nuclear fuel cycle facilities. Chapter 3 of the SRP focuses on a licensee's or applicant's ability to perform an integrated safety analysis (ISA), and to provide an ISA summary to the NRC for review. In 2001, a joint ACRS/ACNW Subcommittee questioned the effectiveness of ISA in establishing a risk-informed licensing process. In a subsequent letter to the Commission dated January 14, 2002, the Committee recommended that the staff "move the ISA process systematically in the direction of quantitative risk assessment to enhance the overall understanding of total system risk." Any change in direction to enhance the licensing process would need to be reflected in the proposed revision to the SRP.

Dr. Ryan recommends that the Committee review the draft final version of this SRP after reconciliation of public comments.

b) Draft Final Regulatory Guide

The staff plans to issue the following Draft Final Regulatory Guide and would like to know whether the Committee wants to review this Guide prior to being issued final.

- Draft Final Revision 1 to Regulatory Guide 1.151 (DG-1178), "Instrument Sensing Lines"

Regulatory Guide 1.151 describes a method that the staff considers acceptable for use in complying with the regulations with regard to the design and installation of safety-related instrument sensing lines in nuclear power plants. To meet these objectives, the sensing lines must serve a safety-related function to prevent the release of reactor coolant as a part of the reactor coolant pressure boundary and provide adequate connection to the reactor coolant system for measuring process variables (e.g., pressure, level, and flow). Revision 1 to RG 1.151 was issued on October 23, 2008 for public comment. The comment period ended December 22, 2008. Changes to this Guide are (1) to update the references and standards and (2) to provide minor clarifications.

Based on his review of this Regulatory Guide, Mr. Maynard recommends that the Committee not review this Guide.

c) Proposed Regulatory Guides

The staff plans to issue the following Proposed Regulatory Guides for public comment and would like to know whether the Committee wants to review these Guides prior to being issued for public comment.

- Proposed Revision 2 to Regulatory Guide 4.16 (DG-4017), "Monitoring and Reporting Radioactive Materials in Liquid and Gaseous Effluents from Nuclear Fuel Cycle Facilities"

The staff issued Revision 1 to Regulatory Guide (RG) 4.16, "Monitoring and Reporting Radioactivity in Releases of Radioactive Materials in Liquid and Gaseous Effluents from Nuclear Fuel Processing and Fabrication Plants and Uranium Hexafluoride Production Plants," in December 1985. The original title has been changed. The staff believes that the proposed revision will enhance the collection and documentation of information on the identity, concentration, and quantity of radionuclides in liquid and gaseous effluents from uranium enrichment plants, nuclear fuel processing and fabrication plants, and uranium hexafluoride production plants. It could also lead to cost savings for the industry, especially with regard to the efficiency of staff's review of effluent impact, including estimates of the potential annual radiation doses to the public, meeting regulations and determining whether concentrations of radioactive material in liquid and gaseous effluents have been kept as low as reasonably achievable (ALARA), and determining the adequacy and performance of effluent controls.

Based on his review of this Proposed Regulatory Guide, Dr. Ryan recommends that the Committee review the draft final revision to this Guide after reconciliation of public comments.

- Proposed Revision 2 to Regulatory Guide 8.18 (DG-8037), "Information Relevant to Ensuring that Occupational Radiation Exposures at Medical Institutions will be As Low As Reasonably Achievable"

RG 8.18 provides guidance to medical licensees in order to maintain occupational exposures as low as is reasonably achievable. This Guide includes recommendations for occupational workers and certain persons other than employees that are exposed to radiation from licensed radioactive material. These persons include visitors and patients other than those being treated with radioactive material. The content of this Guide is also applicable to veterinary medical institutions, with respect to specific diagnostic or therapeutic procedures are performed.

Based on his review of this Proposed Regulatory Guide, Dr. Ryan recommends that the Committee review the draft final revision to this Guide after reconciliation of public comments.

- Proposed Revision 2 to Regulatory Guide 8.24 (DG-8040), “ Health Physics Surveys During Enriched Uranium-235 Processing and Fuel Cycle Fabrication”

Revision 1 of Regulatory Guide 8.24 was issued in October 1979. DG-8040 describes a method that the staff considers acceptable for establishing an acceptable survey program in accordance with the “as low as reasonably achievable” philosophy. As used in 10 CFR Part 20, “ Standards for Protection Against Radiation,” the term “ survey” refers to an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions. The main changes to this Guide are editorial and for consistency with the current regulations.

Based on his review of this Proposed Regulatory Guide, Dr. Ryan recommends that the Committee review the draft final revision to this Guide after reconciliation of public comments.

- Proposed Revision 1 to Regulatory Guide 6.9 (DG-6007), “Establishing Quality Assurance Programs for the Manufacture and Distribution of Sealed Sources and Devices Containing Byproduct Material”

The staff issued Regulatory Guide 6.9, “Establishing Quality Assurance Programs for the Manufacture and Distribution of Sealed Sources and Devices Containing Byproduct Material,” in February 1995, to provide licensees with agency-approved guidance for complying with the QA/QC program requirements of 10 CFR Part 32. As part of its redesign of the materials licensing process, the staff consolidated and updated numerous materials license guidance documents into NUREG-1556, “Consolidated Guidance About Materials Licenses.” RG 6.9 endorses the method described in Volume 3 of NUREG-1556. The objective of this revision is to provide clear and up-to-date information to support consolidated guidance about materials licenses, in general, and leak-testing radioactive brachytherapy sources in particular.

Based on his review of this Proposed Regulatory Guide, Dr. Ryan recommends that the Committee review the draft final revision to this Guide after reconciliation of public comments.

- Proposed Revision 2 to Regulatory Guide 6.7 (DG-6008), “Preparation of An Environmental Report to Support a Rulemaking Petition Seeking an Exemption for a Radionuclide-Containing Product”

Revision 2 to RG 6.7 provides general procedures for the preparation of environmental reports submitted to support a rulemaking petition requesting an exemption for a consumer product containing radioactive material. It amends Revision 1 of RG 6.7 issued June 1976.

Based on his review of this Proposed Regulatory Guide, Dr. Ryan recommends that the Committee not review the draft and the final revisions to this Guide.

- Proposed Revision 2 to Regulatory Guide 1.115 (DG-1217), “Protection Against Turbine Missiles”

Revision 1 to Regulatory Guide 1.115 was issued in July 1977. The focus to Revision 2 is to address high-trajectory turbine missiles as well as low-trajectory turbine missiles.

Based on his review of this Proposed Regulatory Guide, Mr. Ray recommends that the Committee review the draft final revision to this Guide after reconciliation of public comments.

d) Withdrawal of Regulatory Guides

The staff plans to withdraw the following Regulatory Guides and would like to know whether the Committee wants to review the staff’s basis for withdrawing these Guides prior to being withdrawn:

- Regulatory Guides 4.5, “Measurements of Radionuclides in the Environment—Sampling and Analysis of Plutonium in Soil,” and 4.6, “Measurements of Radionuclides in the Environment—Strontium-89 and Strontium-90 Analysis”

Regulatory Guides 4.5 and 4.6 were both issued in May 1974. These Guides provide prescriptive guidance to licensees and applicants on the sampling and laboratory analysis of Strontium and Plutonium. These Guides supported a previous revision of 10 CFR Part 20, “Standards for Protection against Radiation,” Section 20.106, “Concentrations in Effluents to Unrestricted Areas,” which no longer exists. They were used in the implementation of Environmental Technical Specifications. Environmental Technical Specifications were phased out in the 1980s. Some of the related requirements were incorporated into Environmental Protection Plans. Updated guidance for the measurement of Pu, Sr89, and Sr90 is now provided in RG 4.15, “Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination) -- Effluent Streams and the Environment,” which was issued in July 2007.

Based on his review of the staff's basis for proposed withdrawal of this Guide, Dr. Ryan recommends that the Committee not object to the staff's proposal to withdraw these Guides.

- Regulatory Guide 7.1, "Administrative Guide for Packaging and Transporting Radioactive Material"

Regulatory Guide (RG) 7.1 was published in June 1974 and provided guidance on which packaging and labeling regulations of the Department of Transportation (DOT) apply in a given case and what must be done to comply with those regulations. The staff is withdrawing this Guide because it is outdated. RG 7.1 references the ANSI N14.10.1, "Administrative Guide for Packaging and Transporting Radioactive Materials," dated September 14, 1973, which has been withdrawn. Generic guidance is provided by DOT, "Radioactive Material Regulations Review," December 2008, which includes radioactive material determination, appropriate packaging for a given material, labeling, and placarding.

Based on his review of the proposed withdrawal of this Guide, Dr. Ryan recommends that the Committee not object to the staff's proposal to withdraw these Guides.

- Regulatory Guide 7.5, "Administrative Guide for Obtaining Exemptions from Certain NRC Requirements over Radioactive Material Shipments"

Regulatory Guide 7.5 was published in May 1977 and provided guidance on obtaining a modification, waiver or exemption from the NRC-imposed DOT regulations via 10 CFR 71.5(b). Prior to expansion of the Department of Transportation (DOT) regulations in 1998 to include hazardous material transported while in intrastate commerce, most intrastate shipments of NRC-licensed material were not subject to DOT regulations. Recognizing this, NRC imposed the same DOT requirements on these shipments (through 10 CFR 71.5(a)) that were already imposed on shipments in interstate commerce. Additionally, 10 CFR 71.5(b) provides licensees a method to request a modification, waiver or exemption from the DOT regulations imposed in 71.1(a). The number of shipments currently not subject to DOT regulations is markedly lower than in 1997. Shipments that would not be subject to DOT regulations are those made by a Federal, state, or local government, which goes to and from the government site and are made using the government mode of transportation. In the almost 11 years since the DOT final rule became effective in October 1, 1998, NRC has not approved any requests for exemption, waiver or modification of DOT requirements pursuant to 10 CFR 71.5(b).

Based on his review of the proposed withdrawal of this Guide, Dr. Ryan recommends that the Committee not object to the staff's proposal to withdraw these Guides.

- Regulatory Guide 1.165, "Identification and Characterization of Seismic Sources and Determination of Safe Shutdown Earthquake Ground Motion"

Regulatory Guide 1.165 is being replaced with the improved guidance in RG 1.208, "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion," issued March 2007. The guidance in RG 1.208 incorporates developments in ground motion estimation, models and new methods for defining site specific ground motion response spectrum which allows for approximately consistent performance of structures, systems, and components across a range of seismic environments. The guidance in RG 1.165 was based on site specific and region-specific investigations combined with probabilistic seismic hazard assessment. Thus, RG 1.165 is no longer needed.

Based on his review of the staff's basis for the proposed withdrawal of this Guide, Dr. Powers recommended that the Committee not object to the staff's proposal to withdraw this Guide.

- Regulatory Guide 1.56, "Maintenance of Water Purity in Boiling Water Reactors"

Regulatory Guide (RG) 1.56 was issued for comment in July 1978 and never finalized. RG 1.56 was intended to support Title 10, Part 50, of the *Code of Federal Regulations*,

"Domestic Licensing of Production and Utilization Facilities," Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 14, "Reactor Coolant Pressure Boundary," and GDC 31, "Fracture Prevention of Reactor Coolant Pressure Boundary." RG 1.56 describes an acceptable method for maintaining water purity levels in the reactor coolant in order to ensure that degradation of the reactor coolant pressure boundary is not exacerbated by poor chemistry conditions. The staff considers water chemistry to be an operational issue for plants. It is in the licensee's best interest to operate the plant with a chemistry regime that optimizes component performance. There is adequate industry-generated guidance available for licensees to develop a plant-specific water chemistry program. The industry routinely updates this guidance to incorporate the latest knowledge and lessons learned in the area of water chemistry.

Based on his review of the proposed withdrawal of this Guide, Dr. Armijo recommends the Committee to not agree with the staff's proposal to withdraw this Guide and recommends that the staff provide the basis for withdrawing this Guide.

Third Quadripartite Working Group Meeting

Japan's Nuclear Safety Commission (NSC) will host the third Quadripartite Working Group (WG) Meeting in Tokyo scheduled for October 13-15, 2009 on the main topic of Digital I&C and an afternoon dedicated to Seismic Safety issues. ACRS Members attending are Mr. Brown and Dr. Powers. Also, Ms. Antonescu of the ACRS staff will be attending this Meeting. The general invitation to the meeting, the proposed agenda and ACRS presentations for this meeting were discussed.

The meeting was adjourned at 7:00 pm on September 11, 2009.

Reference staff at 1-800-397-4209, 301-415-4737 or by e-mail to pdrc@nrc.gov.

These documents may also be viewed electronically on the public computers located at the NRC's Public Document Room (PDR), O-1 F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The PDR reproduction contractor will copy documents for a fee.

Dated at Rockville, Maryland this 11th day of August 2009.

For the Nuclear Regulatory Commission.

Shana Helton,

Senior Project Manager, Licensing Branch,
Division of Spent Fuel Storage and Transport,
Office of Nuclear Material Safety and
Safeguards.

[FR Doc. E9-20412 Filed 8-24-09; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards

In accordance with the purposes of Sections 29 and 182b of the Atomic Energy Act (42 U.S.C. 2039, 2232b), the Advisory Committee on Reactor Safeguards (ACRS) will hold a meeting on September 10-12, 2009, 11555 Rockville Pike, Rockville, Maryland. The date of this meeting was previously published in the Federal Register on Monday, October 6, 2008, (73 FR 58268-58269).

Thursday, September 10, 2009, Commissioners' Conference Room O- 1F16, One White Flint North, Rockville, Maryland

8:30 a.m.-8:35 a.m.: Opening Remarks by the ACRS Chairman (Open)—The ACRS Chairman will make opening remarks regarding the conduct of the meeting.

8:35 a.m.-11 a.m.: License Renewal Application and Final Safety Evaluation Report (SER) for the Indian Point Nuclear Generating Units 2 and 3 (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and Entergy Nuclear Operations, Inc., regarding the License Renewal Application for the Indian Point Generating Units 2 and 3, the associated NRC staff's final Safety Evaluation Report, and related matters.

11:15 a.m.-12:45 p.m.: License Renewal Application and Final Safety Evaluation Report for the Three Mile Island Nuclear Station, Unit 1 (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and

AmerGen Energy Company, LLC, regarding the license renewal application for the Three Mile Island Nuclear Station, Unit 1, the associated NRC staff's final SER, and related matters.

1:45 p.m.-3:15 p.m.: Draft Final Revision 2 to Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants" (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the draft final Revision 2 to Regulatory Guide 1.189, NRC staff's resolution of public comments, and related matters.

3:30 p.m.-5 p.m.: Draft Digital Instrumentation and Control (DI&C) Research Plan for Fiscal Years (FY) 2010-2014 (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding draft DI&C Research Plan for FY2010-2014, and related matters.

5:15 p.m.-7 p.m.: Preparation of ACRS Reports (Open)—The Committee will discuss proposed ACRS reports on matters discussed during this meeting as well as the letter transmitting the ACRS report on the quality assessment of selected research projects.

Friday, September 11, 2009, Commissioners' Conference Room O- 1F16, One White Flint North, Rockville, Maryland

8:30 a.m.-8:35 a.m.: Opening Remarks by the ACRS Chairman (Open)—The ACRS Chairman will make opening remarks regarding the conduct of the meeting.

8:35 a.m.-10 a.m.: Updated information related to the License Renewal Application and Supplemental SER for the Beaver Valley Power Station (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and First Energy Nuclear Operating Company regarding the updated information related to the license renewal application for the Beaver Valley Power Station, the associated NRC staff's Supplemental SER, and related matters.

10:15 a.m.-11:30 a.m.: Subcommittee Reports (Open)—The Committee will hear reports by and hold discussions with the Chairmen of the ESBWR; AP1000; Plant Operations and Fire Protection; Evolutionary Power Reactor (EPR); and Reliability and PRA Subcommittees regarding: the resolution of containment issues associated with the ESBWR design certification and selected chapters of the draft SER associated with the North Anna Combined License (COL) application

referencing the ESBWR design that were discussed on July 21-22, and August 21, 2009; selected chapters of the amended AP1000 Design Control Document and the Bellefonte COL application that were discussed on July 23-24, 2009; matters discussed during the visits to the Watts Bar Nuclear Plant and Region II Office on July 28 and July 30, 2009; draft final revision 1 to Regulatory Guide 1.205, "Risk-Informed, Performance-Based Fire Protection," that was discussed during the meeting on August 18, 2009; and the containment topical report associated with the EPR design certification that was discussed on September 9, 2009, respectively.

12:30 p.m.-1:15 p.m.: Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open/Closed)—The Committee will discuss the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the full Committee during future ACRS meetings, and matters related to the conduct of ACRS business, including anticipated workload and member assignments. [Note: A portion of this session may be closed pursuant to 5 U.S.C. 552b(c)(2) and (6) to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy]

1:15 p.m.-1:30 p.m.: Reconciliation of ACRS Comments and Recommendations (Open)—The Committee will discuss the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.

1:45 p.m.-7 p.m.: Preparation of ACRS Reports (Open)—The Committee will discuss proposed ACRS reports on matters discussed during this meeting as well as the letter transmitting the ACRS report on the quality assessment of selected research projects.

Saturday, September 12, 2009, Commissioners' Conference Room O- 1F16, One

White Flint North, Rockville, Maryland

8:30 a.m.-1:30 p.m.: Preparation of ACRS Reports (Open)—The Committee will continue its discussion of proposed ACRS reports.

Procedures for the conduct of and participation in ACRS meetings were published in the **Federal Register** on October 6, 2008, (73 FR 58268-58269). In accordance with those procedures, oral or written views may be presented

by members of the public, including representatives of the nuclear industry. Thirty-five hard copies of each presentation or handout should be provided to the Designated Federal Official 30 minutes before the meeting. In addition, one electronic copy of each presentation should be e-mailed to the Designated Federal Official one day before meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the Designated Federal Official with a CD containing each presentation at least 30 minutes before the meeting. Electronic recordings will be permitted only during the open portions of the meeting. Persons desiring to make oral statements should notify the Cognizant ACRS staff named below five days before the meeting, if possible, so that appropriate arrangements can be made to allow necessary time during the meeting for such statements. Use of still, motion picture, and television cameras during the meeting may be limited to selected portions of the meeting as determined by the Chairman. Information regarding the time to be set aside for this purpose may be obtained by contacting the Cognizant ACRS staff prior to the meeting. In view of the possibility that the schedule for ACRS meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with the Cognizant ACRS staff if such rescheduling would result in major inconvenience.

In accordance with Subsection 10(d) Public Law 92-463, I have determined that it may be necessary to close a portion of this meeting noted above to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of ACRS, and information the release of which constitute a clearly unwarranted invasion of personal privacy pursuant to 5 U.S.C. 552b(c)(2) and (6).

Further information regarding topics to be discussed, whether the meeting has been canceled or rescheduled, as well as the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by contacting Girija Shukla, Cognizant ACRS staff (301-415-6855), between 7:15 a.m. and 5 p.m. (ET). ACRS meeting agenda, meeting transcripts, and letter reports are available through the NRC Public Document Room at pdr.resource@nrc.gov, or by calling the PDR at 1-800-397-4209, or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS) which is accessible

from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> or <http://www.nrc.gov/reading-rm/doc-collections/ACRS/>.

Video teleconferencing service is available for observing open sessions of ACRS meetings. Those wishing to use this service for observing ACRS meetings should contact Mr. Theron Brown, ACRS Audio Visual Technician (301-415-8066), between 7:30 a.m. and 3:45 p.m., (ET), at least 10 days before the meeting to ensure the availability of this service. Individuals or organizations requesting this service will be responsible for telephone line charges and for providing the equipment and facilities that they use to establish the video teleconferencing link. The availability of video teleconferencing services is not guaranteed.

Dated: August 19, 2009.

Annette L. Vietti-Cook,

Secretary of the Commission.

[FR Doc. E9-20414 Filed 8-24-09; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Meetings; Sunshine Act

AGENCY HOLDING THE MEETINGS: Nuclear Regulatory Commission.

DATE: Weeks of August 24, 31, September 7, 14, 21, 28, 2009.

PLACE: Commissioners' Conference Room, 11555 Rockville Pike, Rockville, Maryland.

STATUS: Public and Closed.

Week of August 24, 2009

There are no meetings scheduled for the week of August 24, 2009.

Week of August 31, 2009—Tentative

Thursday, September 3, 2009

9:30 a.m.

Meeting with Organization of Agreement States (OAS) and Conference of Radiation Control Program Directors (CRCPD) (Public Meeting) (*Contact:* Andrea Jones, 301-415-2309).

This meeting will be webcast live at the Web address—<http://www.nrc.gov>

Week of September 7, 2009—Tentative

There are no meetings scheduled for the week of September 7, 2009.

Week of September 14, 2009—Tentative

There are no meetings scheduled for the week of September 14, 2009.

Week of September 21, 2009—Tentative

There are no meetings scheduled for the week of September 21, 2009.

Week of September 28, 2009—Tentative

Wednesday, September 30, 2009

9:30 a.m.

Discussion of Management Issues
(Closed—Ex. 2).

* * * * *

*The schedule for Commission meetings is subject to change on short notice. To verify the status of meetings, call (recording)—(301) 415-1292. *Contact person for more information:* Rochelle Baval, (301) 415-1651.

* * * * *

The NRC Commission Meeting Schedule can be found on the Internet at: <http://www.nrc.gov/about-nrc/policy-making/schedule.html>

* * * * *

The NRC provides reasonable accommodation to individuals with disabilities where appropriate. If you need a reasonable accommodation to participate in these public meetings, or need this meeting notice or the transcript or other information from the public meetings in another format (e.g. braille, large print), please notify the NRC's Disability Program Coordinator, Rohn Brown, at 301-492-2279, *TDD:* 301-415-2100, or by e-mail at rohn.brown@nrc.gov. Determinations on requests for reasonable accommodation will be made on a case-by-case basis.

* * * * *

This notice is distributed electronically to subscribers. If you no longer wish to receive it, or would like to be added to the distribution, please contact the Office of the Secretary, Washington, DC 20555 (301-415-1969), or send an e-mail to darlene.wright@nrc.gov.

Dated: August 20, 2009.

Rochelle C. Baval,

Office of the Secretary.

[FR Doc. E9-20565 Filed 8-21-09; 4:15 pm]

BILLING CODE 7590-01-P

POSTAL REGULATORY COMMISSION

[Docket No. MC2009-39; Order No. 282]

International Mail

AGENCY: Postal Regulatory Commission.

ACTION: Notice.

SUMMARY: The Commission is noticing a recently-filed Postal Service request concerning a minor revision to Global Express Guaranteed (GXG) service. This notice addresses procedural steps associated with this filing.



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

August 19, 2009

**AGENDA
565th ACRS MEETING
SEPTEMBER 10-12, 2009**

**THURSDAY, SEPTEMBER 10, 2009, COMMISSIONERS' CONFERENCE ROOM O-1F16,
ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND**

- 1) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (MVB/EMH/SD)
 - 1.1) Opening statement
 - 1.2) Items of current interest

- 2) 8:35 – 11:00 A.M. License Renewal Application and Final Safety Evaluation Report (SER) for the Indian Point Nuclear Generating Units 2 and 3 (Open) (OLM/PW)
 - 2.1) Remarks by the Subcommittee Chairman
 - 2.2) Briefing by and discussions with representatives of the NRC staff and Entergy Nuclear Operations, Inc., regarding the license renewal application for the Indian Point Nuclear Generating Units 2 and 3, the associated NRC staff's final SER, and related matters.

Members of the public may provide their views, as appropriate.

11:00 – 11:15 A.M. * BREAK *****

- 3) 11:15 – 12:45 P.M. License Renewal Application and Final SER for the Three Mile Island Nuclear Station, Unit 1 (Open) (JWS/CLB)
 - 3.1) Remarks by the Subcommittee Chairman
 - 3.2) Briefing by and discussions with representatives of the NRC staff and AmerGen Energy Company, LLC, regarding the license renewal application for the Three Mile Island Nuclear Station, Unit 1, the associated NRC staff's final SER, and related matters.

Members of the public may provide their views, as appropriate.

12:45 – 1:45 P.M. * LUNCH *****

- 4) 1:45 – 3:15 P.M. Draft Final Revision 2 to Regulatory Guide 1.189, “Fire Protection for Nuclear Power Plants” (Open) (JDS/KDW)
4.1) Remarks by the Subcommittee Chairman
4.2) Briefing by and discussions with representatives of the NRC staff regarding the draft final Revision 2 to Regulatory Guide 1.189, NRC staff’s resolution of public comments, and related matters.

Representatives of the nuclear industry and members of the public may provide their views, as appropriate.

3:15 – 3:30 P.M. * BREAK *****

- 5) 3:30 – 5:00 P.M. Draft Digital Instrumentation and Control (DI&C) Research Plan for Fiscal Years (FY) 2010 - 2014 (Open) (GEA/CEA)
5.1) Remarks by the Subcommittee Chairman
5.2) Briefing by and discussions with representatives of the NRC staff regarding draft DI&C Research Plan for FY2010 - 2014 and related matters.

Representatives of the nuclear industry and members of the public may provide their views, as appropriate.

5:00 – 5:15 P.M. * BREAK *****

- 6) 5:15 – 7:00 P.M. Preparation of ACRS Reports (Open)
Discussion of proposed ACRS reports on:
6.1) License Renewal Application and Final Safety Evaluation Report for the Indian Point Nuclear Generating Units 2 and 3 (OLM/PW)
6.2) License Renewal Application and Final Safety Evaluation Report for the Three Mile Island Nuclear Station, Unit 1 (JWS/CLB)
6.3) Draft Final Revision 2 to Regulatory Guide 1.189, “Fire Protection for Nuclear Power Plants” (JDS/KDW)
6.4) Draft Digital Instrumentation and Control Research Plan for FY2010 - 2014 (GEA/CEA)
6.5) Letter transmitting the ACRS Report on the Quality Assessment of Selected Research Projects (DAP/HPN)

FRIDAY, SEPTEMBER 11, 2009, COMMISSIONERS' CONFERENCE ROOM O-1F16, ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 7) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (MVB/EMH/SD)
- 8) 8:35 – 10:00 A.M. Updated information related to the License Renewal Application and Supplemental SER for the Beaver Valley Power Station (Open) (DCB/KDW)
- 8.1) Remarks by the Subcommittee Chairman
- 8.2) Briefing by and discussions with representatives of the NRC staff and First Energy Nuclear Operating Company regarding the updated information related to the license renewal application for the Beaver Valley Power Station, the associated NRC staff's Supplemental SER, and related matters.

Members of the public may provide their views, as appropriate.

10:00 – 10:15 A.M. * BREAK *****

- 9) 10:15 – 11:30 A.M. Subcommittee Reports (Open)
- 9.1) 10:15 – 10:30 A.M. Report by and discussions with the Chairman of the ESBWR Subcommittee regarding selected chapters of the draft SER with open items related to the North Anna combined license (COL) application, as well as resolution of specific issues concerning the ESBWR containment analysis that were discussed during the meetings on July 21-22, and August 21, 2009. (MLC/CLB)
- 9.2) 10:30 – 10:45 A.M. Report by and discussions with the Chairman of the AP1000 Subcommittee regarding selected chapters of the amended AP1000 Design Control Document (DCD) and the associated Bellefonte COL application that were discussed during the meeting on July 23-24, 2009. (HBR/MPL)
- 9.3) 10:45 – 11:00 A.M. Report by and discussions with the Chairmen of the Plant Operations and Fire Protection Subcommittee regarding matters discussed during the visits to the Watts Bar Nuclear Plant and Region II Office on July 28 and July 30, 2009, and any follow-up items resulting from these visits. (HBR/JDS/MB)
- 9.4) 11:00 – 11:15 A.M. Report by and discussions with the Chairman of the Reliability and PRA Subcommittee regarding the draft final revision 1 to Regulatory Guide 1.205, "Risk-Informed, Performance-Based Fire Protection," that was discussed during the meeting on August 18, 2009. (GEA/GSS)

- 9.5) 11:15 – 11:30 A.M. Report by and discussions with the Chairman of the Evolutionary Power Reactor (EPR) Subcommittee regarding the containment topical report associated with the EPR design certification that was discussed during the meeting on September 9, 2009. (DAP/DAW)

11:30 – 12:30 P.M. * LUNCH *****

- 10) 12:30 – 1:15 P.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open/Closed) (MVB/EMH)
- 10.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the Full Committee during future ACRS meetings.
- 10.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments.

[NOTE: A portion of this session may be closed pursuant to 5 U.S.C. 552b (c)(2) and (6) to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy]

- 11) 1:15 – 1:30 P.M. Reconciliation of ACRS Comments and Recommendations (Open) (MVB/CS/AFD)
- Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.

1:30 – 1:45 P.M. * BREAK *****

- 12) 1:45 – 7:00 P.M. Preparation of ACRS Reports (Open)
- Discussion of proposed ACRS reports on:
- 12.1) License Renewal Application and Final Safety Evaluation Report for the Indian Point Nuclear Generating Units 2 and 3 (OLM/PW)
- 12.5) License Renewal Application and Final Safety Evaluation Report for the Three Mile Island Nuclear Station, Unit 1 (JWS/CLB)
- 12.3) Draft Final Revision 2 to Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants" (JDS/KDW)
- 12.4) Draft Digital Instrumentation and Control Research Plan for FY2010 - 2014 (GEA/CEA)
- 12.5) Letter transmitting the ACRS Report on the Quality Assessment of Selected Research Projects (DAP/HPN)

- 12.6) License Renewal Application and the Final Safety Evaluation Report for the Beaver Valley Power Station (DCB/KDW)

SATURDAY, SEPTEMBER 12, 2009, COMMISSIONERS' CONFERENCE ROOM O-1F16, ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 13) 8:30 – 1:30 P.M. Preparation of ACRS Reports (Open)
(10:30-10:45 A.M. BREAK) Continue discussion of the proposed ACRS reports listed under Item 12.
- 14) 1:30 – 2:00 P.M. Miscellaneous (Open) (MVB/EMH)
Discussion of matters related to the conduct of Committee activities and specific issues that were not completed during previous meetings, as time and availability of information permit.

NOTES:

- During the meeting, 301-415-7360 should be used in order to access anyone in the ACRS Office.
- Presentation time should not exceed 50 percent of the total time allocated for a given item. The remaining 50 percent of the time is reserved for discussion.
- Thirty-five (35) hard copies of each presentation should be provided to the Designated Federal Official 30 minutes before the meeting.
- One (1) electronic copy of each presentation should be emailed to the Designated Federal Official 1 day before the meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the Designated Federal Official with a CD containing each presentation at least 30 minutes before the meeting.

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
565th FULL COMMITTEE MEETING

September 10-12, 2009

PLEASE PRINT

TODAY'S DATE: September 11, 2009

<u>NAME</u>	<u>NRC ORGANIZATION</u>
1	
2	
3 Thomas P. Morgan	NRR/DCI
4 DAVID WRONA	NRR/DLR
5 Ray Aulude	NRR/DLR
6 Kent Howard	NRR/DLR
7 Duc NGUYEN	NRR/DLR
8 ABDUL SHEIKH	NRR/DLR
9 Hans Asher	NRC/NRR (DLR)
10 Alice Paulsen	NRR/DLR
11 Rebecca Sigmon	NRR/DIRS
12 Sherlyn Ibarrola	NRR/DIRS
13 Bill Rogers	NRR/DLR
14 Kulim Desai	NRR/DSS/SRX/B
15 John Daily	NRR/DLR
16 Bennett Brad	NRR/DLR
17 BRUCE HEIND	NRR/SCUTS
18 Justin Heintz	NRR/DORL
19 Nadiyah Morgan	NRR/DORL
20 Douglas Pickett	NRR/DORL
21 SAMSON LEE	NRR/DLR
22 Paul Klein	NRR/DCI
23 JAY ROBINSON	NRR/DLR
24 Jim Daily	NRR/DLR
25 Andrew Finaric	NRR/DLR
26 Michael Scott	NRR/DSS
27 John Hubb	NRR/DLR
28 Ailen Hsir	NRR/DLR
29 Mita Sucas	NRR/DLR

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
565th FULL COMMITTEE MEETING

September 10-12, 2009

PLEASE PRINT

TODAY'S DATE: September 11, 2008

NAME

JAMES MEDOFF
BRIAN HOLMAN
SEONG MIN
Mike Blasse
CLIFF DQUIN
Dan HARR
ALBERT WONG
Robert Sun
On Yee
Bert Fu
Zuhan Xi
Kim Green
Bob Kuntz

NRC ORGANIZATION

NRR/DLR
NRR/DLR
NRR/DLR
NRR/DLR
NRR/DLR
NRR/DLR/RER2
NRR/DLR/RER1
NRR/DLR
|| ||
NRR/DLR
NRR/DLR
NRR/DLR/RPB2
NRR/DLR/RPB2

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
565th FULL COMMITTEE MEETING

September 10-12, 2009

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TODAY'S DATE: September 11, 2009

NAME

NRC ORGANIZATION

1 MAURICE HEATH

NRR

2 SHEILA RAY

NRR/DE

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

564th FULL COMMITTEE MEETING
565

September 10-12, 2009

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TODAY'S DATE: September 11, 2009

NAME	AFFILIATION
KATHRYN JUTON	MORDAN LEWIS
Greg Halnon	First Energy
Todd Schweitzer	First Energy
Joseph Tweedell	FENOC
DAVID JENKINS	First Energy
Gary Harlow	Lehigh University
David Grabski	First Energy
Anthony Demetrouch	First Energy
PAUL KAUFMANN	NRC - ABBLOW I
PETE SENA	FE
Mark Mauer	FE
Lawrence R Con	W
Michael Heath	Progress Energy
Dave Flyte	APL Susquehanna
MASSOUD TAFAZZOLI	ARIEVA
Tony HARRIS	STARS
Philippe Soenen	PG&E
Paul Crawley	APS/STARS
Chalmer Myer	STARS
CHRIS WILSON	EXELON
MIKE GOLDSBERG	EXELON
PAUL GUNTER	BEYOND NUCLEAR
Rachel Vaucher	NRR/DLR
Bruce Lin	NRR/DLE
Aleem Batright	NRR/DRA/AADB
M. GAVELINS	NRR/DCI
JIM CHUNG	MNES

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

564th FULL COMMITTEE MEETING
565

September 10-12, 2009

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TODAY'S DATE: September 11, 2009

<u>NAME</u>	<u>AFFILIATION</u>
1 JOHN PATTERSON	FENOC
2 CLARK MICOFF	WESTINGHOUSE
3 CHIFF CUSTER	FENOC
4 Gene Fickholt	Kcel Energy
5 MICHAEL SCARPELO	AEP
6 Randall Woods	Platts
7 KAMAL MANOLY	NRC/NRR
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**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

September 21, 2009

**AGENDA
566th ACRS MEETING
OCTOBER 8-10, 2009**

**THURSDAY, OCTOBER 8, 2009, COMMISSIONERS' CONFERENCE ROOM O-1F16, ONE
WHITE FLINT NORTH, ROCKVILLE, MARYLAND**

- 1) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (MVB/EMH/SD)
 - 1.1) Opening statement
 - 1.2) Items of current interest

- 2) 8:35 – 10:30 A.M. Combined License Application for North Anna, Unit 3, Economic Simplified Boiling Water Reactor (ESBWR) and the Draft Safety Evaluation Report (SER) with Open Items (Open) (MLC/CLB)
 - 2.1) Remarks by the Subcommittee Chairman
 - 2.2) Briefing by and discussions with representatives of the NRC staff and Dominion Virginia Power regarding the North Anna ESBWR Combined License Application, the draft SER with Open Items, and related matters.

Members of the public may provide their views, as appropriate.

10:30 – 10:45 A.M. * BREAK *****

- 3) 10:45 – 12:15 P.M. License Renewal Application and Final SER for the Susquehanna Steam Electric Station, Units 1 and 2 (Open) (WJS/PW)
 - 3.1) Remarks by the Subcommittee Chairman
 - 3.2) Briefing by and discussions with representatives of the NRC staff and PPL Susquehanna, LLC regarding the license renewal application for the Susquehanna Steam Electric Station, Units 1 and 2, the associated NRC staff's final SER, and related matters.

Members of the public may provide their views, as appropriate.

12:15 – 1:15 P.M. * LUNCH *****

- 4) 1:15 – 3:15 P.M. Steam Generator Action Plan (SGAP) Task 3.5, “A Risk Assessment of Consequential Steam Generator Tube Ruptures,” and other SGAP items (Open) (DAP/CLB)
4.1) Remarks by the Subcommittee Chairman
4.2) Briefing by and discussions with representatives of the NRC staff regarding SGAP Task 3.5, other SGAP items, and related matters.

Representatives of the nuclear industry and members of the public may provide their views, as appropriate.

3:15 – 3:30 P.M. * BREAK *****

- 5) 3:30 – 5:00 P.M. Oyster Creek 3-Dimensional Structural Analysis of the Drywell Shell (Open) (WJS/PW)
5.1) Remarks by the Subcommittee Chairman
5.2) Briefing by and discussions with representatives of the NRC staff and Exelon Generation Company, LLC, regarding the Oyster Creek 3-dimensional structural analysis of the drywell shell and related matters.

Members of the public may provide their views, as appropriate.

5:00 – 5:15 P.M. * BREAK *****

CONFERENCE ROOM T-8A1, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 6) 5:15 – 7:00 P.M. Preparation of ACRS Reports (Open)
Discussion of proposed ACRS reports on:
6.1) Combined License Application for North Anna, Unit 3, ESBWR and the Draft SER with Open Items (MLC/CLB)
6.2) License Renewal Application and Final SER for the Susquehanna Steam Electric Station, Units 1 and 2 (WJS/PW)
6.3) Steam Generator Action Plan (SGAP) Task 3.5, “A Risk Assessment of Consequential Steam Generator Tube Ruptures,” and other SGAP items (DAP/CLB)
6.4) Oyster Creek 3-Dimensional Structural Analysis of the Drywell Shell (WJS/PW)

FRIDAY, OCTOBER 9, 2009, COMMISSIONERS’ CONFERENCE ROOM O-1F16, ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 7) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (MVB/EMH/SD)
8) 8:35 – 9:45 A.M. Draft Final Revision 2 to Regulatory Guide 1.189, “Fire Protection for Nuclear Power Plants” (Open) (JDS/KDW)
8.1) Remarks by the Subcommittee Chairman

- 8.2) Briefing by and discussions with representatives of the NRC staff regarding the draft final Revision 2 to Regulatory Guide 1.189, NRC staff's resolution of public comments, and related matters.

Representatives of the nuclear industry and members of the public may provide their views, as appropriate.

9:45 – 10:00 A.M. * BREAK *****

- 9) 10:00 – 11:00 A.M. 10 CFR Part 52 Regulatory Process (Open) (DCB/GSS)
9.1) Remarks by the Subcommittee Chairman
9.2) Briefing by and discussions with representatives of the NRC staff regarding the 10 CFR Part 52 regulatory process and related matters.

Representatives of the nuclear industry and members of the public may provide their views, as appropriate.

- 10) 11:00 – 11:15 A.M. Subcommittee Report (Open)
Report by and discussions with the Chairman of the AP1000 Subcommittee regarding selected Chapters of the draft SER with open items related to changes to the AP1000 Design Control Document that were discussed during the meeting on October 6-7, 2009. (HBR/MPL)

11:15 – 12:15 P.M. * LUNCH *****

- 11) 12:15 – 1:00 P.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open/Closed) (MVB/EMH)
11.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the Full Committee during future ACRS meetings.
11.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments.

[NOTE: A portion of this session may be closed pursuant to 5 U.S.C. 552b (c)(2) and (6) to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy]

- 12) 1:00 – 1:15 P.M. Reconciliation of ACRS Comments and Recommendations (Open) (MVB/CS/AFD)
Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.
- 1:15 – 1:30 P.M. *** BREAK *****
- 13) 1:30 – 3:30 P.M. Draft ACRS Report on the NRC Safety Research Program (Open) (DAP, et al/HPN, et al)
13.1) Remarks by the Subcommittee Chairman
13.2) Discussion of a draft ACRS report on the NRC Safety Research Program
- 3:30 – 3:45 P.M. *** BREAK *****

CONFERENCE ROOM T-8A1, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 14) 3:45 – 7:00 P.M. Preparation of ACRS Reports (Open)
Discussion of proposed ACRS reports on:
14.1) Combined License Application for North Anna, Unit 3, ESBWR and the Draft SER with Open Items (MLC/CLB)
14.2) License Renewal Application and Final SER for the Susquehanna Steam Electric Station Units 1 and 2 (WJS/PW)
14.3) Steam Generator Action Plan (SGAP) Task 3.5, “A Risk Assessment of Consequential Steam Generator Tube Ruptures,” and other SGAP items (DAP/CLB)
14.4) Oyster Creek 3-Dimensional Structural Analysis of the Drywell Shell (WJS/PW)
14.5) Draft Final Revision 2 to Regulatory Guide 1.189, “Fire Protection for Nuclear Power Plants” (JDS/KDW)

SATURDAY, OCTOBER 10, 2009, CONFERENCE ROOM T-8A1, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 15) 8:30 – 1:30 P.M. Preparation of ACRS Reports (Open)
(10:30-10:45 A.M. BREAK) Continue discussion of the proposed ACRS reports listed under Item 14.
- 16) 1:30 – 2:00 P.M. Miscellaneous (Open) (MVB/EMH)
Discussion of matters related to the conduct of Committee activities and specific issues that were not completed during previous meetings, as time and availability of information permit.

NOTES:

- During the days of the meeting, phone number 301-415-7360 should be used in order to access anyone in the ACRS Office.
- Presentation time should not exceed 50 percent of the total time allocated for a given item. The remaining 50 percent of the time is reserved for discussion.
- Thirty five (35) hard copies and one (1) electronic copy of the presentation materials should be provided to the ACRS in advance of the briefing.
- One (1) electronic copy of each presentation should be emailed to the Designated Federal Official 1 day before the meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the Designated Federal Official with a CD containing each presentation at least 30 minutes before the meeting.

LIST OF HANDOUTS
565th ACRS MEETING
September 10-12, 2009

- I. Opening Remarks by the ACRS Chairman
 1. Opening Remarks
 2. Items of Interest

- II. License Renewal Application and Final Safety Evaluation Report (SER) for the Indian Point Nuclear Generating Units 2 and 3
 3. Proposed Schedule
 4. Status Report
 5. Subcommittee meeting minutes dated May 6, 2009
 6. Letter from Entergy to NRC, dated June 12, 2009 - Related to OI 2.5.1 (Station Blockout Scoping), OI 3.0.3.2.15-1 (IP2 Reactor Refueling Cavity Leakage), OI 3.4.1 (AMR Results for the AFW Room Event)
 7. Letter from Entergy to NRC, dated May 1, 2009 - Related to OI 3.0.3.2.15-2 (IP2 Spent Fuel Pool Leak), OI 3.0.3.3.2.1 (Exterior Containment Concrete Degradation), OI 3.5.1 (Water-Cement Ratio for Indian Point Concrete), and OI 3.5.2 (Reduction of Strength and Modulus of Concrete because of Elevated Temperatures)
 8. Letter from Riverkeeper to Otto L. Maynard (ACRS), "Follow-up Comments to the ACRS on the Indian Point License Renewal Application and Safety Evaluation Report with Open Items," dated April 16, 2009
 9. Letter from David J. Wrona (NRR) to Edwin Hackett (ACRS), dated August 18, 2009, transmitting the staff's final safety evaluation report

- III. License Renewal Application and Final SER for the Three Mile Island Nuclear Station, Unit 1
 10. Proposed Schedule
 11. Status Report
 12. Subcommittee meeting minutes dated May 27, 2009
 13. Consultant's Report
 14. NRC Final Safety Evaluation Report, dated June 2009

- IV. Draft Final Revision 1 to Regulatory Guide 1.205, "Risk-Informed Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," and Proposed Standard Review Plan (SRP) Section 9.5.1.8, "Risk-Informed, Performance-Based Fire Protection"

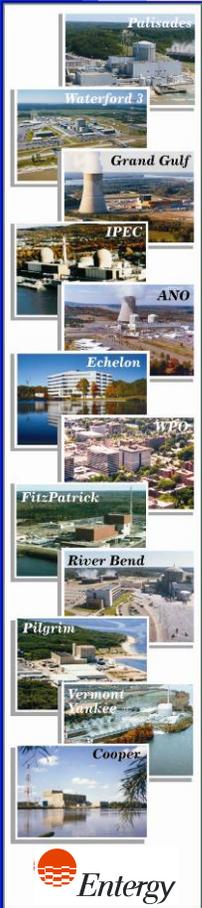
Presentation information was not available at the time the meeting minutes were finalized.

LIST OF HANDOUTS
565th ACRS MEETING
September 10-12, 2009

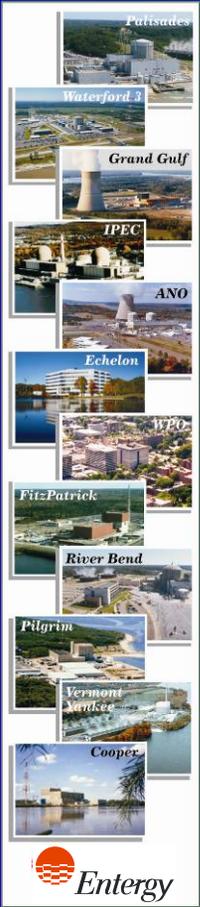
- V. Draft Digital Instrumentation and Control (DI&C) Research Plan for 2010 – 2014
15. Table of Contents
 16. Proposed Agenda
 17. Status Report
 18. Digital I&C Plan FY 2010 – FY 2014
 19. Status of NRC Digital System Research Plan FY2005 -2009
 20. Mapping of DI&C Research Plan of FY2005-FY2009 to FY2010-FY2014
- VI Draft Final Revision 2 to Regulatory Guide 1.189, “Fire Protection for Nuclear Power Plants”
21. Proposed Schedule
 22. Status Report
 23. Draft Regulatory Guide DE-1214 (Proposed Revision 2 of Regulatory Guide 1.189 dated March 2007 (issued for public comment)
 24. Draft Regulatory Guide DE-1214 (Proposed Revision 2 of Regulatory Guide 1.189 dated March 2007 (with Industry Comments incorporated - strike out version)
 25. Draft Regulatory Guide DE-1214 (Proposed Revision 2 of Regulatory Guide 1.189 dated March 2007 (with Industry Comments incorporated - clean version)
 26. NRC Responses to Comments – Comments on Draft RG 1.189, Revision 2 (DG-1214)
 27. SECY-08-0093, For the Commissioners, from R. W. Borchardt, Executive Director for Operations, “Resolution of issues related of Fire-Induced circuit Failures”
 28. NEI 00-01, Revision 2, “Guidance for Post Fire Safe Shutdown Circuit Analysis”
- VII Updated information related to License Renewal Application and the supplemental SER for the Beaver Valley Power Station
29. Proposed Schedule
 30. Status Report
 31. Letter from Peter Sena III, FENOC to NRC, dated July 28, 2009 – Supplemental Information for the review of BVPS Units 1 and 2 license renewal application regarding volumetric examinations of the BVPS containment liners
 32. NRC Information Notice 2004-09, “Corrosion of Steel containment and containment Liner” dated April 27, 2004
 33. Letter from ACRS to Chairman Diaz, dated July 18, 2005 – Report on the Safety Aspects of the License Renewal Application for the Donald C. Cook Nuclear Plant, Units 1 and 2
 34. Letter from ACRS to Chairman Diaz, dated May 17, 2006 – Report on the Safety Aspects of the License Renewal Application for the Brunswick Steam Electric Plant, Units 1 and 2
 35. NRC Inspection Report 05000334/2009006 regarding inspection conducted in response to FENOC’s discovery of a through-wall hole in the Unit 1 containment liner

Indian Point Energy Center

**ACRS License Renewal Committee Meeting
September 10, 2009**



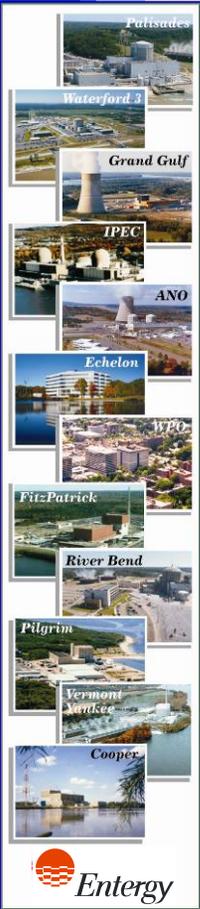
Indian Point Energy Center Personnel in Attendance



Joe Pollock
Fred Dacimo
Pat Conroy
Don Mayer
Garry Young
Tom Orlando
Bob Walpole
Mike Tesoriero
Tom McCaffrey
John Curry
Mike Stroud
Alan Cox
Rich Drake
Nelson Azevedo

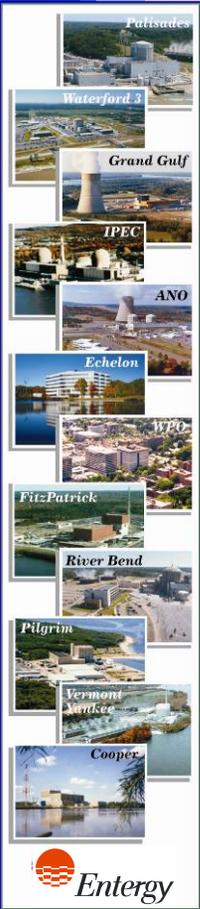
Vice President, Site – IP
Vice President, License Renewal – IP
Director, Nuclear Safety Assurance - IP
Director, Emergency Planning
Director, Business Development
Director, Engineering – IP
Manager, Licensing – IP
Manager, Programs & Components – IP
Manager, Design Engineering
Project Manager, License Renewal – IP
Project Manager, License Renewal
Technical Manager, License Renewal
Supervisor, Civil / Structural Engineering
Supervisor, Code Programs

Background



ACRS Items of Interest

- Containment Penetration Cooling System
- Exterior Containment Concrete Monitoring
- IP2 Containment Liner
- IP2 Refueling Cavity Leakage
- IP2 Spent Fuel Pool Leak Plume

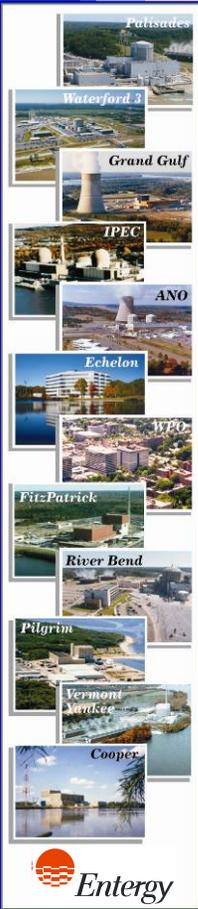


Containment Penetration Cooling System

ACRS Questions

Did the analysis look at no flow, in other words, blockage of those cooling channel paths such that there was no convective heat transfer from the concrete?

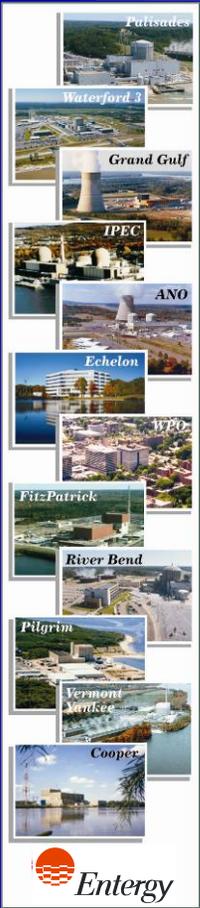
If those cooling channels became plugged or fouled such that you had no air passage through there or substantially reduced air passage, regardless of the status of the blowers, would you still reach only a maximum of 200 degrees Fahrenheit?



Containment Penetration Cooling System

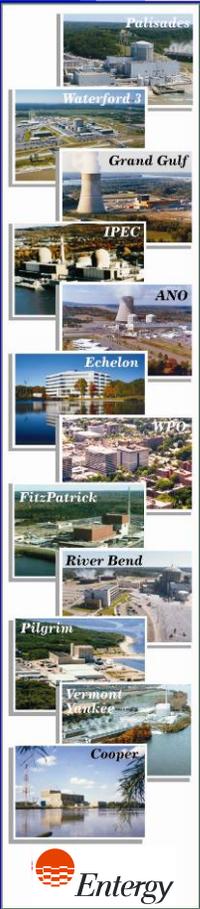
Response

- Calculations were performed assuming no flow conditions which indicate temperature would exceed 200 degrees.
- Design simplicity and operating practices assure high system reliability.



Containment Penetration Cooling System

- Operators perform daily rounds.
- Operating procedures provide corrective actions based on instrument readings, including cleaning out penetrations, and replacing filters and silencers.
- Plant operating experience indicates that system is properly managed and is reliable.
- Concrete properties would not degrade below 300 degrees F.

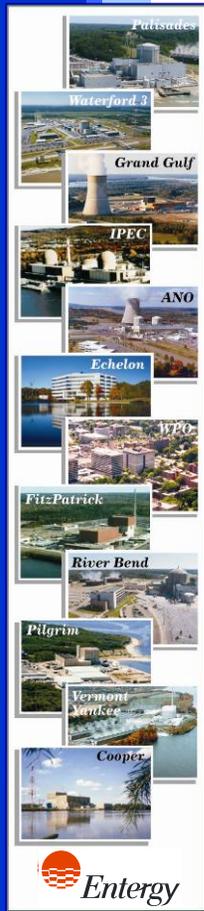


Exterior Containment Concrete Monitoring

ACRS requested more information on IPEC containment concrete conditions.

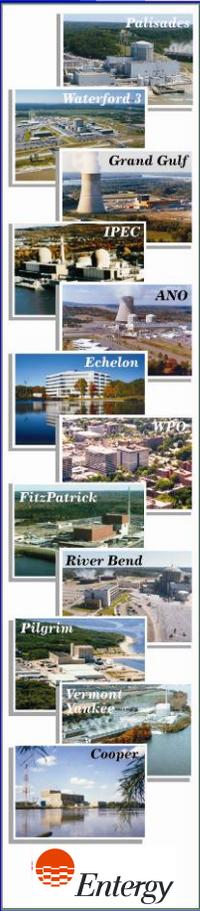
Response:

The IPEC concrete containments are monitored by the ISI IWL Program.



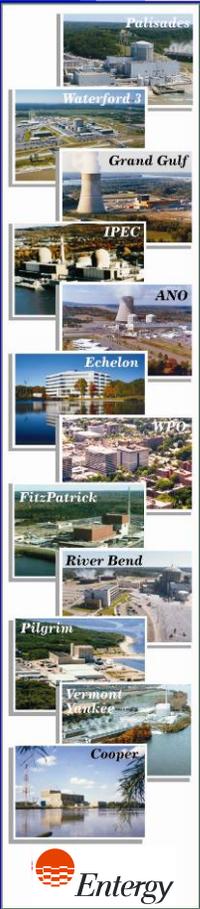
Exterior Containment Concrete Monitoring

- Isolated areas of surface degradation exist at some Cadweld rebar joints and scaffolding attachment points used during construction.
 - Documented in initial baseline inspections in 1995.
- Areas are monitored and have shown no structural impact to containment concrete.
- 41 locations at IP2 and 7 locations at IP3
- Locations are being coated.

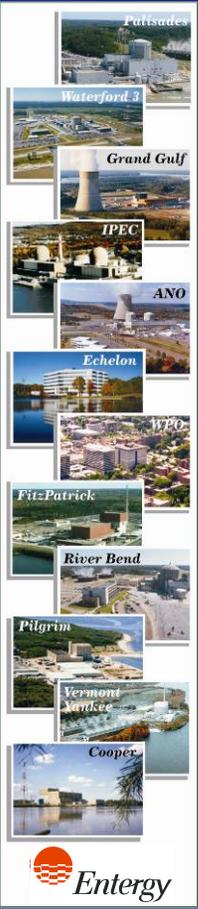
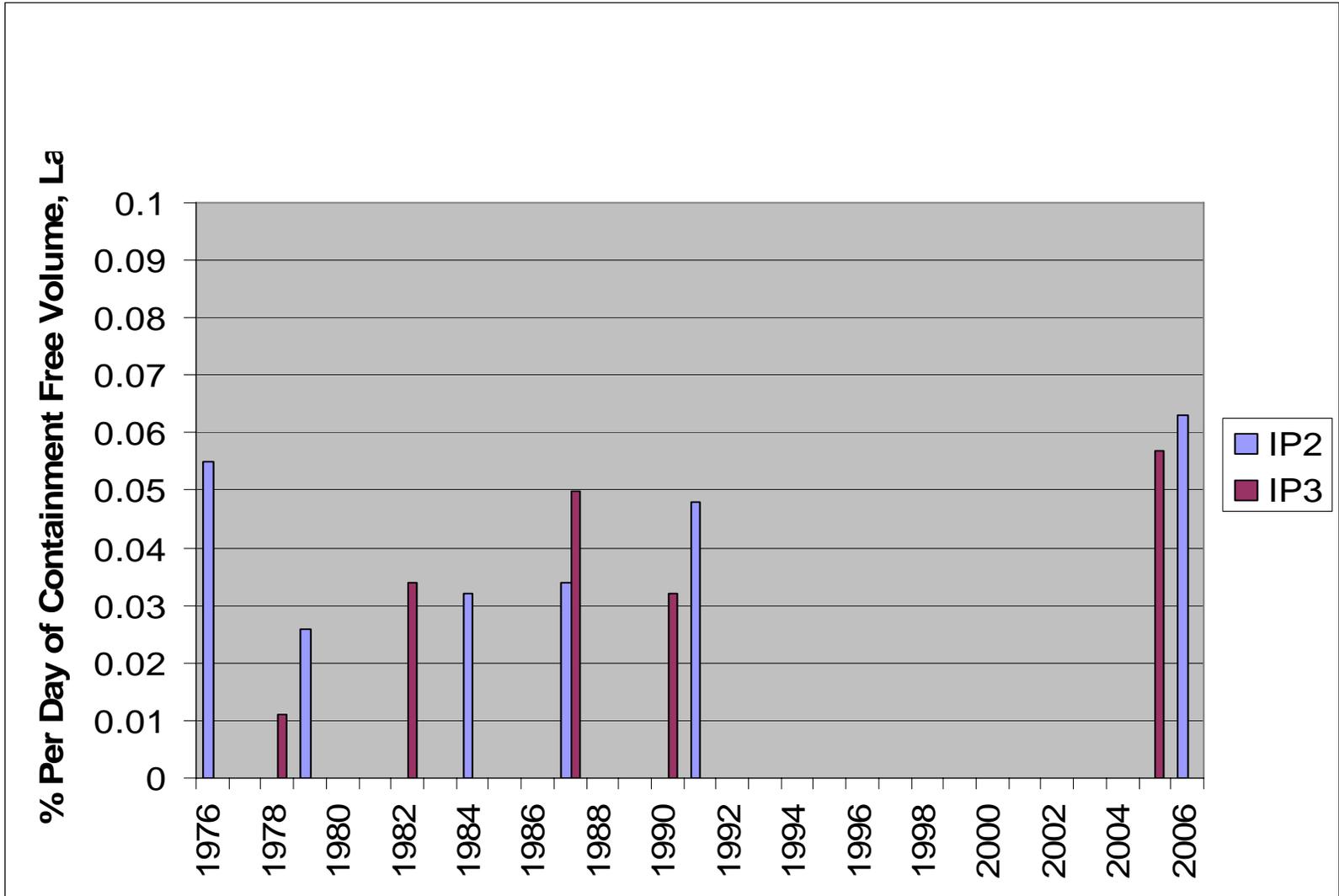


ILRT Results

- Past ILRT results all below requirement of 0.075% of free volume per day.
- No unexplained changes in ILRT leak rates.



ILRT Results

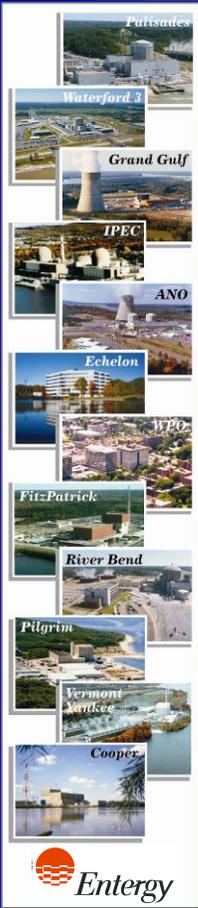


Exterior Containment Concrete Monitoring

Conclusion

The results of all ILRTs for both Units 2 and 3 have been satisfactory.

Visual inspections of the containment structures were performed with satisfactory results.

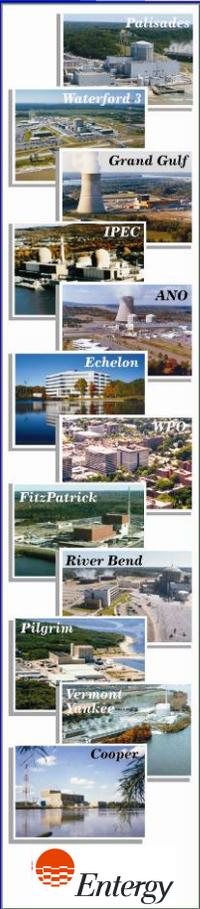


IP2 Containment Liner

ACRS requested more information on IP2 containment liner deformation and concrete conditions.

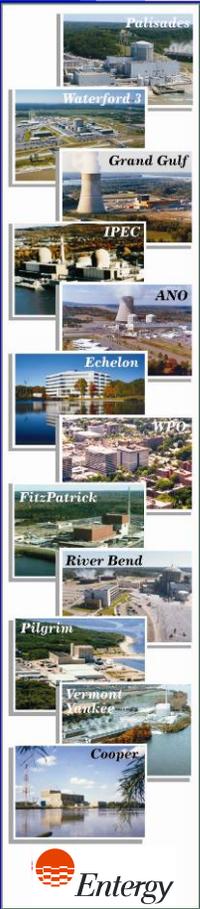
Response:

A feedwater line leak in 1973 caused hot steam/water to impinge on the IP2 uninsulated portion of the containment liner causing a deformation of the liner in the vicinity of the piping (i.e., a bulge, approximately 5/8 inch and 2 feet wide running horizontally intermittently around containment for 60 feet).



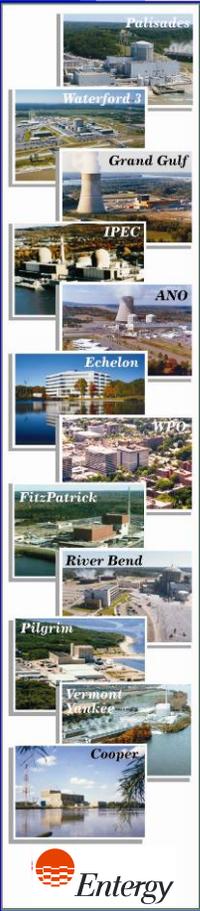
IP2 Containment Liner

- An evaluation of the steam/water mixture, that impinged on the liner, concluded that concrete temperature was below 300°F, the containment design temperature; therefore no damage to the concrete was expected.
- ILRTs and magnetic particle inspections of the liner and weld channel testing demonstrated liner integrity and that there was no loss or degradation of containment integrity.



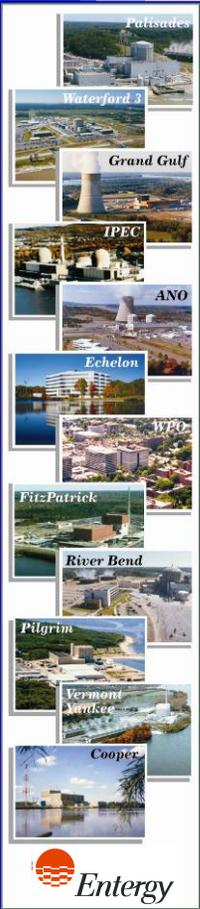
IP2 Containment Liner

- Ultrasonic inspection showed that 9 of 28 L-shaped studs in the bulged area were broken.
- These L-shaped studs are imbedded in the concrete and overlap rebar. Design of the ½ inch diameter studs is such that the stud would break well before containment concrete damage would occur.



IP2 Containment Liner

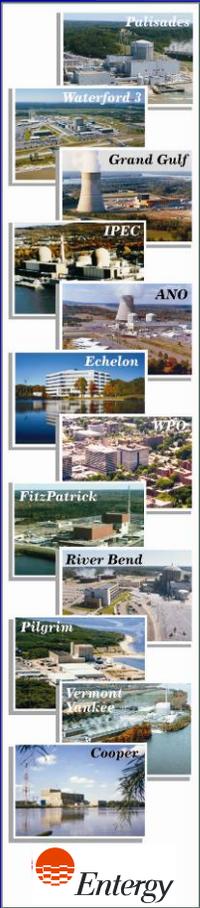
- Insulation was installed over the liner including the area of the bulge to preclude exposure again.
- An inspection of the bulged liner behind the insulation will be performed before the period of extended operation.



IP2 Containment Liner

Conclusion

- The 1973 feedwater line leak event did not adversely affect the containment liner and concrete condition.



IP2 Refueling Cavity Leakage

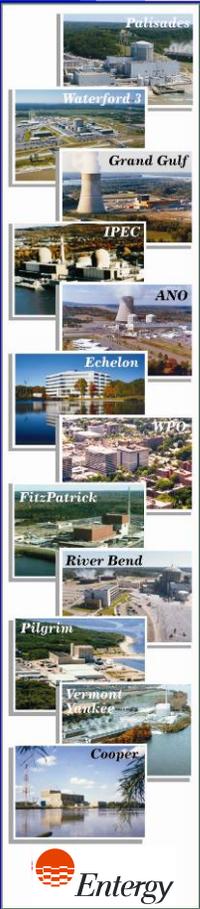
ACRS requested information about the safety significance of the leak and better figures to show the flow paths.

Response:

Refueling cavity leakage has no safety significance.

Leakage occurs only during approximately two-week period while the canal is filled during refueling outages once every two years.

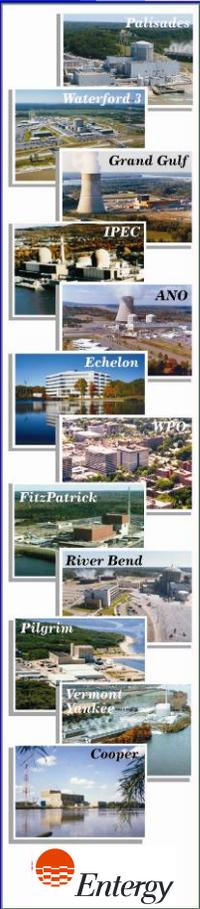
Industry experience, as confirmed by recent EPRI Report No. 1019168, supports the conclusion that degradation of the reinforcing steel and concrete is negligible.



IP2 Refueling Cavity Leakage

- Leak location

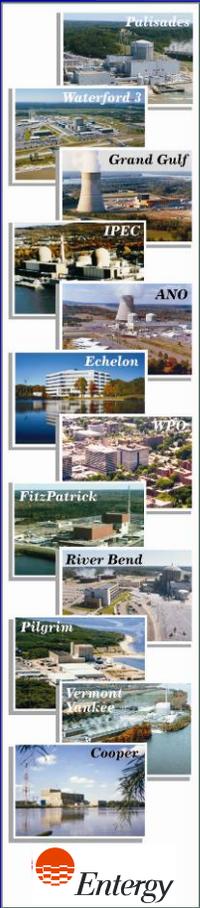
- The refueling cavity begins to leak when the cavity has been filled to between 80' and 85'.
- Leakage occurs from three primary areas.
- Leakage is collected in sump and pumped to liquid radwaste processing system



IP2 Refueling Cavity Leakage

Inspections and Evaluations

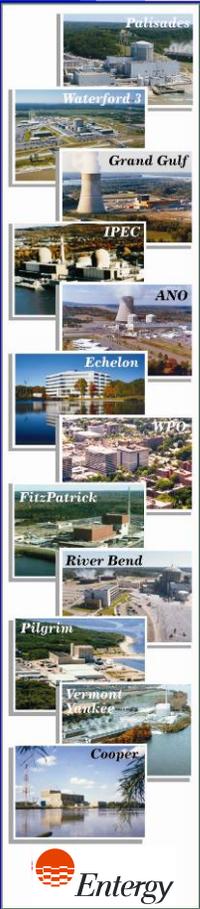
- Evaluated on several occasions with the conclusion that leakage had negligible impact on structural integrity of the refueling cavity walls and adjoining structures.
- Previous inspections – included core samples removed from the refueling cavity wall in 1993.



IP2 Refueling Cavity Leakage

Future Plans

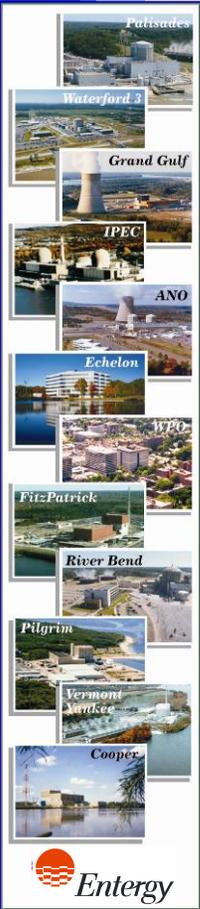
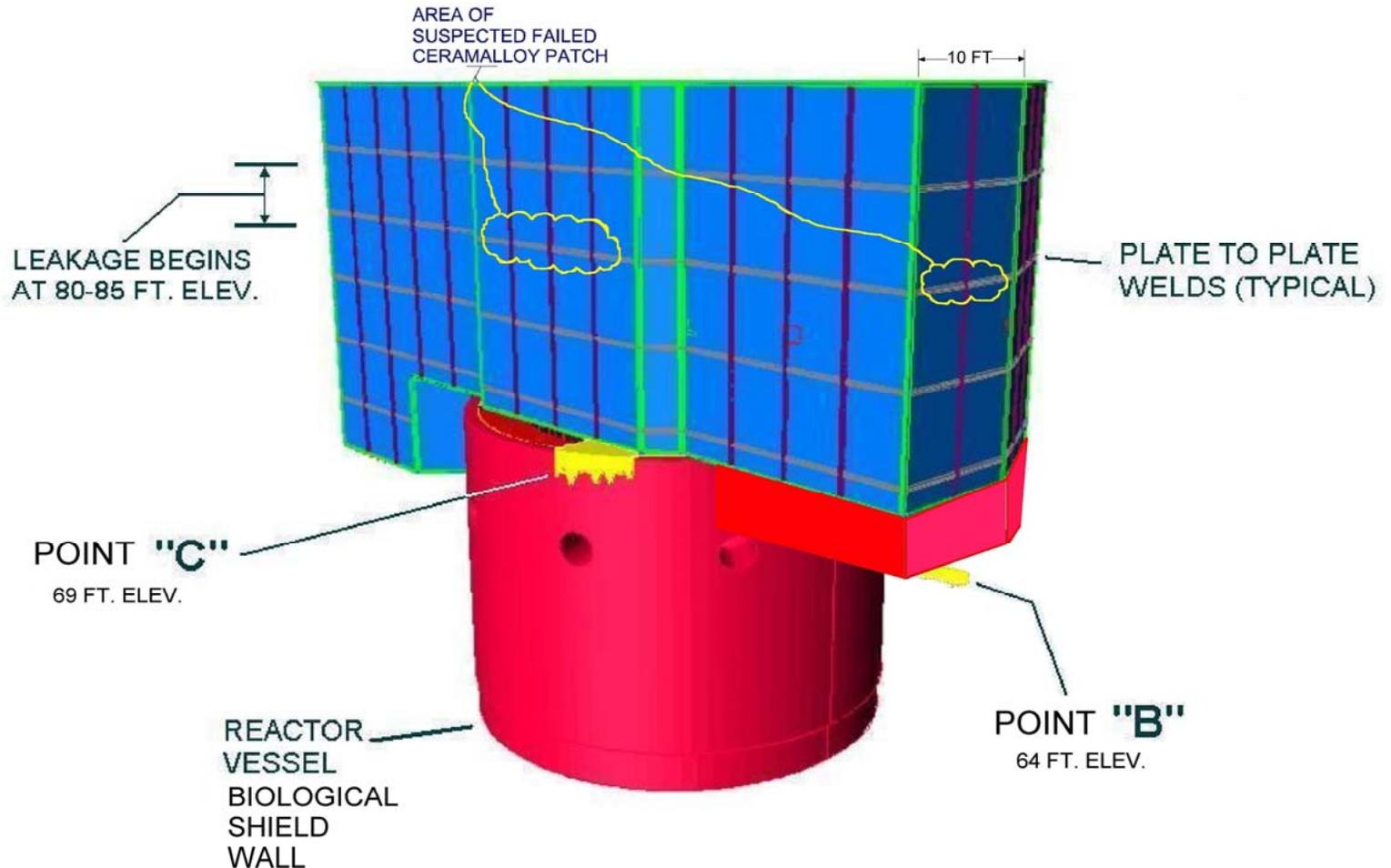
- Inspection prior to the period of extended operation will be performed to re-confirm no long term degradation (planned for 2010).
 - Rebar inspections including core bore samples
 - License renewal commitment
- Cavity liner repair activities planned for the subsequent refueling outages
- If a solution to the leakage is not achieved, IPEC will perform additional core samples and reinforcing steel inspections prior to the end of the first ten years of the PEO.



IP2 Refueling Cavity

FIGURE 1

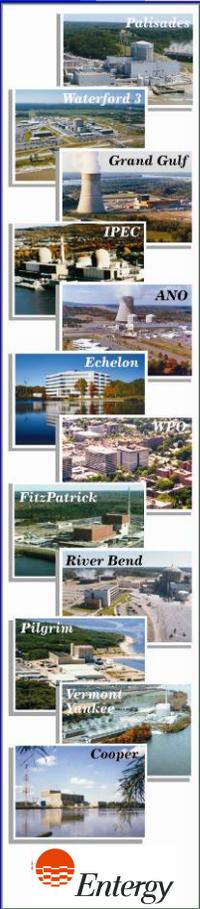
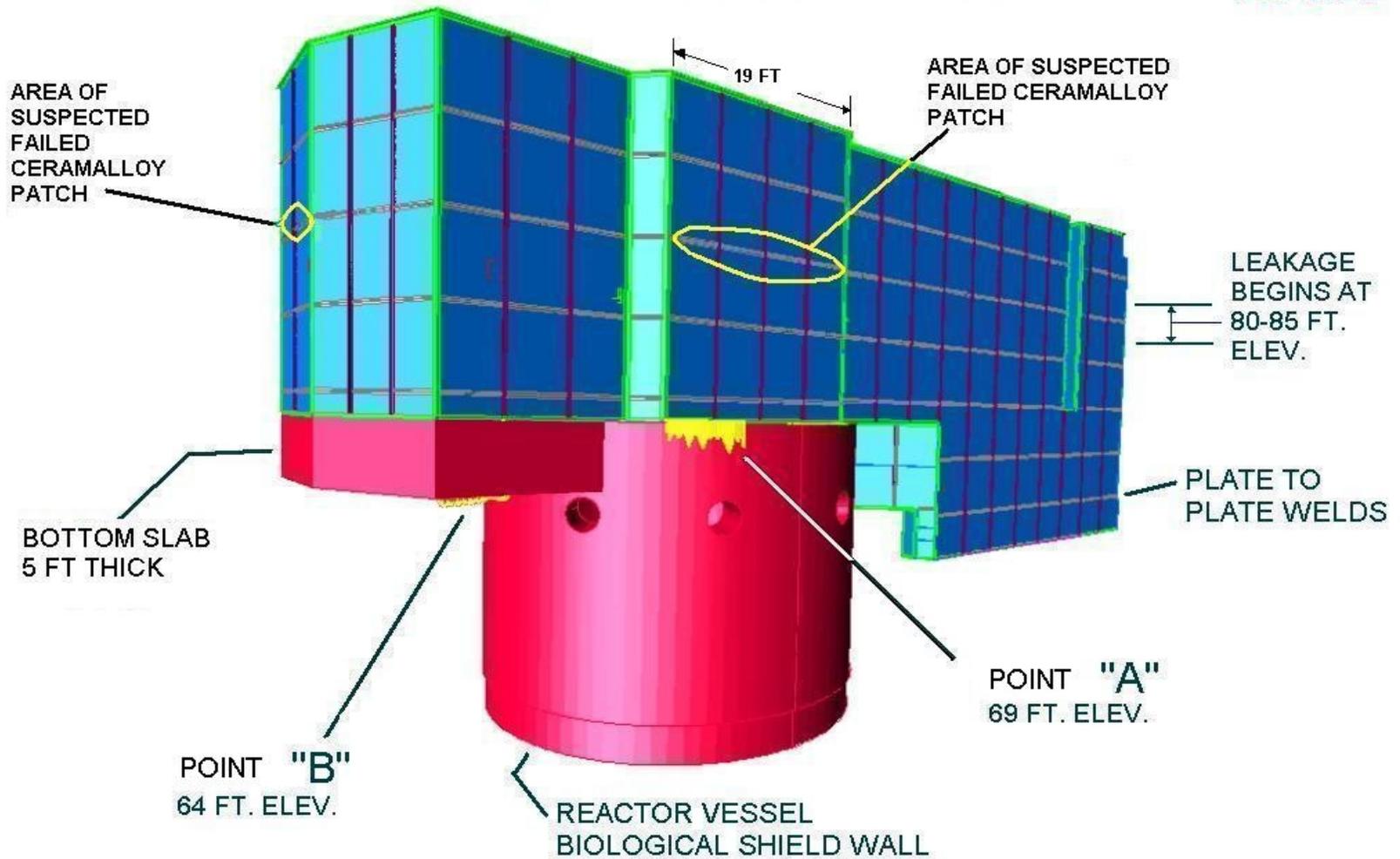
VIEW FROM NORTHWEST



IP2 Refueling Cavity

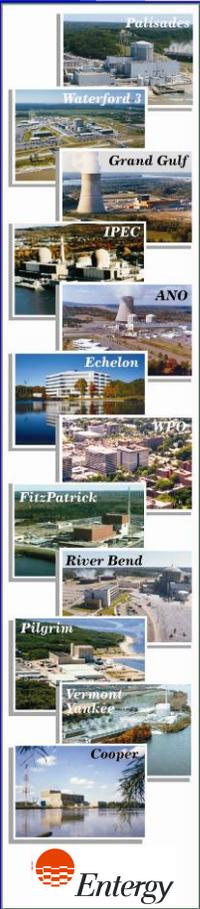
VIEW FROM SOUTHWEST

FIGURE 2



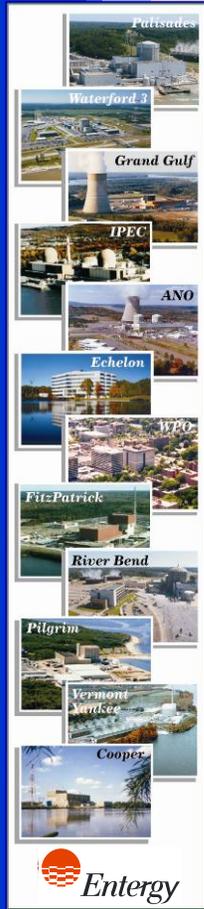
IP2 Spent Fuel Pool Leak Plume

ACRS asked the applicant to bring more detailed hydrologic plume data for the IP2 spent fuel pool.

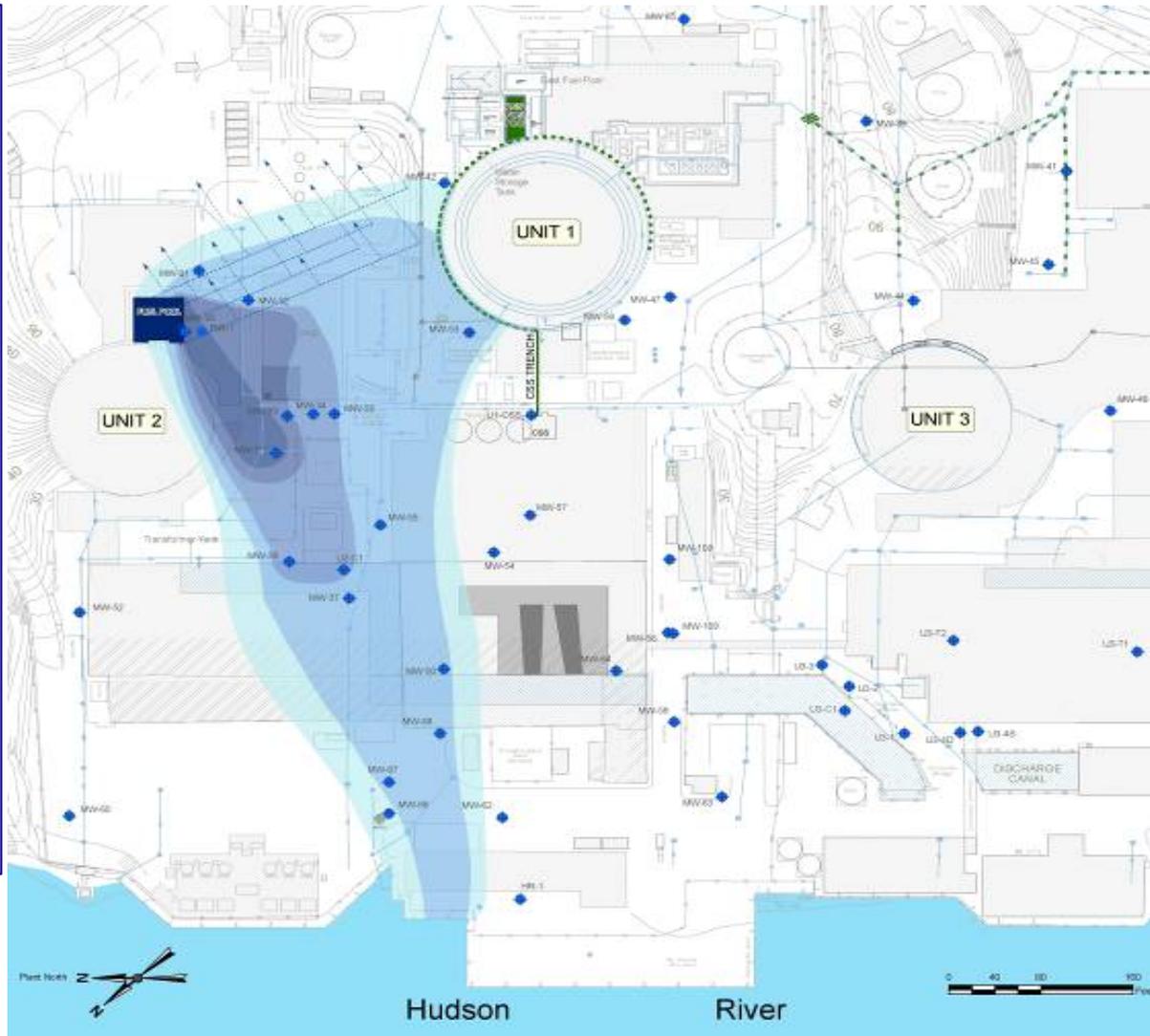


Plume Characteristics and Leak Behavior

- Site conceptual hydrology model is robust and extensively documented.
- Over 40 monitoring wells, most of which are multi-level and range up to ~300' in depth
- Wells are configured with level transducers and sample ports for chemical/radiological sampling
- Plume characteristics and leak behavior understood in 3D space and time.
- Long-term monitoring program is institutionalized
 - Assess plume attenuation
 - Radiological dose assessment
 - Ongoing capability for detecting new leaks should they occur
 - **No tritium found in offsite wells.**



IP2 Spent Fuel Pool Leak



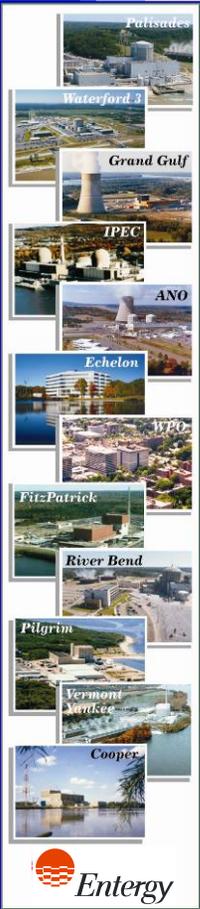
Unit 2 Source Map

GW flow is west to river

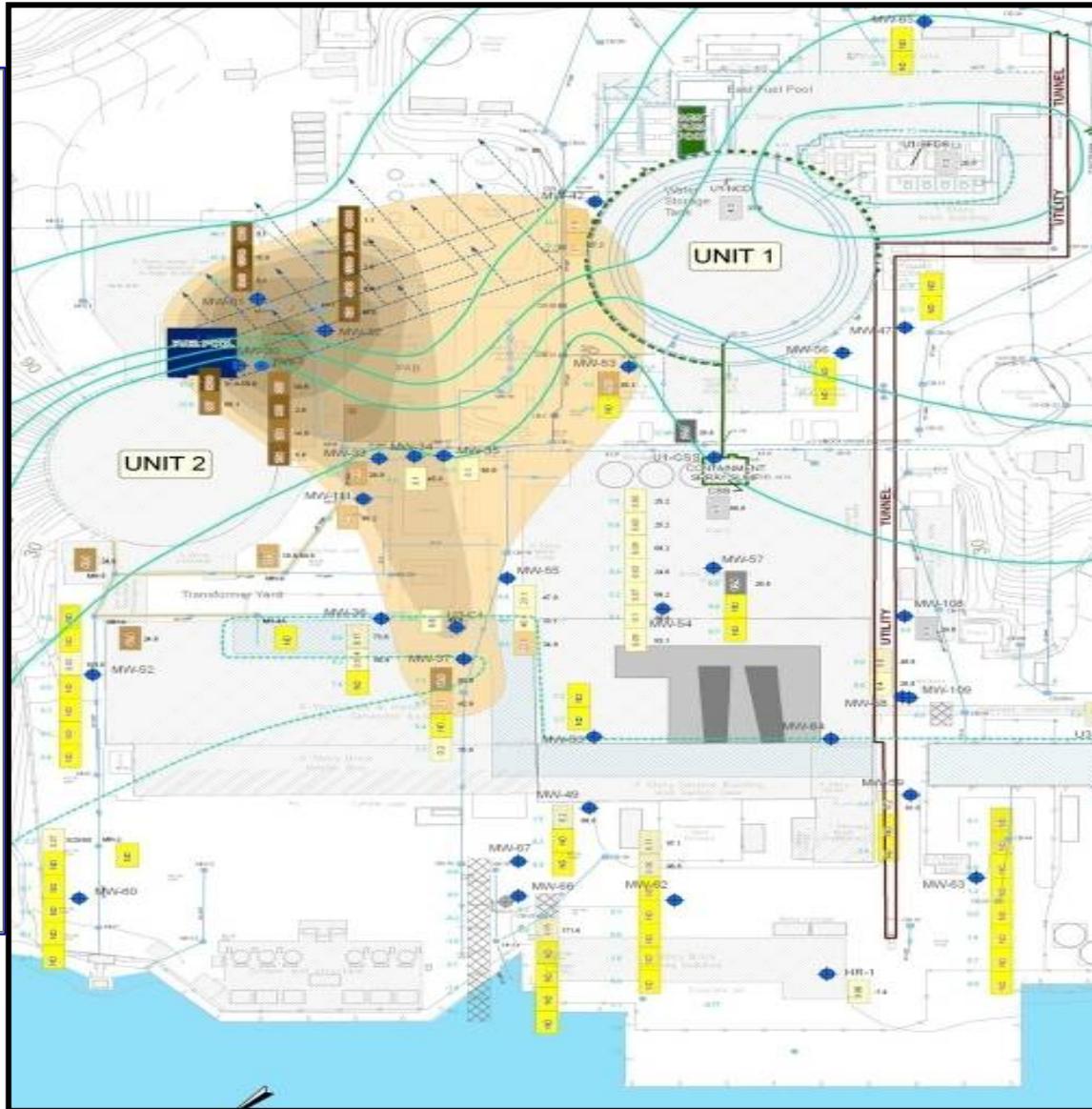
Wells provide “sentinel” and broad base monitoring

Detection capability of leak near pool confirmed via dye testing

[Tritium Plume]



IP2 Spent Fuel Pool Leak

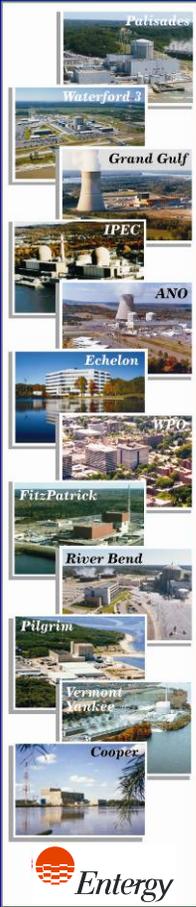


Tracer Test

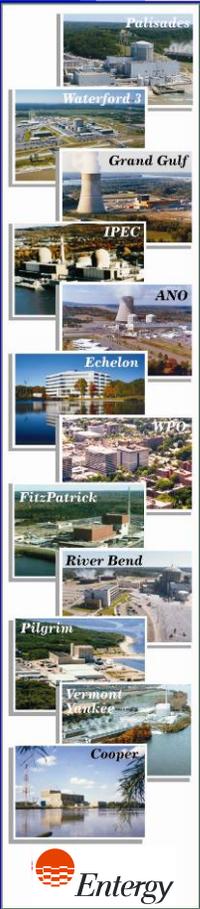
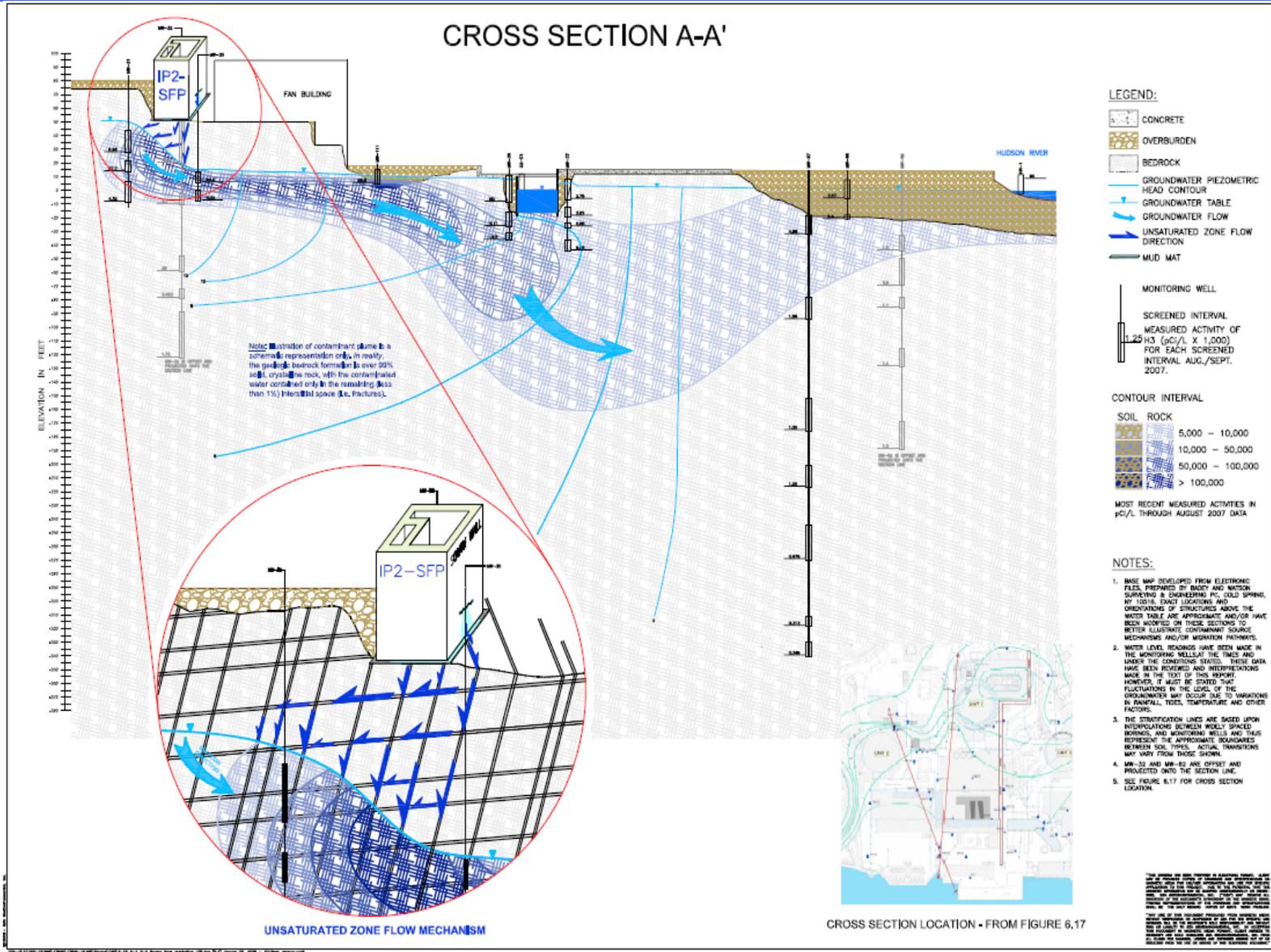
Multi month test adds confirmatory data to conceptual model

Supports retention mechanism at Unit 2 pool

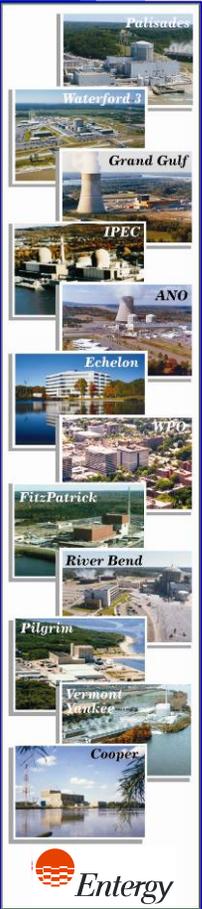
Connectivity between Units 2 and 1 observed



IP2 Spent Fuel Pool Leak



Comments and Questions





U.S. NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

Advisory Committee on Reactor Safeguards

Indian Point Nuclear Generating Unit

Nos. 2 and 3

Safety Evaluation Report

September 10, 2009

Kimberly Green, Project Manager
Office of Nuclear Reactor Regulation

Overview

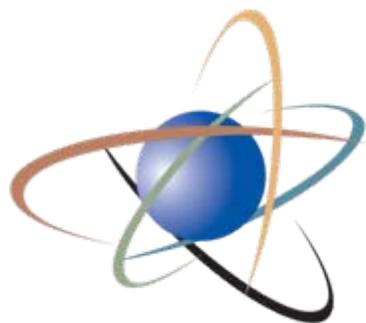
- NRC Staff Review
- License Renewal Inspections
- Items of Interest

NRC Staff Review

- LRA submitted by letter dated April 23, 2007
- 121 RAIs
- 5 Audits
 - 272 audit questions
- 4 Inspections
 - Inspection Report issued August 1, 2008
- Safety Evaluation Report with Open Items issued January 15, 2009
 - 20 open items

NRC Staff Review (cont.)

- Applicant submitted additional information by letters dated 1/27/09, 5/1/09, and 6/12/09 to address open items
- Staff closed all 20 open items
- SER issued on August 11, 2009
- Staff determined that the requirements of 10 CFR 54.29(a) have been met



U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

License Renewal Inspections

Glenn Meyer

Region I Inspection Team Leader

License Renewal Inspections

- 7 Aging Management Program concerns addressed
- Containment exterior addressed by Commitment 37
- Follow up on IP2 SBO diesel, electrical cable vault, and IP2 containment liner
- Scoping of nonsafety-related equipment is adequate

ACRS Items of Interest

- Buried Piping and Tanks Inspection Program
- Metal Fatigue
- Flow-Accelerated Corrosion (FAC)
- Upper-Shelf Energy (USE) Criteria

Buried Piping and Tanks Inspection Program

- Buried Piping and Tanks Inspection Program is a new program
- Program is consistent with the GALL AMP XI.M34, Buried Piping and Tanks Inspection
- GALL Report recommends:
 - one inspection prior to entering period of extended operation (PEO) and one during first 10 years of PEO
 - plant-specific operating experience be further evaluated for PEO
- Recent operating experience (OE) in February 2009 — IP2 condensate return line leak
- Amended program to incorporate recent OE

Amended Buried Piping and Tanks Inspection Program

- Applicant will perform 51 inspections prior to entering PEO
- Committed to periodic inspections using inspection methods with demonstrated effectiveness during PEO
- Number and inspection frequency based on:
 - Results of the planned inspections prior to the PEO
 - Other applicable industry OE
 - Plant-specific OE
 - Classification of piping/tanks and corrosion factors
- Staff concluded amended program adequate to manage aging effects

Metal Fatigue

- Applicant projected 60-year environmentally adjusted fatigue CUFs for NUREG/CR-6260 locations, except 2 locations (IP2) and 3 locations (IP3)
- Committed to manage aging for all NUREG/CR-6260 locations in accordance with 10 CFR 54.21(c)(1)(iii)

Metal Fatigue (cont.)

- Fatigue Monitoring Program
 - Consistent with GALL AMP X.M1, Metal Fatigue of Reactor Coolant Pressure Boundary
 - Incorporates environmental fatigue effects
 - Monitors the number of critical thermal and pressure transients
 - Maintains cumulative usage factor (CUF) below the design limit of 1.0
 - Periodic CUF updates
 - Action limit - triggers corrective actions
 - Corrective actions – repair, replacement or refined analyses
- Staff concluded applicant's program is adequate

Flow-Accelerated Corrosion Operating Experience

- In instances where minimum measured wall thickness was near or below minimum acceptable wall thickness:
 - Replaced affected piping sections
 - Expanded inspections
 - Included results in program

Flow-Accelerated Corrosion

- Consistent with GALL AMP XI.M17, Flow-Accelerated Corrosion, with one exception
 - Use EPRI NSAC-202L-R3 in lieu of NSAC-202L-R2
- All other program elements are consistent with GALL Report AMP
 - Updated inputs to the IP2 and IP3 Flow-Accelerated Corrosion Programs to include power uprate operating parameter changes
 - Identified piping systems and components that are currently most susceptible to loss of materials by FAC
 - Corrective actions include reevaluation, repair, or replacement
- Staff concluded applicant's program is adequate

Upper-Shelf Energy Criteria

- 10 CFR Part 50, Appendix G
 - Reactor vessel must maintain Charpy upper-shelf energy (USE) of no less than 50 ft-lb unless demonstrated that lower values of USE will provide margins of safety against fracture equivalent to those required by Appendix G of Section XI of the ASME Code
- Appendix K of ASME Code Section XI and ASME Code Case N-512 provide criteria for reactor vessels with Charpy USE values less than 50 ft-lb

Upper-Shelf Energy Criteria (cont.)

- Draft Guide DG-1023 and Regulatory Guide (RG) 1.161 provide NRC guidance in performing the ASME Code equivalent margins USE analyses
- RG 1.99, Revision 2 provides NRC guidance for determining the impact of neutron irradiation on Charpy USE

Upper-Shelf Energy Criteria (cont.)

- Applicant has projected the Charpy USE at the end of the period of extended operation in accordance with RG 1.99, Revision 2:
 - IP2: 48.3 ft-lb
 - IP3: 49.8 ft-lb
- Applicant submitted equivalent margins analysis
- WCAP-13587, Revision 1 demonstrates that 4-loop plants can meet ASME Code requirements at 43 ft-lb
- Applicant demonstrated that the analyses in WCAP-13587, Revision 1 are applicable to IP2 and IP3

Upper-Shelf Energy Criteria (cont.)

- Staff determined IP2 and IP3 reactor vessels will satisfy the Charpy USE requirements of 10 CFR Part 50, Appendix G at the end of the PEO
 - Analyses in WCAP-13587, Revision 1 are applicable to IP2 and IP3
 - Staff approved WCAP-13587, Rev. 1 in April 1994
 - Projected Charpy USE values are greater than minimum allowables determined in WCAP-13587, Revision 1

Back Up Slides

Auxiliary Feedwater Pump Room Fire Event

- Auxiliary feedwater (AFW) Pump Room Fire Event at IP2
 - Does not have automatic suppression
 - Relies on main feedwater (MFW) to feed steam generators (SGs)
- AFW Pump Room Fire Event at IP3
 - Has automatic suppression
 - Does not rely on MFW to feed SGs
- Staff agrees that AFW fire event at IP3 does not require additional components be included in scope for license renewal

IP2 Refueling Cavity Leakage

- Leakage originally documented in 1993
- Currently no indications of degradation based on bore samples and subsequent visual inspections
- Applicant committed to take bore samples during 2010 outage
- Applicant plans to fix leak by 2014 outage
- If fix is unsuccessful, bore samples will be taken and analyzed for structural integrity
- Staff concluded applicant's approach is adequate for managing aging effects in refueling cavity concrete

IP2 Spent Fuel Pool Leakage

- Originally observed and repaired in 1992
- “Wetting” observed in 2005
- In 2007, applicant inspected and tested accessible areas of the pool liner and believes it eliminated all known leakage sources
- Applicant stated there is currently no evidence of leakage
- In addition to inspections under the Structures Monitoring Program, applicant committed to quarterly samples of groundwater for indications of leakage
- Applicant concluded the structure has significant margin
- Staff concluded applicant’s approach is adequate for managing effects of aging for SFP structure

Containment Concrete Degradation

- Spalls first documented in 2000 IWL inspection
- 2005 IWL inspection found little or no change
- 2009 follow-up inspections also found little or no change
- Based on OE and commitment to include enhanced visual inspections, IWL inspection frequency is adequate
- Applicant concluded the structure has significant margin
- Staff concluded applicant's approach is adequate for managing aging effects of containment structures

Concrete Aging

- Staff confirmed durability of IP2 and IP3 concrete
- IWL and Structure Monitoring Programs will monitor concrete during PEO
- Staff concluded there is reasonable assurance that aging will be adequately managed

Cooling of Concrete Surrounding Penetrations

- The LRA was unclear on the temperatures surrounding hot penetrations
- Applicant explained that it maintains temperature below 200°F
- Via OE review, applicant confirmed the temperature remained below the limit

IP2 Water Hammer Event

- Feedwater line rupture occurred in 1973 which damaged the liner
- No indications of concrete damage from exterior IWL inspections
- Successful integrated leak rate tests since incident
- Current OE does not indicate concrete damage behind liner that would affect containment structural integrity
- Applicant committed to remove insulation and inspect an area of liner affected by the 1973 event
- If the one-time liner inspection indicates degradation, applicant will review issue

13 Open Items Needed Clarification

- OI 2.3A.3.11-1: AMR of yard hose houses and chamber housings
- OI 2.3.4.2-1: Scoping of main feedwater isolation valves
- OI 2.5-1: SBO scoping boundary
- OI 3.0.3.2.7-1: Fire penetration seals
- OI 3.0.3.3.3-1: Acceptance criteria for visual examinations
- OI 3.0.3.3.4-1: Inspection methods for lubrite sliding supports
- OI 3.0.3.3.4-2: Corrective actions for ISI
- OI 3.0.3.3.7-1: Periodic Surveillance and Preventive Maintenance Program
- OI 3.1.2-1: Nickel alloy components
- OI 3.1.2.2.7-1: Inspection of CASS
- OI 3.3-1: Clarification of material, environment, and aging effect for titanium components
- OI 3.5-3: Aging management of concrete surrounding B1 supports
- OI 4.3-1: Cycle counting

7 Open Items Needed Further Evaluation

- OI 2.3.4.5-1: AMR results of systems needed during AFW pump room fire event
- OI 3.0.3.2.15-1: IP2 reactor refueling cavity leakage
- OI 3.0.3.2.15-2: IP2 spent fuel pool leak
- OI 3.0.3.3.2-1: Exterior containment concrete degradation
- OI 3.4-1: AMR results for components needed during a fire in IP2 auxiliary feedwater pump room
- OI 3.5-1: Water-cement ratio for concrete
- OI 3.5-2: Reduction of strength and modulus of concrete due to elevated temperatures



**Three Mile Island
Generating Station - Unit 1
License Renewal Application**

**ACRS Presentation
September 10, 2009.**

INTRODUCTIONS

- Mike Gallagher VP, Exelon License Renewal
- Dave Atherholt TMI-1 Regulatory Assurance Manager
- Al Fulvio Manager, License Renewal
- Pat Bennett TMI-1 Engineering Manager
- Chris Wilson Licensing Lead

AGENDA

- Introductions Mike Gallagher
- Site Description Dave Atherholt
- ACRS Subcommittee Follow-up Item Al Fulvio
 - Operating Experience Review
- Gall Consistency and Commitments Al Fulvio
- Containment Pat Bennett
- Medium Voltage Cables Dave Atherholt
- Current Industry Issues Al Fulvio
 - SBO, Boral, Fatigue
- Questions? Mike Gallagher

SITE DESCRIPTION

TMI-1 is a Babcock and Wilcox (B&W) Pressurized Water Reactor located on Three Mile Island, which is situated in the Susquehanna River

➤ Commercial Ops	09/74
➤ TMI-2 Accident	03/79
➤ TMI-1 stays shutdown	03/79
➤ TMI-1 Restart	10/85
➤ 1.3 percent power uprate to 2568 MWt	07/88
➤ Sale of TMI-1 from GPU to AmerGen	12/99
➤ Turbine Rotor replacements	11/01
➤ Main and Aux Transformers replacement	11/01
➤ New Reactor Head	11/03
➤ LRA Submitted	01/08
➤ Transfer license from AmerGen to Exelon	01/09
➤ Scheduled installation of new S/Gs (1R18)	Fall 2009
➤ Two consecutive breaker to breaker runs	2001-2005
➤ Unit Capability Factor (2007 & 2008 average)	95.28%
➤ Current License Expires	04/19/14

ACRS SUBCOMMITTEE FOLLOW-UP ITEM: OPERATING EXPERIENCE REVIEW

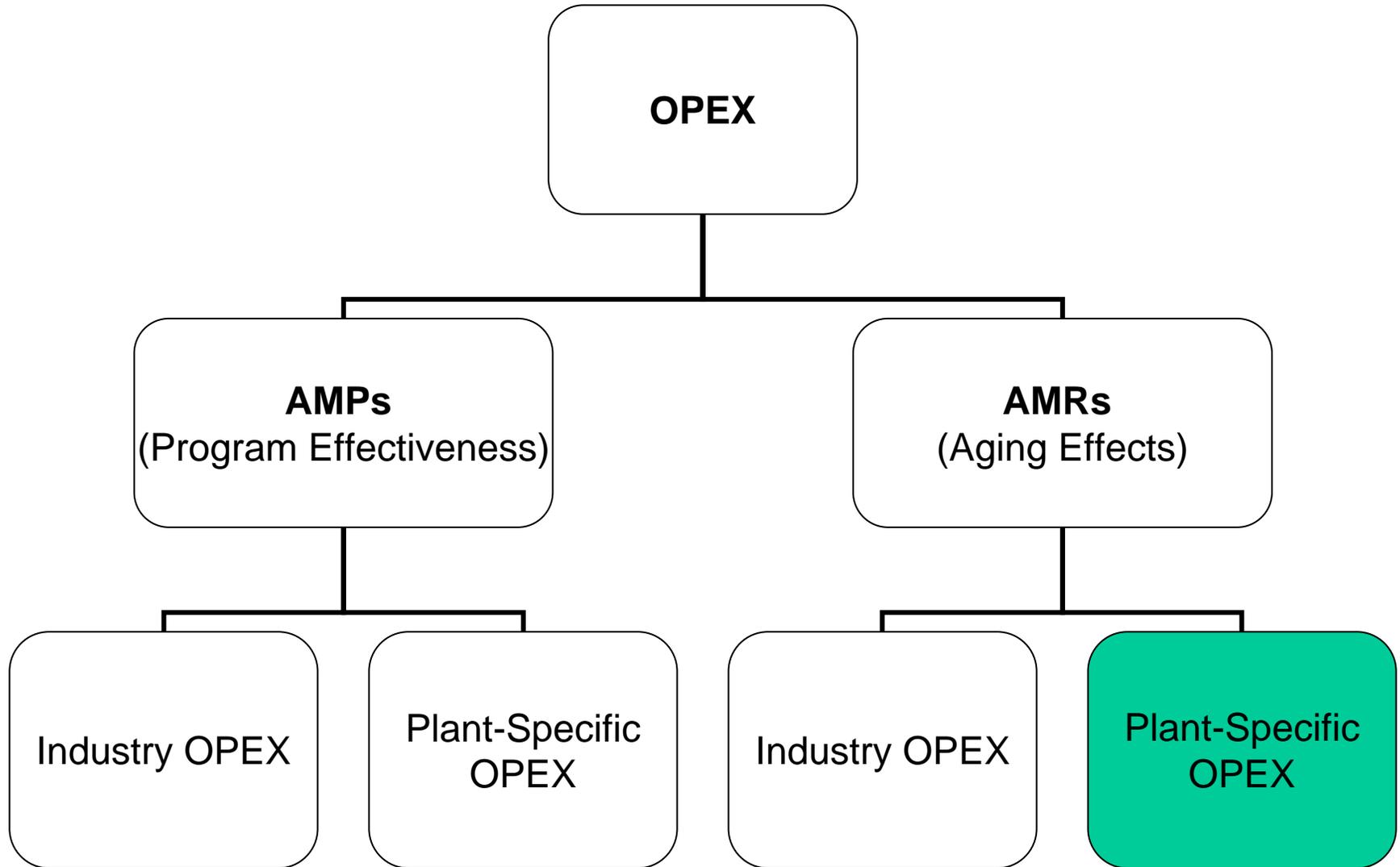
OPERATING EXPERIENCE REVIEW

Issue:

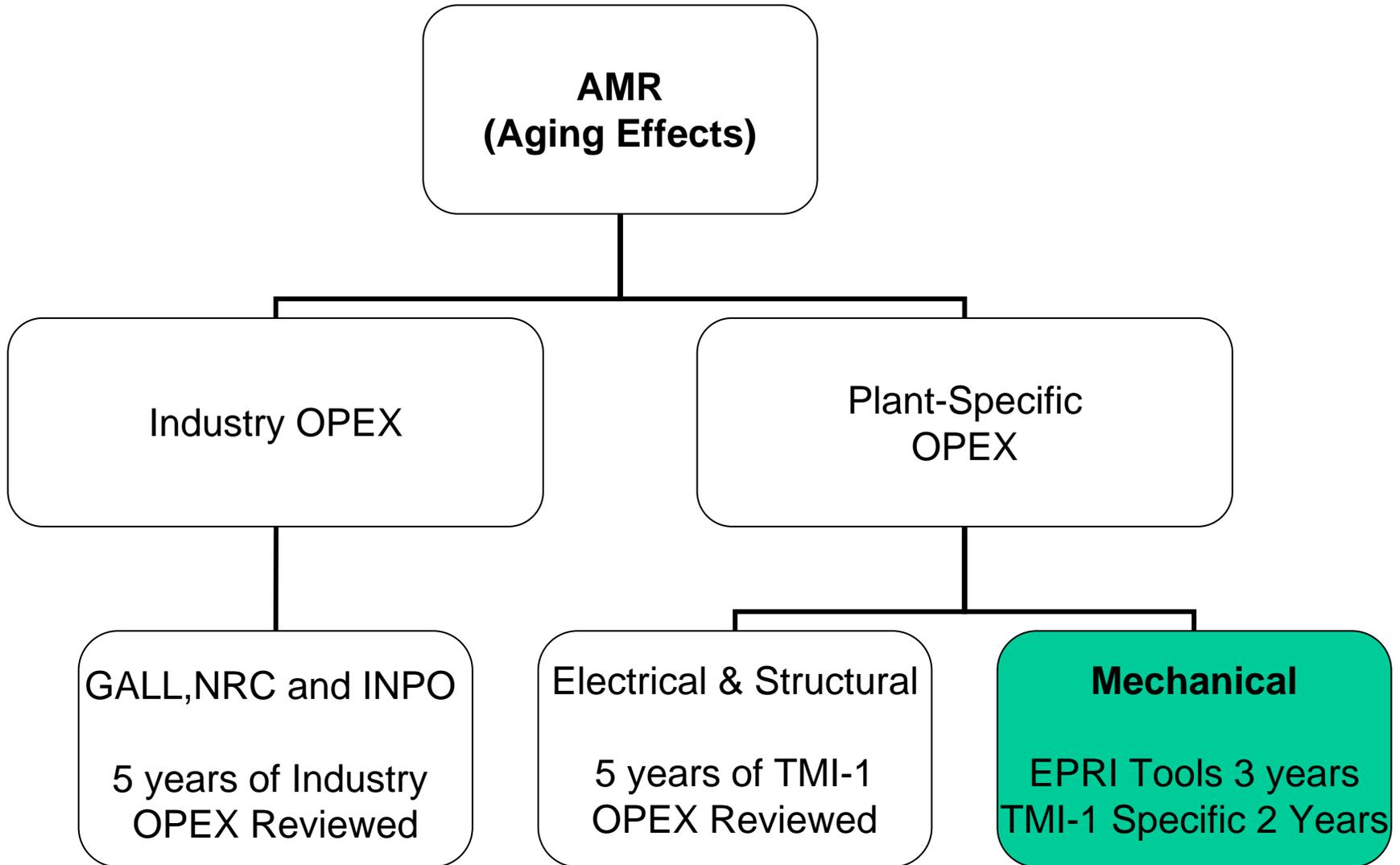
NEI 95-10 recommends a plant specific operating experience review for aging effects requiring management.

TMI-1 credited the EPRI Mechanical Tools for a part of the Mechanical Systems Operating Experience Review for aging effects requiring management.

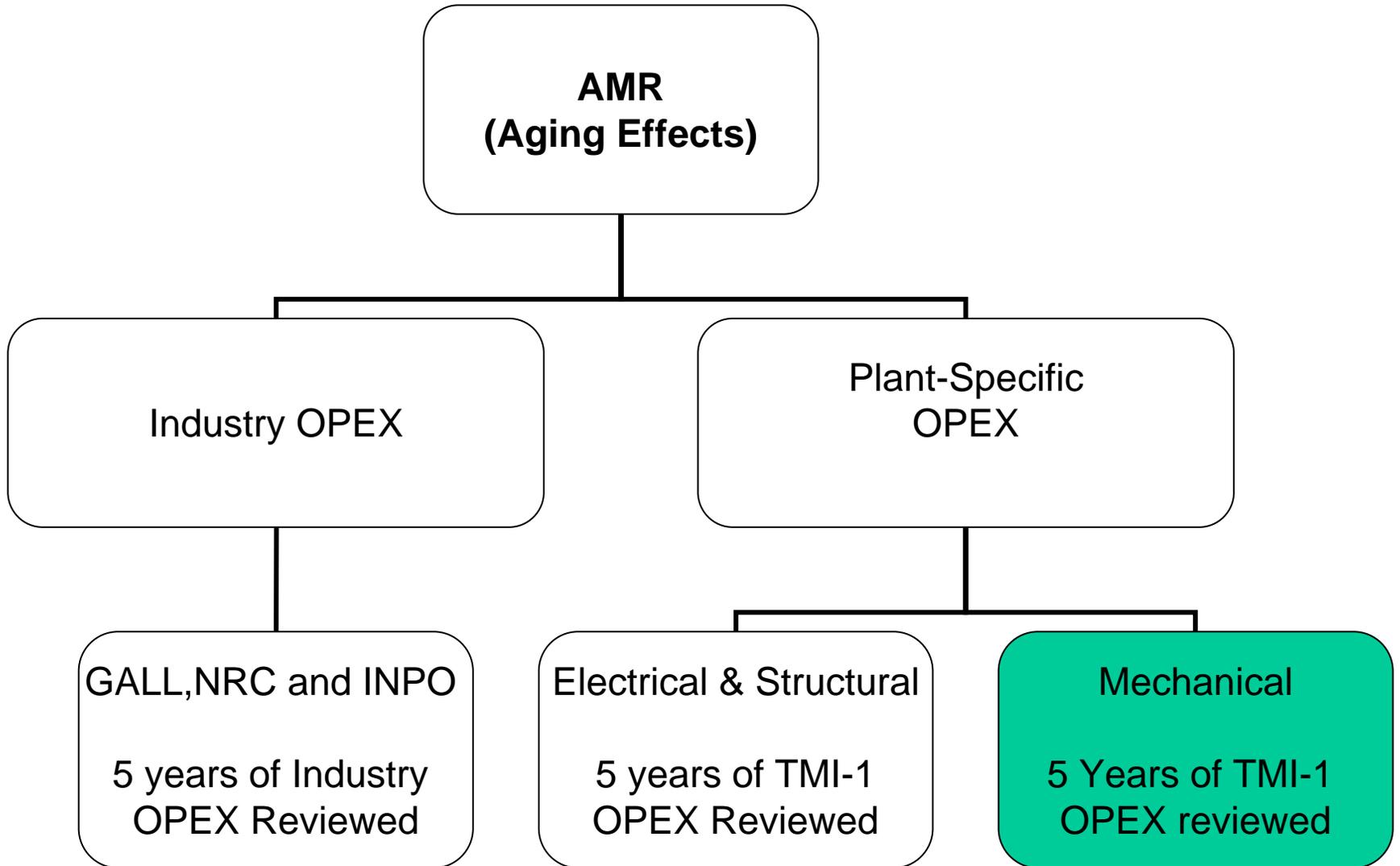
OPERATING EXPERIENCE REVIEW (OPEX)



OPEX REVIEW FOR LICENSE RENEWAL APPLICATION



OPEX REVIEW VALIDATION MAY 2009



OPEX REVIEW SUMMARY AND CONCLUSION

- EPRI Mechanical Tools were credited for 3 years of Operating Experience for plant specific aging effects requiring management.
- In order to validate the original review, a TMI-1 plant specific Operating Experience review was recently conducted for the 3 year period that the EPRI Mechanical Tools were credited
 - No new aging effects were identified
- Conclusion: The results of the Operating Experience review performed during the Application development were validated.

GALL CONSISTENCY AND COMMITMENTS

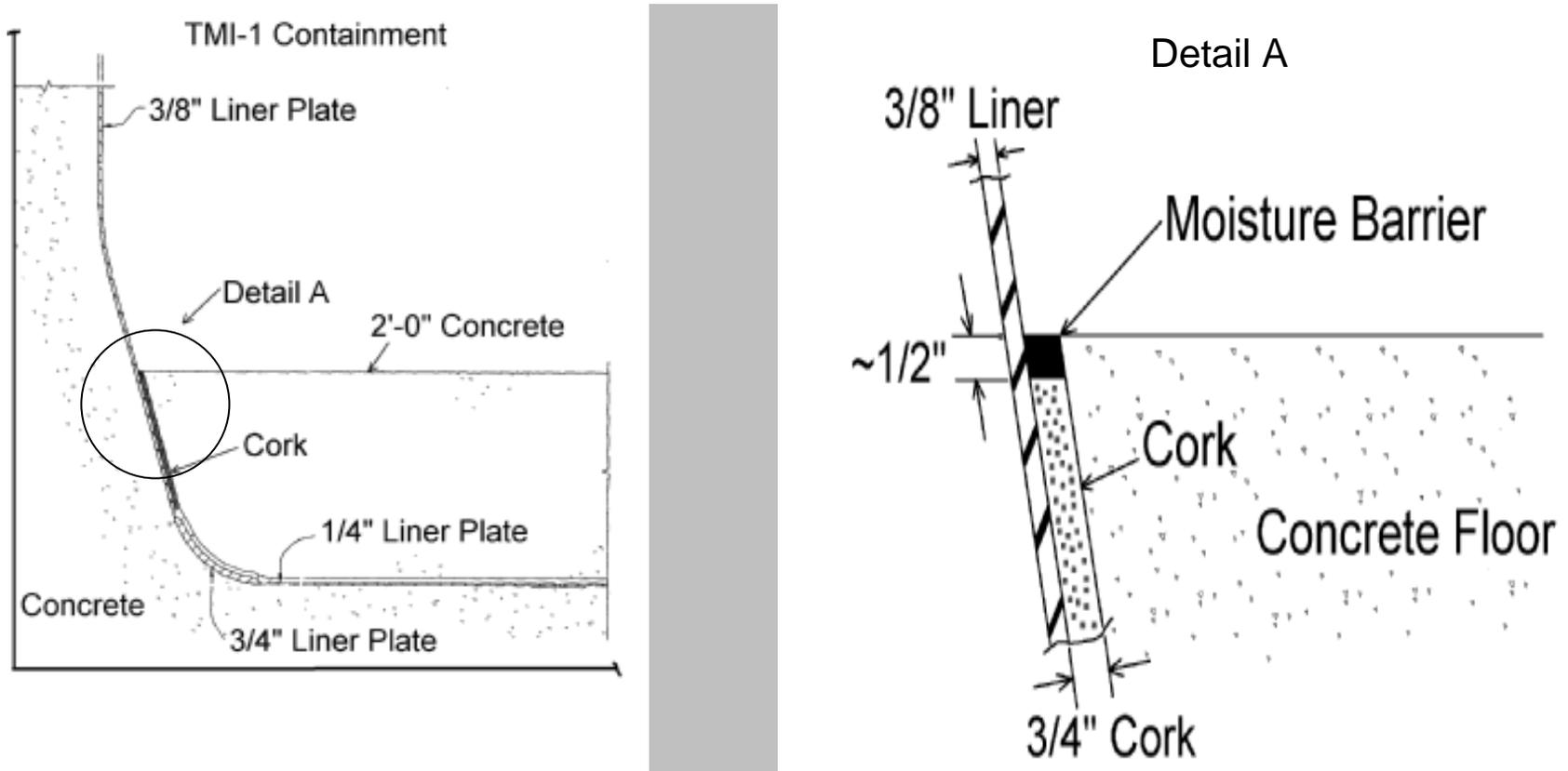
GALL CONSISTENCY AND COMMITMENTS

- Total Aging Management Programs – 38
 - Consistent with GALL – 24
 - Exceptions to GALL – 14
- Total of 43 License Renewal Commitments
 - 38 Aging Management Programs
 - PWR Vessel Internals
 - Install new Steam Generators prior to PEO
 - Submit new Pressure-Temperature limit curves to the NRC prior to exceeding 29 EFPY and prior to PEO
 - Weld repair the Reactor Building liner prior to the PEO
 - Boral Test Coupon Surveillance for the fuel storage racks will continue through the PEO

CONTAINMENT

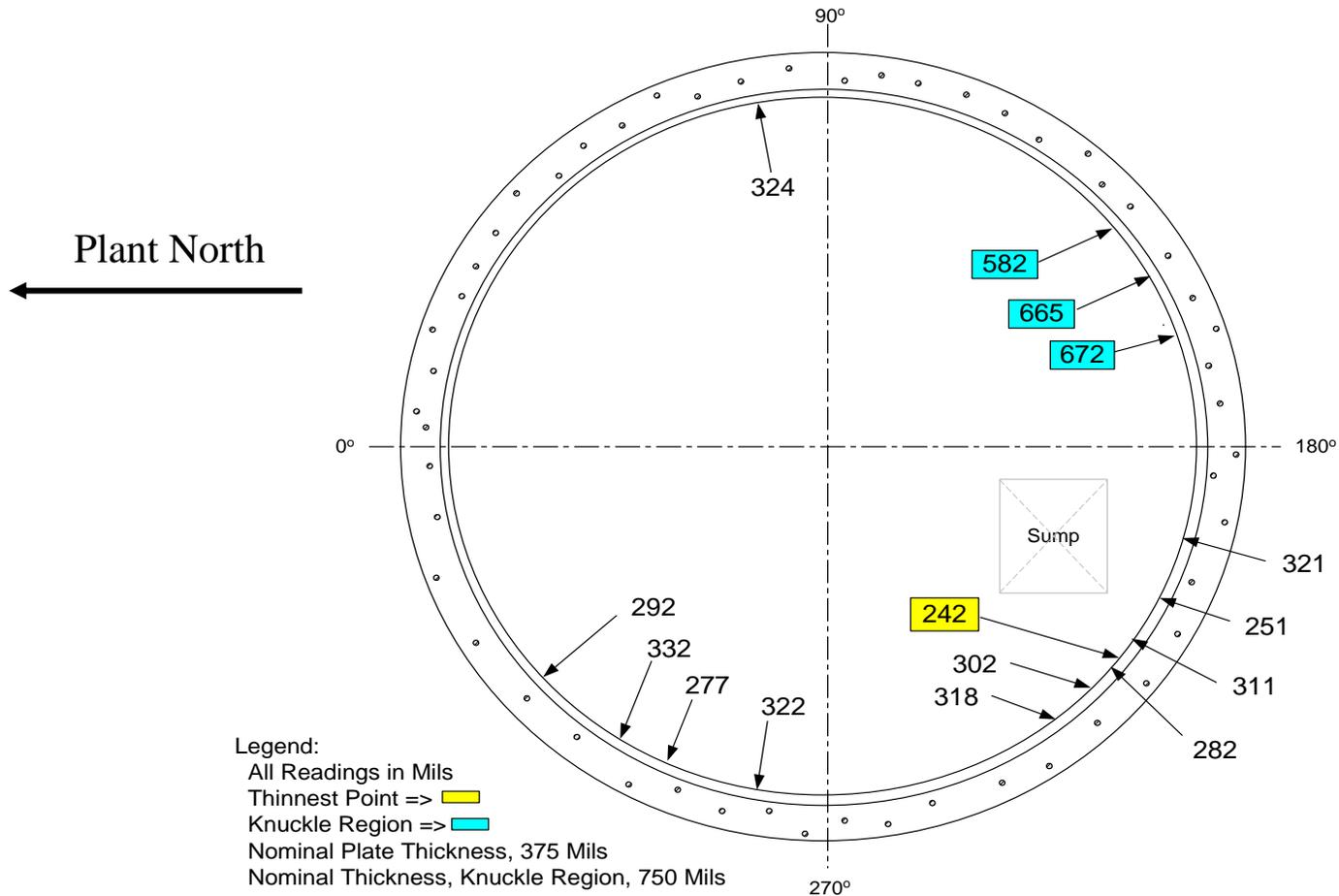
CONTAINMENT

ISSUE: Past leakage and a degraded moisture barrier resulted in corrosion behind and just above the moisture barrier.



Containment

Areas of Corrosion at Moisture Barrier to Liner interface



CONTAINMENT

- Identified
 - Corrosion identified in 1990s and monitored and inspected per IWE Program
- Cause
 - Borated water leakage and degraded moisture barrier
- Mitigation
 - Corrected leaks and established Boric Acid Corrosion Control program
 - Inspected entire perimeter in Fall 2007
 - Measured thickness of corroded areas. Liner meets design requirements.
 - Removed old moisture barrier in 2007, cleaned, re-coated, and installed new improved moisture barrier
 - Inspect 100% of the moisture barrier every Refueling outage starting 2009
- Repair Plan
 - Weld repair prior to PEO (scheduled Fall 2009 with the Integrated Leak Rate Test)

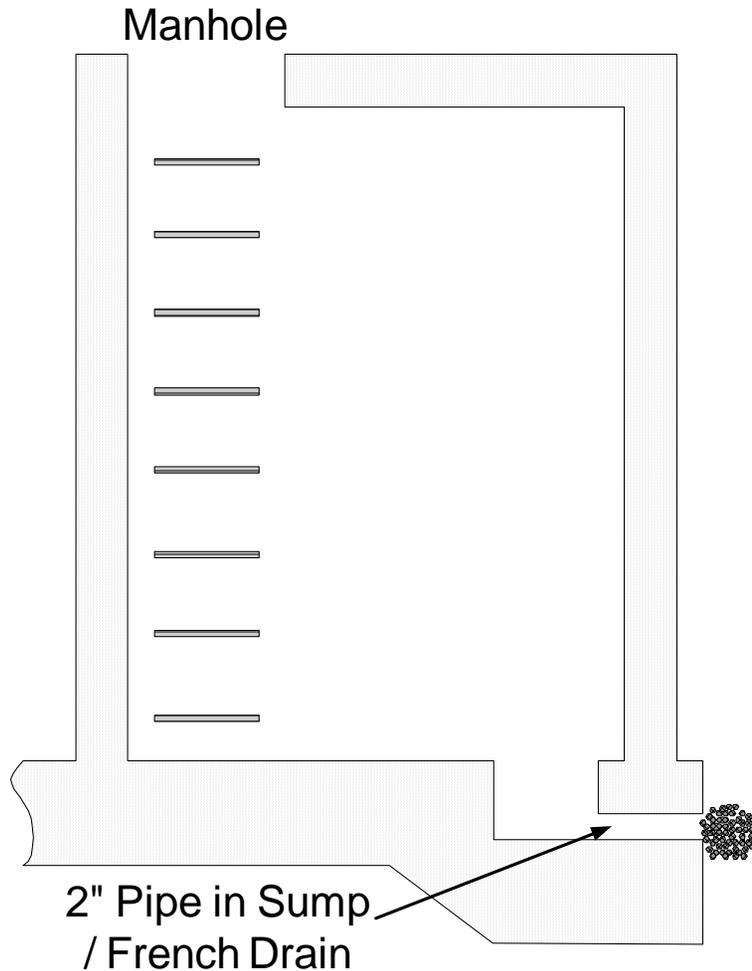
MEDIUM VOLTAGE CABLES

MEDIUM VOLTAGE CABLES

ISSUE

- Periodic TMI-1 cable vault inspection results identified some cable vaults with repeat occurrences of rainwater accumulation and cable submergence
- 37 total TMI-1 cable vaults
- 8 cable vaults in scope for License Renewal Inaccessible Medium Voltage Cable aging management program
- There have been no failures of Medium Voltage Cables at TMI-1

MEDIUM VOLTAGE CABLES



Typical Cable Vault

- Typical depth 8 to 15 feet
- Bottom of Cable Vault located 5 to 15 feet above water table
- Compartmentalized
- French drain
- Cables at varying elevations reflecting terrain & cable routes

MEDIUM VOLTAGE CABLES

ACTIONS

- Implement semi-annual inspection
- Implement cable vault improvement initiative, including:
 - Prevent rainwater intrusion
 - Install lid gaskets
 - Improve grading/surrounding environment to prevent run-off into vaults
 - Restore/maintain French drains & drains between vaults
- Adjust frequency of inspection based on inspection results following remediation
- Perform Cable Tests prior to PEO and every 10 years per GALL

CONCLUSION

- This new Program will keep the medium voltage cables dry or infrequently submerged to effectively manage aging.

CURRENT INDUSTRY ISSUES

CURRENT INDUSTRY ISSUES

- Station Blackout
 - TMI-1 LRA boundary for SBO recovery path includes the switchyard circuit breakers
- Boral
 - The TMI-1 Boral coupon surveillance program will continue throughout the period of extended operation
- Fatigue
 - Environmentally-Assisted Fatigue has been satisfactorily evaluated
 - No simplified analysis methods were used

QUESTIONS?



**Advisory Committee on Reactor Safeguards (ACRS)
Three Mile Island Nuclear Station, Unit - 1 (TMI-1)**

Safety Evaluation Report (SER)

September 10, 2009

Jay E. Robinson, Project Manager
Office of Nuclear Reactor Regulation

Introduction

- Review
- License Renewal Inspections/Operating Experience Review
- Section 2: Scoping and Screening Review
- Section 3: Aging Management Program and Review Results
- Section 4: Time-Limited Aging Analyses (TLAAs)
- Conclusion

Review

- Application Submitted January, 2008
- Staff Conducted Scoping Screening Audit, AMP Audit, and Regional Inspection
- Additional Components Brought into Scope
- 123 RAIs issued
- 43 Commitments
- SER with Open Items issued March, 2009
 - No Open Items (OIs)
 - One Confirmatory Item
 - Dissolved Oxygen

- **Operating Experience Review**
 - Applicant credited EPRI Tools in the mechanical system operating experience review for aging effects requiring management
 - Different from approach described in NEI 95-10
 - Applicant subsequently conducted a plant specific operating experience review for the period EPRI Tools were previously credited
 - No new aging effects were identified
 - Confirmed by staff during inspection on July 7th
 - Additional inspection report issued
 - SER to be updated accordingly

- **Inspection Conclusions**
 - Scoping of non-safety SSCs and aging management programs are acceptable
 - Inspection results support a conclusion of reasonable assurance that aging effects will be managed and intended functions will be maintained

Section 2: Structures and Components Subject to Aging Management Review

- Section 2.1 - Scoping and Screening Methodology
- Section 2.2 - Plant-Level Scoping Results
- Section 2.3 – Scoping and Screening Results: Mechanical Systems
- Section 2.4 – Scoping and Screening Results: Structures
- Section 2.5 – Scoping and Screening Results: Electrical Systems/Commodity Groups
- Section 2.6 – Conclusion for Scoping and Screening

Section 2: Structures and Components Subject to Aging Management Review

- **Section 2.3 – Scoping and Screening Results: Mechanical Systems**
 - The staff identified nine systems that required the applicant to revise their application to add additional components into scope
 - Examples of component types omitted included: Fuel tank for the standby diesel engine for the emergency diesel generator air start system air compressor, lube oil lines, and intake bar racks, which were subsequently added to scope and subject to an AMR
- **Section 2.4 – Scoping and Screening Results: Structures**
 - The staff identified one component that required the applicant to revise their application to add the component into scope

Section 2: Structures and Components Subject to Aging Management Review

- **Section 2.6 – Conclusion for Scoping and Screening**
 - Based on its review of the LRA, the onsite audit results, and additional information submitted as the result of RAIs, the staff concluded that:
 - The applicant’s scoping and screening methodology meets the requirements of 10 CFR 54.4 and 54.21(a)(1), and
 - The applicant adequately identified those SSCs within the scope of license renewal in accordance with 10 CFR 54.4(a), and adequately identified those SCs subject to an AMR in accordance with 10 CFR 54.21(a)(1)

Section 3: Aging Management Review Results

- Section 3.0 – Aging Management Programs
- Section 3.1 – Reactor Coolant System
- Section 3.2 – Engineered Safety Features
- Section 3.3 – Auxiliary Systems
- Section 3.4 – Steam and Power Conversion System
- Section 3.5 – Containments, Structures and Component Supports
- Section 3.6 – Electrical Commodity Group

- Section 3.0.3 – Aging Management Programs (AMPs)
 - 38 – AMPs
 - 7 New Programs
 - 31 Existing Programs
 - 21 consistent with GALL Report
 - 9 with enhancements
 - 1 plant specific
 - 11 with exceptions
 - 6 with both enhancements and exceptions

Section 3: Aging Management Review Results

- **Groundwater**
 - Non-aggressive for steel embedded in concrete
 - Sampling every 5 years during the period of extended operation
- **Reactor Building Liner**
 - Corrosion due to moisture intrusion through moisture barrier
 - Current function maintained through engineering evaluation
 - Applicant committed to restore liner to its nominal plate thickness by weld repair prior to PEO

- **Inaccessible Medium Voltage Cables**
 - Some inaccessible medium-voltage cables in some manholes experienced water submergence for more than a few days
 - Staff found cables submerged under water in two manholes during audit
 - Applicant will adjust frequency of inspections based on inspection results
 - Water in manholes is also a generic, current operating plant issue that is being addressed in accordance with the requirements of 10 CFR Part 50
- **Reduction of Neutron-Absorbing Capacity**
 - Water Chemistry Program & Boral Surveillance Program
 - Commitment to continue Boral test coupon surveillance through period of extended operation
- **Conclusion**

Section 4: Time-Limited Aging Analysis

- 4.1 Introduction
- 4.2 Neutron Embrittlement of the Reactor Vessel and Internals
- 4.3 Metal Fatigue of Piping and Components
- 4.4 Leak-Before-Break Analysis of Primary System Piping
- 4.5 Fuel Transfer Tube Bellows Design Cycles
- 4.6 Crane Load Cycle Limits
- 4.7 Loss of Prestress in Concrete Containment Tendons
- 4.8 Environmental Qualification of Electrical Equipment

- Section 4.3.2 – Evaluation of Reactor Water Environmental Effects on Fatigue Life of Piping and Components, GSI-190
 - Confirmatory Item 4.3.2-1
 - Fen values calculated based on assumed DO (dissolved oxygen) concentration data lower than 0.05 ppm
 - Staff questioned whether 0.05 ppm DO was bounding
 - Applicant indicated that 0.05 ppm was bounding since TMI-1 historically maintained its DO levels at less than 0.005 ppm, and administrative controls are in place to maintain it at or below this level
 - Applicant submitted additional information and confirmed DO history since plant began operation. Staff found the information acceptable, closed out item, and revised SER

- **Section 4.9 – Conclusion**
 - Based on its review of the LRA and additional information submitted as the result of RAIs, the staff concluded that the applicant provided an adequate list of TLAAs, per 10 CFR 54.3 and that the:
 - TLAAs will remain valid for the period of extended operation, per 10 CFR 54.21(c)(1)(i)
 - TLAAs have been projected to the end of the period of extended operation, per 10 CFR 54.21(c)(1)(ii)
 - Aging effects will be managed for the period of extended operation, per 10 CFR 54.21(c)(1)(iii)

Conclusion

- The staff has concluded there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB and that the requirements of 10 CFR 54.29(a) have been met.



Daniel Frumkin

Fire Protection Branch

Division of Risk Assessment

Office of Nuclear Reactor Regulation

DG-1214, Fire Protection for Nuclear Power Plants

ACRS

September 10, 2009

Topics

- Background
- Changes in Draft Guide
- Public comments
- Public comments not incorporated
 - Clearing of Hot Shorts within 20 Minutes for Components Important to Safe Shutdown
 - Appendix E of NEI 00-01 – Operator Manual Actions
 - Concurrent Hot Shorts in Separate Cables for Components Important to Safe Shutdown
- Path forward

Background (1)

- Proposed resolution to multiple spurious actuations in SECY 06-0196, "Issuance of Generic Letter 2006-xx, "Post-Fire Safe-Shutdown Circuits Analysis Spurious Actuations"
- SRM/SECY 06-0196:
 - "The present draft of the proposed Generic Letter does not contain the necessary specificity for a licensee to understand what process will be sufficient to meet the analysis needs and information demands of the draft Generic Letter"
 - "The staff should examine licensee analysis methods in this area, including those using system or functional scenario development approaches, and using the normal public regulatory process to enable stakeholder engagement, develop or endorse guidelines that provide a clearly defined method of compliance for licensees who do not choose to utilize the risk-informed approach contained in 10 CFR 50.48(c)." Emphasis Added

Background (2)

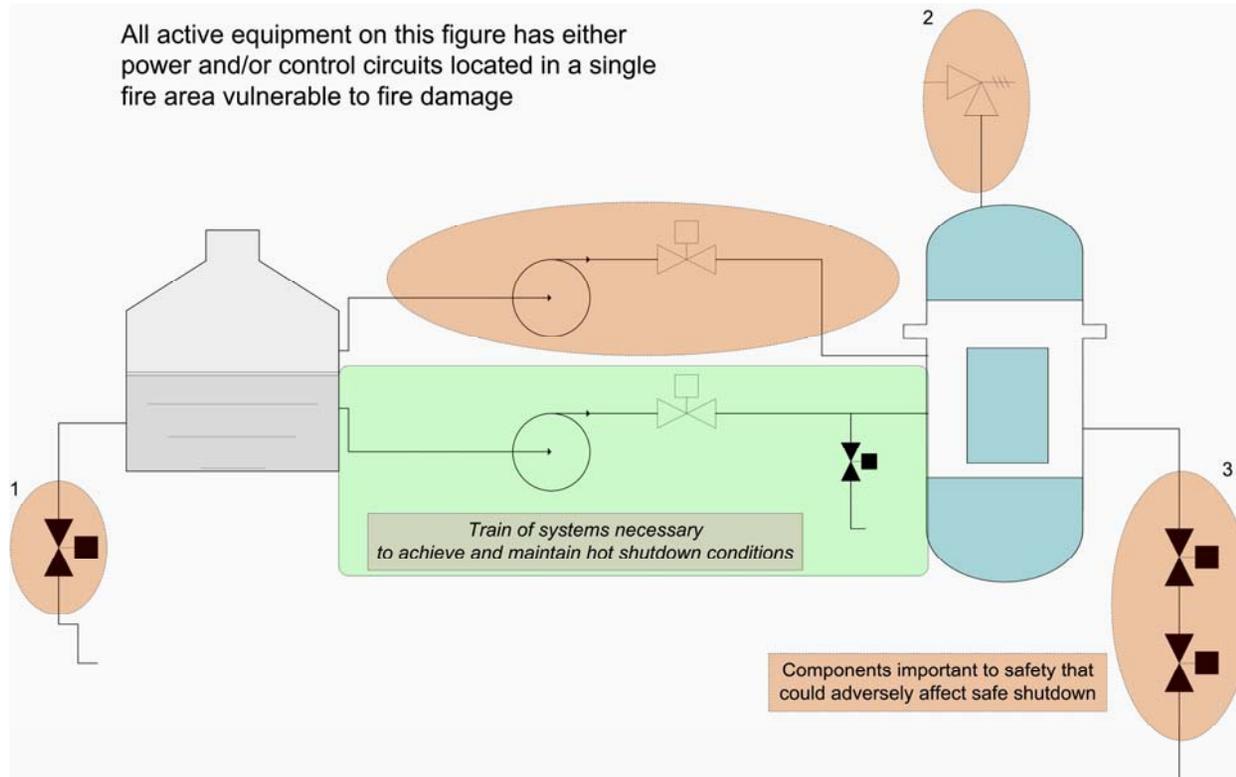
- Rule Language – 10 CFR 50, Appendix R, III.G.1
 - “where cables or equipment . . . of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area . . . , one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided: ”
 - 3 hour fire barrier
 - 20' and suppression and detection
 - 1 hour barrier and suppression and detection
- To summarize – only equipment necessary to achieve and maintain hot shutdown conditions is required to have III.G.2 protection provided

Background (3)

- Two categories of equipment were identified in SECY 08-0093:
 - Safe Shutdown Success Path
 - Also “Green Box” or “Components Required for Hot Shutdown”
 - Components Important to Safe Shutdown
 - Also “Orange Box”
- Although both require protection – only Safe Shutdown Success Path Components require Appendix R, III.G.2 protection

Background (4)

- SECY 08-0093, "Resolution of Issues Related to Fire-Induced Circuit Failures."



Changes in Draft Guide

- The NRC initiated changes relate to Regulatory Position C.5 of the Guide. These changes include discussions of:
 - Safe shutdown success path components and components important to safety
 - Use of manual actions and fire modeling for assessing components important to safe shutdown
 - Examples of the safe shutdown success path components and important to safe shutdown components

Public Comments (1)

- Three industry stakeholders provided comments
 - Nuclear Energy Institute, on behalf of their members (83 Comments)
 - Dominion (3 comments)
 - Florida Power and Light (11 comments)
- Industry stakeholders commented that NEI 00-01, Revision 2 should be reference in the guide – this comment was consistent with Commission direction and was done except as explained below

Public Comments (2)

Total Comments	97
Comments Incorporated	53
Comments Incorporated in Part	11
Comments Not Incorporated – Discussed on following pages	21
Duplicate Comments	9
Observations – with no recommended changes	3

Public Comments Not Incorporated

- The main reason for non-acceptance of comments were along these themes:
 - The guide does not supersede a plants approved fire protection program – so no change was needed
 - Guidance is located elsewhere in the guide
 - There are means available to deviate from the regulatory guide
- Specific comments are discussed on the following slides

Clearing of Hot Shorts within 20 Minutes for Components Important to Safe Shutdown

- Two hot shorts of the body of testing of direct current (DC) circuits in ~32 tests didn't clear. This is not sufficient in the staff's opinion to justify setting a deterministic limit for DC circuit hot shorts to clear in 20 minutes.
- NEI's September 8, 2009, proposal agrees with the NRC staff position that DC circuits can't be assumed to clear in 20 minutes.
- The NRC staff and industry positions are the same with respect to DC circuit faults clearing

Appendix E of NEI 00-01 – Operator Manual Actions

- NEI 00-01 Appendix E lacks a clear discussion on reliability of manual actions
- Discussion with industry stakeholders indicate that for some scenarios the Appendix E timeline may be non-conservative, but in other scenarios it may be appropriate.
- The NRC staff position is that Appendix E, is not sufficient to address all plant response scenarios
- Implementing guidance on manual actions isn't necessary to bring circuit failure issues to closure

Concurrent Hot Shorts in Separate Cables for Components Important to Safe Shutdown (1)

- NEI 00-01, Rev. 2 proposed that only one cable be considered to have hot shorts for non-latching, non-locking circuits, and that concurrent multiple faults in separate cables need not be considered
- NRC staff express concerns with proposal this during the ACRS Subcommittee meeting
- NEI proposed in their September 8, 2009 letter to assume two separate cables experience concurrent hot shorts for non-latching, non-locking circuits

Concurrent Hot Shorts in Separate Cables for Components Important to Safe Shutdown (2)

- NRC has considered NEI's September 8, 2009, letter, and the DRA staff position regarding concurrent faults in non-latching and non-locking circuits of equipment important to safe shutdown is:
 - Licensees should consider concurrent fire-induced circuit failures in two separate cables, where defense-in-depth features are present.
 - For high low pressure interfaces, licensees should consider concurrent fire-induced circuit failures in three cables, where defense-in-depth features are present.
 - For multi-conductor cables, all circuit faults that could occur within the cable should be assumed to occur.

Path Forward (1)

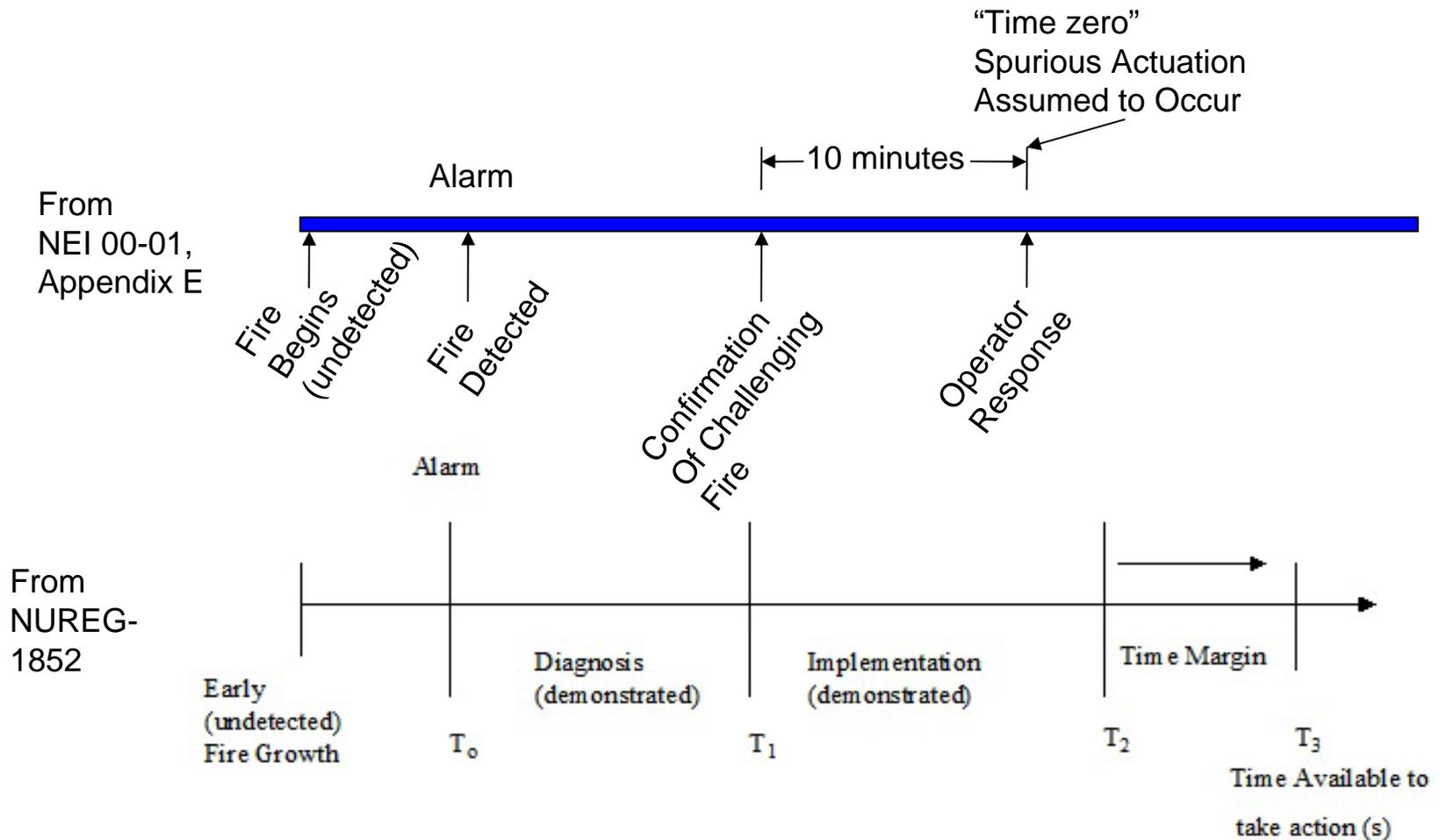
- The NRC staff view is that there is sufficient guidance or alternatives available for licensees to complete fire induced circuit analyses
- The NRC staff has come to resolution with industry stakeholders on two of the issues identified. As more test data is available, the NRC staff will consider that information.
- NRC staff will continue to work with industry regarding refining the implementing guidance for operator manual actions, but this refinement is not necessary to fulfill the Commissions direction regarding a clearly defined method of compliance

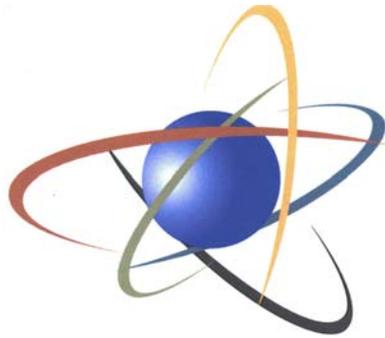
Path Forward (2)

- Issuance of the Final Regulatory Guide 1.189 is planned for the fourth quarter of 2009
- Issuance of R.G. 1.189, will start the “clock” on Enforcement Guidance Memorandum (EGM) 09-002:
 - Licensees will have six months to identify noncompliances
 - And an additional 30 months to resolve those noncompliances
- The NRC will revise its inspection manual to assure that licensees are appropriately implementing the clarification described in RG 1.189

BACKUP SLIDE

Appendix E of NEI 00-01 – NUREG-1852





U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

NRC DIGITAL SYSTEM RESEARCH PLAN FY 2010 THROUGH FY 2014

**Advisory Committee on Reactor Safeguards
September 10, 2009**

Russell Sydnor

Daniel Santos

Division of Engineering

Office of Nuclear Regulatory Research

(301-251-7405, russell.sydnor@nrc.gov)

(301-251-7664, daniel.santos@nrc.gov)

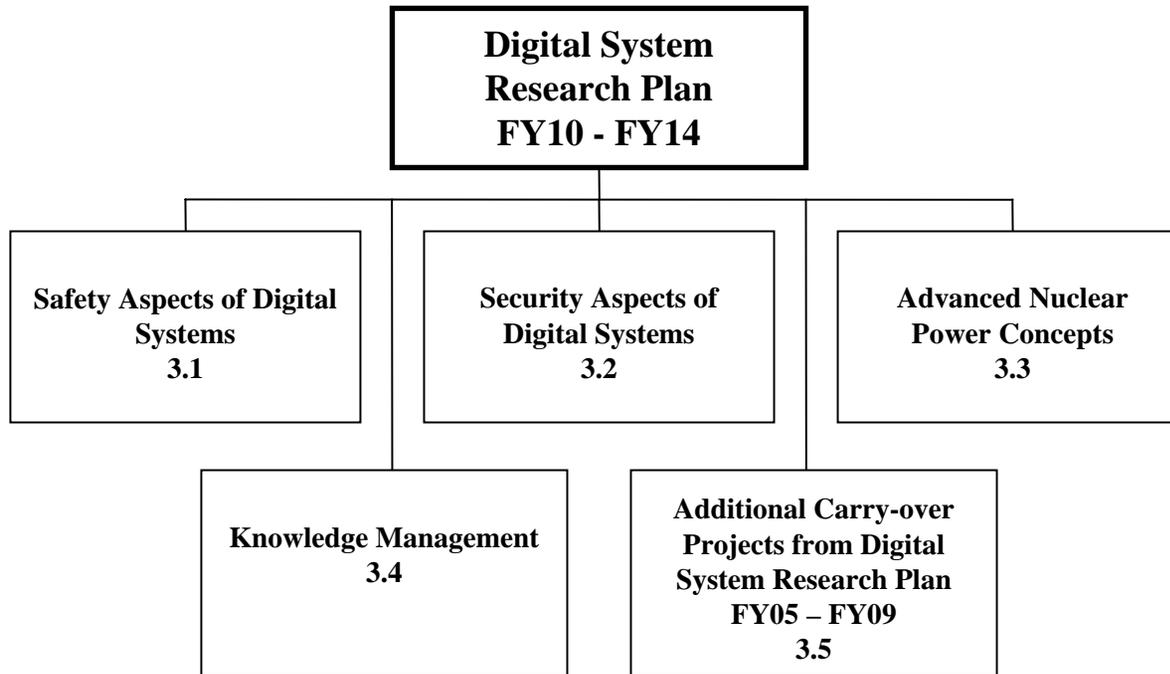
- **To obtain a letter of endorsement from the ACRS for the FY10-FY14 Digital System Research Plan**
- **To discuss and obtain insights from ACRS members on the strategic direction of Digital System regulatory research and improving the research plan**
- **Help answer the question: Are we missing something?**

- **Status as of 8/09: 7 research programs made up of 29 research projects and tasks**
 - In 21 of 29 areas - significant research progress
- **FY05 – FY09 Projects that were not started and not selected for FY10 – FY14 scope**
 - COTS Digital Systems
 - THD effects on DI&C
 - Radiation Hardened ICs
 - Smart Transmitters
 - Advanced NPP Digital Risk

- **Collaborative efforts with supported Offices (NRR, NRO, NMSS, NSIR)**
- **Comments, needs, and priorities of the various offices have been incorporated. Comments included**
 - **Include NRC training courses as an optional task for each research project statement of work**
 - **Avoid duplicate efforts, leverage information readily available in the public literature, and encourage industry to take the lead on research topics more applicable to industry (e.g., sustainability and obsolescence management)**

- **Comments included, cont.**
 - **Continue digital I&C PRA work**
 - **Evaluate the capabilities and limitations of automated tools used in various life-cycle activities**
 - **Improve understanding of digital technology failure modes and effects and their analyzes**
 - **Provide specific deliverables**
 - **Staff guidance, acceptance criteria, tools and methods, review procedures, training curricula**

Research Programs



- **Communications Among Plant-wide systems**
 - In-house effort to develop a generic abstract model of plant-wide digital systems
 - Gain a better understanding of network-based challenges to reliability, redundancy, and independence among systems
- **Safety Assessment of Tool Automated Processes**
 - Develop acceptance criteria regarding the use of tool-assisted or tool-automated engineering activities
 - Effort will leverage existing guidance from other industries

- **Development of Benchmark Reliability Data**
 - Ongoing research implementing UVA fault injection method
 - Develop a testing method to potentially complement regulatory reviews
 - De-emphasizing the estimation of digital system reliability for use in PRA models
- **Diagnostics and Prognostics**
 - Assess the safety impact of these systems and techniques and their impact on equipment operability

- **Integrated Plant & DI&C System Modeling**
 - Develop a simulation-based model of DI&C systems coupled to other plant models and tools
 - Assist reviewers in the validation and characterization of DI&C on reactor safety
- **Digital System PRA**
 - Development of PRA methods, tools, and guidance, if practical, to support:
 - Nuclear plant licensing decisions using information on the risks of digital systems
 - Including models of digital systems into nuclear plant PRAs

- **Analytical Assessment of DI&C Systems**
 - **Develop an inventory, classification, and characterization of DI&C systems for use in nuclear safety applications**
 - **Identification of credible systematic failure and fault modes typical of software-intensive DI&C systems**
 - **Initial focus is an analysis of 3 pre-approved platforms in highly integrated environment**
 - **Gain a better understanding of DI&C failure modes and of the feasibility of applying failure analysis in risk quantification**

- **Security of Digital Platforms**
 - Ongoing project by Sandia National Laboratories
 - Conducting cyber-vulnerability assessments on NRC approved digital platforms
 - Investigate the appropriate elimination and mitigation of potential security hazards

- **Network Security**
 - Ongoing projects by Sandia and Oak Ridge National Labs
 - Develop regulatory guidance discussing wireless and wired network security vulnerabilities and mitigation strategies

- **Security Assessments of EM/RF Vulnerabilities**
 - Ongoing project by Sandia National Laboratories
 - Studies in the early '80s
 - The Commission has not specifically identified EM/RF emitting weapons as a credible threat to nuclear stations, however, some limited anticipatory research is considered prudent
 - Support a new regulatory position on EM and RF
 - Recommendations for potential mitigations, as appropriate

- **Advanced Instrumentation**
 - Anticipatory research to analyze the requirements and potential safety issues involved with instrumentation of advanced reactors
 - Different transducers may require different approaches for accuracy assessments and compensation methods

- **Advanced Controls**
 - Anticipatory and exploratory research for increased use of automation, integration, and advanced control algorithms in safety systems

- **Survey of Emerging Technologies**
 - Ongoing and periodic series of reports on emerging capabilities that have potential applicability for safety systems
- **Collaborative and Cooperative Research**
 - Other Federal agencies (e.g., NITRD program)
 - EPRI MOU
 - International collaboration (e.g., COMPSIS database, Halden)

- **Standards Development, Regulatory Guidance, and Review Guidance**
 - Ongoing effort to understand, evaluate, and participate in national and international standards
 - Work will leverage on-going efforts such as the MDEP program and IAEA working groups
- **Organization of Regulatory Guidance Knowledge**
 - Large number of NRC documents and industry standards
 - Develop aids and tools to improve regulatory reviews

- **Operating Experience Analysis**
 - **Continue efforts to evaluate the OpE with digital systems in the nuclear industry and other industries to gain insights regarding potential failure modes**
 - **Data from operational experience obtained and analyzed to date have been found to be inadequate and not statistically significant**
 - **In the short term, document insights gained from OpE data reviews. In the longer term, develop a digital component failure parameter database to support PRA research**

- **Electromagnetic Compatibility**
 - Industry claims that certain test limits are overly conservative
 - Interact with EPRI via the MOU and update the guidance in Reg Guide 1.180, if necessary
- **Operating Systems**
 - Evaluation criteria for operating systems likely to be used in NPPs
 - Will leverage existing research from other sectors

- **Electrical Power Distribution System Interactions with Nuclear Facilities**
 - Project stems from the 2003 power blackout in the northeast
 - Need to address degraded power grid effects and power fluctuations (e.g., overvoltage spikes) on digital components
 - Dependencies on power supplies across distributed networks are not well understood

- **The draft plan was made publicly available on July 29th, 2009 and is on NRC's ADAMS under accession number ML082470725**
- **As of September 2, 2009, the staff had not received any public comments**
- **Public and stakeholder commenting period until September 20th, 2009**
- **Plan is to go into formal NRC concurrence (office director concurrence) following incorporation and resolution of all ACRS and public comments**

Schedule, cont

- **The staff aims to have the research plan published by the end of calendar year 2009**
- **Working under a MOU between EPRI and RES, the parties intend to use the research plan to help identify areas for potential collaborative research**

Summary

- **The staff requests that the ACRS endorse the plan and continue to provide inputs on how to improve the research plan**
- **RES is looking forward to working closely with the ACRS as the research is implemented**

- **ACRS – Advisory Committee on Reactor Safeguards**
- **COTS – Commercial Off-The-Shelf**
- **DI&C – Digital Instrumentation and Controls**
- **EM- Electromagnetic**
- **EM/RF – Electromagnetic/Radio Frequency**
- **EPRI – Electric Power Research Institute**
- **FPGA – Field Programmable Gate Array**
- **FY – Fiscal Year**
- **HF- Human Factors**
- **I&C – Instrumentation and Controls**
- **IAEA – International Atomic Energy Agency**
- **MDEP - Multinational Design Evaluation Programme**
- **MOU – Memorandum of Understanding**

- **NITRD - Networking and Information Technology Research and Development**
- **NMSS – Office of Nuclear Material Safety and Safeguards**
- **NRC- Nuclear Regulatory Commission**
- **NRO – Office of New Reactors**
- **NRR- Office of Reactor Regulation**
- **NSIR – Office of Nuclear Security and Incident Response**
- **OpE – Operational Experience**
- **PRA - Probabilistic risk assessment**
- **R&D – Research and Development**
- **THD – Total Harmonic Distortion**
- **UVA - University of Virginia**

BEAVER VALLEY POWER STATION

License Renewal Application



**FENOC
Presentation to
ACRS**

September 11, 2009

Introductions

- Pete Sena, Site Vice-President
- Mark Manoleras, Site Engineering Director
- Cliff Custer, License Renewal Project Manager
- David Grabski, ISI Program Owner
- Site Subject Matter Experts and members of the LRA core team

AGENDA

- BVPS Containment Liner History
- Safety Significance
- Examination Plan
- Conclusion

BVPS Containment Liner History

- 2006 BVPS-1
 - Degradation of concrete side of liner
 - 3 areas of general pitting corrosion
 - 2/3 areas replaced; 3rd area evaluated and monitoring continues
 - Hydro-demolition destroyed definitive evidence of corrosion source

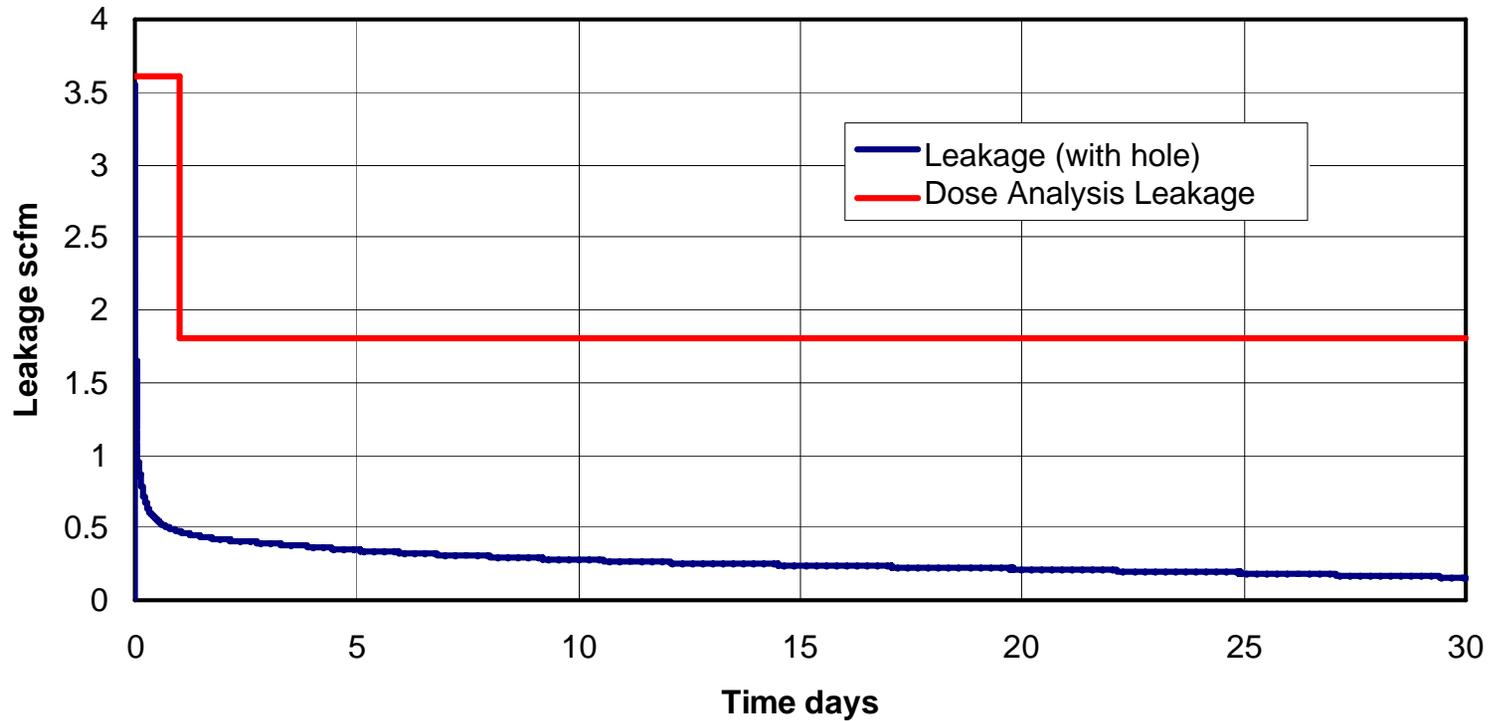
BVPS Containment Liner History

- 2009 BVPS-1
 - One indication noted by IWE visual inspection as an intact paint blister
 - By procedure, required further VT-3 visual examination; which led to volumetric evaluation (UT)
 - Identified 1"X 3/8" thru liner defect
 - Repaired defect and performed baseline volumetric evaluation (UT)

Assessment of Safety Significance

- Assessment of BVPS-1 shows allowable leakage (L_a) was not exceeded with identified defect; therefore current Dose Analyses remain bounding
- Significant margin exists between actual post DBA leakage and Dose Analysis assumptions due to containment pressure transient
- Margin also exists between Dose Analysis results and regulatory limits
- If a liner defect exists, leakage is limited by concrete
- Safety significance of liner defect is low due to effect of concrete limiting release and conservative assumptions in dose analyses.

Containment Leakage vs. Dose Analysis Assumptions



Examination Plan

- IWE Visual Inspections
- Non-random Examinations
- Random Sample Examinations

IWE Visual Inspections

- Establish condition of the interior liner surface at time of inspection
- Additional IWE visual inspections at BV-1 and BV-2 as defined by ASME code

Non-random Examinations

- Volumetric examination (UT) of liner
- Minimum of 8 locations at each unit.
- Site specific/Industry OE used to identify areas
- BV-1 Five areas; BV-2 three areas
- BV-1 to commence on-line, within the current fuel cycle and completed by December 31, 2010

Non-random Examinations

- **BV-1 Areas**
 - Repainted more than once
 - Irregular contour
 - 5 feet below the 2006 construction opening
 - At final site grade level
 - Adjacent to 2009 location
- **BV-2 Areas**
 - Repainted more than once
 - Irregular contour
 - At final site grade level

Random Sample Examinations

- Minimum of 75 random sample locations
- 1' X1' sample area of UT accessible liner surface
- Statistical sample failure defined as: >10% material loss due to active pitting corrosion not attributed to fabrication/erection practices.
- Sample plan designed to provide 95% confidence that 95% of the unexamined area are similar

Examination Plan Summary

BVPS Unit 1

- IWE Visual Inspection Schedule
 - 2010 Refueling Outage (Additional)
 - 2012 Refueling Outage (Normal Schedule)
- Non-Random Examination Schedule
 - Begin in Current fuel cycle
 - All exams completed by December 31, 2010
- Random Sample Examination Schedule
 - Initial sample consisting of a minimum of 75
 - Initial sample complete by the end of the next 3 refueling outages
 - Evaluate a statistical method to analyze the data to gain additional insight for the general liner condition
 - Document summary of examination plan results
 - Entire random sample plan to be completed prior to PEO

Examination Plan Summary

BVPS Unit 2

- IWE Visual Inspection Schedule
 - 2009 Refueling Outage (Additional)
 - 2011 Refueling Outage (Normal Schedule)
- Non-Random Examination Schedule
 - Complete prior to PEO
- Random Sample Examination Schedule
 - Sample consisting of a minimum of 75
 - Commence by end of refueling outage in 2011
 - Evaluate a statistical method to analyze the data to gain additional insight for the general liner condition
 - Document summary of inspection plan results
 - Random sample plan to complete prior to PEO

Conclusions

- Examinations completed prior to PEO and results available for NRC 71003 Inspection
- Liner thru wall defect is consistent with other industry limited OE
- Examination Plan incorporates recent OE
- Examination Plan provides reasonable assurance of liner condition prior to the PEO
- Results of Examination Plan will be shared with the industry.



U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Advisory Committee on Reactor Safeguards (ACRS) License Renewal Full Committee

Beaver Valley Power Station, Units 1 and 2 Safety Evaluation Report

September 11, 2009

Kent Howard, Project Manager

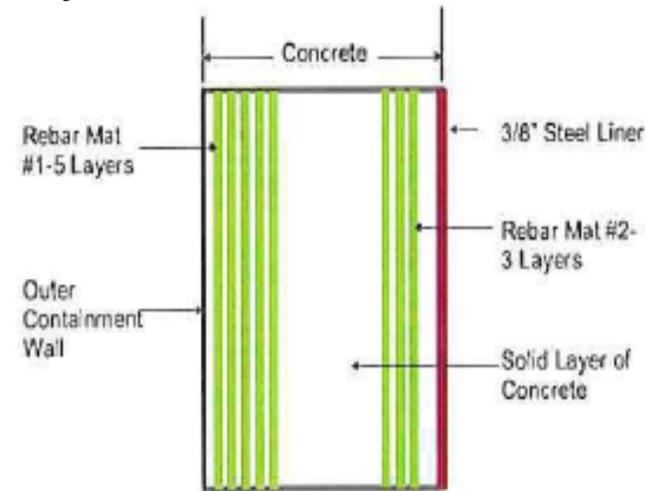
Hansraj G. Ashar, Technical Reviewer

Abdul H. Sheikh, Technical Reviewer

Office of Nuclear Reactor Regulation

Beaver Valley Units 1 and 2 Containments

- Steel lined reinforced concrete containment
- Diameter: 126 feet
- Concrete shell: 54 inches thick with 8 layers of rebars
- Liner plate
 - 3/8 inch thick
 - Continuous leak tight membrane
 - Anchored to the concrete shell
 - Not designed as a structural component
- Containment originally designed as sub-atmospheric (5.8 psig)
- Converted to atmospheric containment in 2006



Unit 1 Liner Plate Degradation

- Unit 1 steam generator replacement outage in 2006
 - Corrosion degradation of liner found at 3 areas
 - Two areas replaced
 - One area with minimal loss left in place
 - One area being monitored
- Unit 1 ASME XI IWE inspection in April 2009
 - Paint blister discovered
 - Further investigation revealed a 3/8" by 1" hole in the liner plate
 - 2"x 4"X 6" piece of wood trapped behind the liner plate
 - Non-structural spacer rebar also located behind the hole
- Laboratory Analysis of Wood
 - pH: 3.7- aggressive to carbon steel
 - Moisture content: 13%

Industry Operating Experience

- Brunswick Unit 2 - May 1999
 - BWR atmospheric containment
 - 3 holes
 - Leather glove behind one hole
 - Pieces of wood behind two holes
- North Anna Unit 2 – October 1999
 - PWR sub-atmospheric containment
 - ¼ inch diameter hole
 - Piece of 4"x4"X6' wood behind the liner
- DC Cook Unit 2 –November 1999
 - PWR atmospheric containment
 - 3/16 inch diameter hole
 - Wire brush with wooden handle behind liner

Degradation Root Cause

- Industry Operating Experience
 - Construction imperfections and foreign objects root cause of through wall corrosion of containment liner at North Anna 2, DC Cook 2, and Brunswick Unit 2 plants.
- Beaver Valley Applicant's Finding
 - Piece of wood in contact with liner plate
 - Oxygen replenished thru concrete
 - Low pH of wood in contact with liner plate for 37 years root cause of corrosion.
- Staff Assessment
 - Wood with low pH, 13% moisture content, and intermittent supply of oxygen can cause localized pitting and corrosion
 - Occurrence of through wall corrosion is likely due to foreign object (wood) trapped in the concrete against the liner
 - Additional visual and volumetric examinations planned by the applicant will provide additional insight regarding potential corrosion mechanism in the liner

Beaver Valley Commitments

- **Commitments**

- Volumetric (UT) examination

- Minimum of 75 locations selected randomly for each Unit 1 and 2
 - Minimum of 8 non-random locations selected based on operating experience
 - Use of appropriate/applicable statistical methods to determine general state of the liner

- Visual Examination

- 100% of accessible area during the next scheduled outages

- **Staff Assessment**

- Random sample size conform with NUREG 1475 and EPRI guidance for 95/95 confidence

- Increase in sample size in case degradation is detected

- Non-random locations will be selected based on the applicant's site specific experience

- Visual examination will supplement UT examination

UT Examination Criteria

- More than 10% loss of liner thickness on concrete side of the liner
 - Perform engineering evaluation for statistical failure
 - If statistical failure, enter into corrective action program
 - Increase sample size to demonstrate 95/95 percent confidence
 - Reexamination during the subsequent refueling outages
- Less than 10% loss in liner thickness on concrete side of the liner
 - Perform engineering evaluation
 - Enter into corrective action program
 - Reexamination during the subsequent refueling outages

Liner Examination Schedule

Unit 1

- October 2010: 100% visual examination
- December 2010: On-line UT of non-random samples
- April 2012: Scheduled IWE examination
- January 2016: Complete UT of randomly selected samples during next three refueling outages starting in October 2010

Unit 2

- October 2009: 100% visual examination
- April 2011: Scheduled IWE examination
- May 2027: Complete UT of random and non-random samples

- Applicant will provide a summary of the UT testing results as docketed information to the NRC after each outage

Generic Implications

- Staff evaluating the need for issuing a supplement to Information Notice (IN) 2004-09 to holders of operating licenses or construction permits to review the Beaver Valley Unit 1 operating experience for applicability to their facilities and consider actions, as appropriate.
- NRC's Office of Nuclear Reactor Regulation to submit a User need to NRC's Office of Research to investigate the corrosion mechanism.
- A new agenda item was included by NRC and other industry members in the last ASME Subsection IWE meeting to identify early detection methods for liner plate degradation/corrosion.
- Changes are being made to the NRC's Refueling and Outage Activities Baseline Inspection Procedure to provide additional guidance to inspectors concerning containment walkdowns.

Conclusion

- On the basis of its review, the staff determines that the requirements of 10 CFR 54.29(a) have been met.
- The Beaver Valley Units 1 and 2 containment liner plate will comply with the current licensing basis during period of extended operation.

Containment Leakage

Applicant's Assessment

- North Anna Unit 2 and Beaver Valley Unit 1 containment design similar.
- Liner plate hole diameter:
 - North Anna Unit 2: 0.25 inch diameter
 - Beaver Valley Unit 1: 0.69 inch (equivalent diameter)
- Local leak rate test at North Anna 2 hole: 21 SCFH @45 psi
- ILRT performed previously at North Anna Unit 2 with 0.25 inch diameter hole. Leakage within technical specification requirements (<0.1% leakage/day)
- Leakage rate from North Anna Unit 2 extrapolated for Beaver Valley Unit 1.
- Beaver Valley Unit 1 leakage rate within plant technical specifications requirements (<0.1% leakage/day)

Staff Assessment of Leakage

10 CFR Part 100/50.67 Compliance

- Applicant's extrapolated leakage for Beaver Valley Unit 1 from North Anna Unit 2 is acceptable because:
 - Leakage limit of 0.10 percent per day is for the containment system
 - Beaver Valley 1 and North Anna 2 plants have identical configuration and design
 - 54 inch thick concrete is a part of the containment system and provides significant resistance to leakage
 - Total leakage thru the hole when added to the previous leakage determined during ILRT in 2006 less than 0.10 percent per day.
 - Local leak rate test at the hole could have buckled the liner and adversely affected the integrity of the containment.
- Beaver Valley Unit 1 remained in compliance with current licensing basis with 0.69 inch equivalent diameter hole in the liner.

Staff Assessment of Leakage

ECCS NPSH

- No significant effect

Large Early Release Frequency (LERF) Assessment

- NUREG-1765 Guidelines for LERF
 - Leakage Volume: 100% of containment volume per day screening criteria
 - Hole size for Large Dry containments: 2.5-3.0 inch with unobstructive flow thru the liner/steel