PWR Owners Group



Executive Committee/NRC Meeting March 8, 2010 Bethesda North Marriott, Rockville, MD

PWR Owners Group March 2010 Executive Committee/NRC Meeting Agenda

1:45 **Introductions and Opening Remarks**

1:50 **PWR Owners Group Report**

- PWROG Organization
- Review Actions from Previous Year
- Licensing and Topical Report Status
- PWROG Key Regulatory Issues

2:45 BREAK

3:00	NRC Topics for Discussion	Jack Grobe
4:00	Open Discussion	All
4:40	Future Meeting Dates	Amir Shahkarami
4:45	Review of Action Items/Closing Remarks	Chad Holderbaum, WEC
		Jonathan Rowley, NRC

5:00 Adjourn

Slide 2

Amir Shahkarami, Exelon

Jack Grobe, NRC

Ken Schrader, PG&E

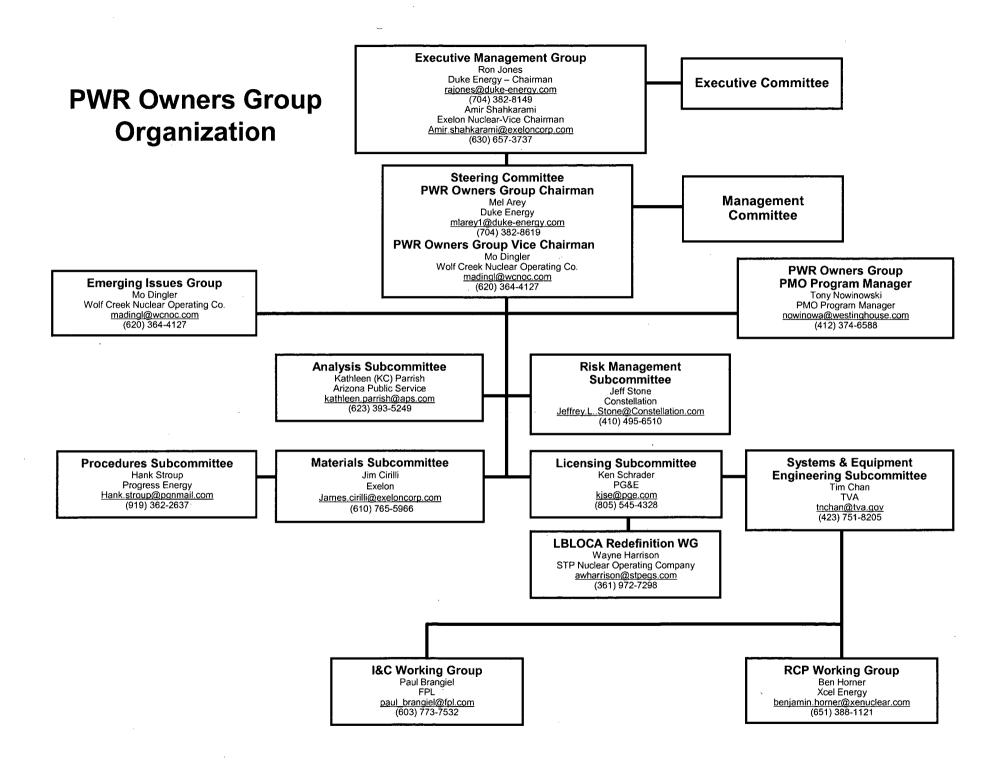
Mel Arey, Duke

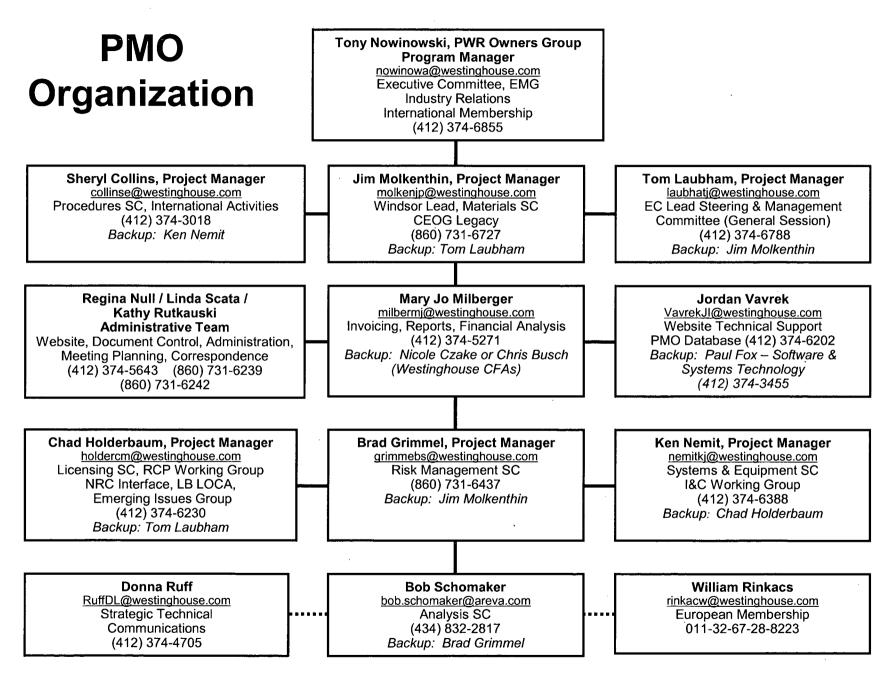
PWR Owners Group March 2010 Executive Committee/NRC Meeting **PWROG Officers**

- PWROG Officers
 - Amir Shahkarami (Exelon)
 - Randy Edington (APS)
 - Mel Arey (Duke)
 - Mo Dingler (WCNOC)
- Subcommittee Chairmen
 - Kathleen Parrish (APS)
 - Ken Schrader (PG&E)
 - Tim Chan (TVA)
 - Jeff Stone (Constellation)
 - Hank Stroup (Progress Energy)
 - Jim Cirilli (Exelon)

Exec. Committee Chairman Exec. Committee Vice-Chairman PWROG Chairman PWROG Vice Chairman

Analysis Licensing Systems & Equipment Risk Management Procedures Materials





PWR Owners Group March 2010 Executive Committee/NRC Meeting **Review Actions from Previous Year**

- ACTION: Provide PRA/risk training details to the NRC.
 STATUS: Closed Jack Grobe (NRC) requested an update on the status of industry training initiatives. In June of 2009 the RMSC indicated that there was no new training information to provide.
- ACTION: Arrange a call with the NRC Staff and the PWROG to discuss the future actions required for BAW-2374.
 STATUS: Closed A meeting w/NRC was held on 5/13/09 with a follow-up meeting June '09. A resolution path was established with the NRC.

PWR Owners Group March 2010 Executive Committee/NRC Meeting **Review Actions from Previous Year**

- ACTION: NRC requested that the PWROG advise how many plants will look to implement TS Initiatives 4b and 5b, along with a proposed schedule. **STATUS:** Closed Results were issued to the NRC May of 2009.
- ACTION: Evaluate the need for additional EMG drop-in meetings with the NRC in 2009 and 2010.

STATUS: Closed – The need was evaluated by the PWROG and two drop-in visits were requested and held since March of 2009 (June '09 & January '10). We are targeting an additional two drop-in visits in 2010.

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PWROG Licensing & Topical Report Summary

Ken Schrader, PG&E Licensing Subcommittee Chairman

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PWR Owners Group March 2010 Executive Committee/NRC Meeting **TSTF Traveler Reviews in 2009**

- In 2009, the NRC Tech Spec Branch was fully staffed and a significant increase in completed TSTF Traveler approvals was anticipated
 - Only 1 TSTF Approval in 2008, down from 8-9 in 2006-7
 - While more Notices for Comment (NfC) were published (5 vice 1), only two Notices of Availability (NoAs) were published in 2009
 - In September, 7 to 9 approvals were anticipated
 - TSTF-493, "Clarify Application of Setpoint Methodology for LSSS Functions" was not completed as planned
- In addition, the NRC is questioning their prior approval for 11 Travelers, resulting in withdrawals, RAIs, and uncertainty
- Although NRC productivity has increased slightly for 2009, the approval rate and approval time remains to be less than expected.

PWR Owners Group March 2010 Executive Committee/NRC Meeting Traveler Activities 2006-2009

Description	2006	2007	2008	2009
Travelers Approved	8	9	· 1	2
Notices of Availability Published	6	9	1	2
Notices for Comment Published	9	5	1	5
NRC Letters (RAIs, etc.)	28	27	13	15
TSTF Letters	35	31	22	30

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Travelers Expected to be Approved in 2009 vs. Actual Approval

- TSTF-498, "Risk-Informed Containment Isolation Valve Completion Times (BAW-2461)" (Approved in January)
- TSTF-425, "Relocate Surveillance Frequencies to Licensee Control RITSTF Initiative 5b" (Approved in July)
- 3. TSTF-493, "Clarify Application of Setpoint Methodology for LSSS Functions," (NoA expected in December)
- 4. TSTF-446, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)" (NfC response on 10/15/09)
- 5. TSTF-500, "DC Electrical Rewrite Update to TSTF-360" (NfC expected in September but never published)
- 6. TSTF-501, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control" (Responded to NfC on 10/16/09)
- 7. TSTF-508, "Revise Control Room Habitability Actions to Address Lessons Learned from TSTF-448 Implementation" (Responded to NfC on 11/16/09)
- 8. TSTF-513, "Revise PWR Operability Requirements and Actions for RCS Leakage Instrumentation" (Responded to NfC on 11/9/09)
- * NfC Notice for Comment, NoA Notice of Availability

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Traveler Peer Review Process Implemented

- TSTF determined that we could improve the quality of our submittals and considered several options.
- Under the current industry review process, it's hard to determine whether a draft Traveler has been carefully reviewed.
- TSTF implemented a peer review by an assigned individual for each Traveler and Traveler revision submittal.
 - For new Travelers, the peer review will be performed prior to distribution for industry review and will be rotated among the Owners Group (OG) members.
 - Good peer review participation by OG members.

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Plant-Specific Submittals based on TSTF Model Applications

- Average savings of \$20K/amendment for LARs processed using model applications in FY2009, an industry savings of \$1.2 million
 - NRC closed 58 CLIIPs in FY09 with an average staff-hour expenditure of 18.6 per CLIIP
 - NRC completed 544 license amendments at an average of 97 staffhours/amendment
 - Expect more savings per year as more LARs are processes using model applications

PWR Owners Group March 2010 Executive Committee/NRC Meeting **Topical Reports Approved Since 2005**

2005	2
2006	3
2007	6
2008	5
2009	1
Total	17

- Topical Reports Currently Under <u>Active</u> NRC Review: 7 - (5 WEC / 2 AREVA)
- Topical Reports Planned to be Submitted for NRC Review: 10

PWR Owners Group March 2010 Executive Committee/NRC Meeting **Topical Reports Approved in Previous 12 months**

Report	NSSS	Title	SE	TSTF
WCAP-16308	W	Pilot Plant Implementation of 10CFR50.69 (WC)	3/26/09	N/A

- Three Draft SE's issued since October 2009
- Topical Reports Approved in 2009, less than expected

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Topical Reports Submitted for Review and Approval

Status as of 2/11/2010

WCAP	NSSS	Title	Draft SE	TSTF
16294	W	Risk Informed Tech Spec End States <i>The NRC's Draft Safety Evaluation was received by</i> <i>the PWROG via NEI on 12/14/2009. Comments</i> <i>were provided to the NRC staff via NEI on</i> <i>1/13/2010.</i>	12/09	432
16125 R1	CE	Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown The NRC Issued their Draft Safety Evaluation on 10/19/2009. PWROG provided comments to DSE on 11/11/2009. Awaiting Final SE. During Deputy Director review, NRC identified that all of the appropriate system branches were not involved with reviewing the Draft SE.	10/09	426

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PWR Owners Group March 2010 Executive Committee/NRC Meeting **Topical Reports Submitted for Review and Approval**

WCAP	NSSS	Title	Draft SE	TSTF
PSAT 4025CF. QA.04 Rev. 1	ALL	StarFIRE Model Report (<i>Iodine Re-Evolution Fraction in ESF Leakage</i>) NRC issued draft RAI's to the PWROG on 11/23/09. Polestar is drafting responses for 11 of 16 RAIs. Will respond to RAI's 30 days from receiving NRC formal letter.	TBD	N/A
17100 Rev. 0	W & TMI	PRA Model for the Westinghouse Shut Down Seal Formal RAI's were received on 11/30/09. PWROG responded 1/28/10. Meeting held 1/13/10 to discuss RAIs. The PWROG will submit Revision 1 mid February to NRC to help facilitate review.	03/10	N/A

Status as of 2/11/2010

PWR Owners Group March 2010 Executive Committee/NRC Meeting **Topical Reports Submitted for Review and Approval**

WCAP	NSSS	Title	Draft SE	TSTF
16793 R1	W	 Evaluation of Long-Term Cooling Considering Particulate and Chemical Debris in the Recirculating Fluid (GSI-191) Weekly calls w/ staff ongoing NRC witnessed fuel assembly test on 12/1 – 12/2 Public mtg 12/16-17 to discuss LTCC and ZOI's On January 8, 2010 the PWROG received: 27 LTCC RAI's 8 RAI's related to <u>W</u> Test Report WCAP-17057-P 8 RAI's related to Areva Test Report 51-91-02685-000 All responses are due by 2/10/2010. Public mtg scheduled 2/16 to discuss ZOI and FT. Upon successful review DSE expected May 2010 	05/10	N/A

Status as of 2/11/2010

PWR Owners Group March 2010 Executive Committee/NRC Meeting **Topical Reports Submitted for Review and Approval**

Status as of 2/11/2010

BAW	NSSS	Title	Draft SE	TSTF
10192	B&W	BWNT LOCA – BWNT Loss of Coolant Accident Evaluation Model for Once-Through Steam Generator Plants <i>RAI's were received and Areva plans to respond</i> <i>to RAI's by 4/15/2010.</i>	TBD	N/A
10179-P	B&W	Safety Criteria and Methodology for Acceptable Cycle Reload Analyses Revision 8. Draft Safety Evaluation Received 12/10/09. Comments provided 12/22/09. Awaiting Final SE.	12/09	N/A

PWR Owners Group March 2010 Executive Committee/NRC Meeting **Topical Reports to be Submitted**

- By the letter dated December 2, 2009, the NRC requested, as part of the ongoing efforts to improve the effectiveness and efficiency of the topical report (TR) program, up-to-date information on future TR submittals to be submitted for NRC planning and budgeting purposes.
- PWROG response via letter OG-09-487 estimates:
 - 4 Topical Reports to be submitted to staff for review in FY10
 - 5 Topical Reports to be submitted to staff for review in FY11
 - 1 Topical Reports to be submitted to staff for review in FY12
- List included those Topical Reports that are still in the conceptual phase and have no approved funding at this time.
- Plan is to provide pipeline information to NRC on bi-annual basis.

PWR Owners Group March 2010 Executive Committee/NRC Meeting Recent Regulatory Activity

- Joint Owners Group public meetings with NRC Special Projects Branch & Staff on Topical Reports (TR)
 - Conducted six meetings in 2008 and six in 2009.
 - NEI TR Team (WEC, AREVA, GE, PWROG, BWROG and EPRI)
- NRC staff and industry representatives provide updates and exchange perspectives on the following:
 - Current status of LIC-500, Draft Revision 4
 - ACRS interest in TRs (late in the game)
 - Revisiting completed TR reviews (Future Topic)
 - Pilot license amendment requests in conjunction with TR reviews
 - Consolidated Line Item Improvement Process (CLIIP) like process for TRs
 - Impact of NRC staff turnover
 - NRC metrics
 - Standard TR format (Requesting NRC feedback to WCAP-17100)

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PWR Owners Group March 2010 Executive Committee/NRC Meeting **PWROG LSC Strategic Outlook**

• Vision, Goals and Aspirations

- The LSC will be the clearing house to assure that consistent licensing communication and positions are conveyed to the NRC
- Develop, approve and execute a plan to address Life Beyond 60 needs of the PWROG member utilities
- Create a plan/strategy to integrate new plants (advanced reactors and completion of suspended plants) into the PWROG LSC activities
- Create a LSC presence to the NRC that the NRC values
- PWROG LSC Chair holds regular licensing issue information exchange meetings with the NRC to address key issues

PWR Owners Group March 2010 Executive Committee/NRC Meeting **PWROG Key Focus Activities**

- Gas Accumulation
- GSI-191
- Material Initiatives
- PRA Fire PRA, NFPA 805, Risk Initiatives
- Boric Acid Precipitation

• Issue Statement:

- NRC Generic Letter (GL 2008-01), "Managing Gas Intrusion in Emergency Core Cooling, Decay Heat removal, and Containment Spray Systems," requires demonstration that suitable design, operational and testing control measures are in place to maintain licensing commitments.
- Each addressee is requested to evaluate their Emergency Core Cooling System (ECCS), Decay Heat Removal/Residual Heat Removal (RHR) system, and Containment Spray (CS) system.
- Evaluation is to include design, operation, and test procedures to assure that gas intrusion is minimized and monitored in order to maintain system operability and compliance with the requirements of Appendix B to 10 CFR 50.

• Accomplishments to Date:

- Formulated industry-wide technical solutions (*later joined by the BWROG as well*) within two months after the issuance of GL 2008-01
- Technical reports developed for gas transport, pump gas tolerance criteria, pressure pulsation effects in the discharge piping and, core cooling evaluation.
 - Reports have been submitted to the NRC for information only
 - Transport work is still underway (2 currently active PA's)
- Technical Specification Core Team formed

• Planned Activities:

- Efforts ongoing to develop the pump gas acceptance criteria
 - A joint PWROG/BWROG/EPRI program to formulate a "Roadmap" has been developed.
 - Approval is contingent upon a signed Memorandum of Understanding (MOU) letter.
 - NRC Division of Safety Systems (DSS) has issued a draft inspection criteria. This criterion may require substantial effort by each utility to ensure compliance. The Joint Owners Group is working to develop the basis of a suction side pump criteria that is acceptable to the NRC and the industry.

• Challenges to Success:

- The NRC DSS has issued a draft document stating their void acceptance criteria. This criterion may require substantial efforts on the part of many utilities to ensure compliance.
- NEI has issued a response to the DSS letter. The joint industry is working on a revision to the initial NEI APC letter that defends a common industry approach that we feel the NRC will accept due to theoretical and empirical data arguments.

• Issue Statement:

– Long-Term Core Cooling (LTCC) Debris Filter Testing

- The objective of this program is to provide a reasonable assurance that LTCC flow would be maintained post-LOCA when coolant is re-circulated to the reactor core from the containment sump.
- This WCAP was submitted to NRC for formal review and approval in 2007, and the PWROG received and responded to two sets of RAIs.
- The NRC provided a draft Safety Evaluation in 2008.
- Questions raised by the Advisory Committee on Reactor Safeguards (ACRS) caused NRC to withdraw the draft SE and issue a third set of RAIs.
- Zone of Influence (ZOI) Jet Impingement Testing
 - Westinghouse is addressing NRC questions regarding various WCAPs associated with jet impingement testing.
 - Seven areas of concern were raised by the NRC.

Accomplishments to Date:

- LTCC
 - NRC issued draft RAIs on WCAP-16793-NP, Rev 1 on July 6, 2009
 - This set of RAIs included specific questions related to testing.
 - Additional testing has been completed.
 - RAI responses were submitted to the NRC in February 2010.
 - Acceptance criteria has been set for Westinghouse fuel.
- ZOI
 - A schedule is in place with the NRC for resolution of questions. This involves information being submitted every week with a phone call to discuss the information the following week.
 - Further testing was performed at Wyle Labs in Alabama.

- Planned Activities:
 - LTCC
 - The NRC anticipates issuing a SE in May 2010.
 - ZOI
 - RAI responses are due to the NRC on March 1, 2010
 - An issue was identified with earlier Westinghouse testing. This issued is being addressed under the Westinghouse Corrective Action Program (CAP) and the Westinghouse 10 CFR Part 21 process. This issues has minimal impact on the overall outcome of the program.

- Challenges to Success:
 - LTCC
 - Acceptance criteria has not yet been set for AREVA fuel
 - ZOI
 - This most recent testing has not satisfied the NRC on two of the seven issues, and the PWROG is currently at an impasse with the NRC on these two issues.
 - All of the approved testing is now complete.
 - More testing would be required to successfully answer the two outstanding issues. This testing would be in addition to the currently approved scope.

Issue Statement

- A 2008 Material Executive Oversight Group (MEOG) self assessment of the implementation of the Materials Initiative (NEI 03-08) concluded that policies, culture attributes and practices that industry required as a response to the Materials Initiative had been successfully implemented by various industry materials programs to such an extent that there are now opportunities for simplification of the oversight functions defined in NEI 03-08.
 - The recommendation, accepted by the MEOG in June 2009, was to eliminate MTAG and MEOG, add Issues Program executive chairs (or vice chairs) to the EPRI Materials and NDE Action Planning Committees (APC), and transition key responsibilities of MTAG/MEOG to the Materials APC and NEI, as appropriate.

Accomplishments to Date

- A Change Management Plan (CMP) has been developed as a response to this recommendation with the PWROG MSC involved in the development of the plan.
 - The MSC has captured the appropriate action items to complete implementation of its assigned responsibilities.
 - The CMP formalizes the coordination and communication between the PWROG MSC and MRP through common membership in the EPRI Materials APC.
 - PWROG MSC membership on the Materials APC includes the MSC Chairman and an executive sponsor. Terry Garrett of WCNC has volunteered to be the PWROG MSC Executive sponsor on the Materials APC.

Accomplishments to Date - Continued

 To help guide this goal and incorporate the changes in the Materials Initiative, the MSC has revised its strategic plan. The MSC Strategic Plan provides the long term vision as well as the near and long-term goals/aspirations for the PWROG MSC.

Planned Activities

- The CMP requires that one emergent issues protocol be developed and implemented for emerging materials degradation issues across the MRP and PWROG MSC. This has been drafted between the two organizations.
- Hold a series of webcasts & meetings to develop one strategic plan for each area: Reactor Vessel Integrity, PWR Reactor Internals & Stainless Steel Degradation.
- Continue to the revise the MSC Strategic Plan as actions are addressed and new issues arise.

Challenges to Success

- One risk item identified during the development of this Change Management Plan was the importance of not losing the cross-program coordination and executive level attention on materials issues provided through the initial response to the Initiative.
 - To address this risk, an additional constraint was created that the Executive Chairmen/Sponsors of the EPRI Materials and NDE APCs be fully engaged in the activities of the APCs, be aware of ongoing and emerging issues and maintain effective communication with the NSIAC.

Issue Statement

- ASME / ANS PRA Standard endorsed in RG 1.200, Revision 2 in March 2009, with an effective implementation date of April 1, 2010
 - All voluntary risk-informed license applications will need to address RG
 1.200 for risk contributors significant to the application, potentially
 including fire risk and external event risk, beginning in April 2010
 - The ASME/ANS PRA Standard requires peer reviews on applicable model elements (e.g., internal events, fires, or external events), used in the application.
 - To address NFPA 805 or 10 CFR 50.48 exemptions, almost all PWRs are in the process of developing or will soon begin developing Fire PRAs

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Accomplishments to Date

- Over the last decade, the NRC and the Industry have been successful in developing and implementing the use of risk insights in licensing and reactor oversight processes
 - Risk-Informed Technical Specification Task Force (RITSTF) Initiative 2 Missed Surveillances
 - RITSTF Initiative 3 Relaxation of Mode Restraints
 - Pilot implementation of RITSTF Initiative 4B Flexible Completion Times (CT)
 - RITSTF Initiative 5B Surveillance Test Intervals
 - Mitigating System Performance Index (MSPI)
- The Industry believes that these applications have and will continue to improve plant safety
- Furthermore, maintenance and plant modifications are now focused on more risk-significant equipment

Planned Activities

- EPRI Fire PRA Improvement Plan
 - Both OGs, NEI, EPRI participating (BWR pending funds)
 - Matrix of Actions developed by EPRI
 - Develops more refined and realistic modeling methods and research data
 - Some data/methods can potentially be used to relax NFPA 805 conservatisms
 - Long term will provide realistic tools for defending utility positions within Significance Determination Process (SDPs) and implementing RITSTF Initiatives

Planned Activities - *Continued*

- Industry must work with the NRC to develop the most reasonable approach for scope requirements for applications under RG 1.200, Revision 2 (while meeting the intent of the RG)
 - This approach needs to address gaps in Fire and Seismic capability until:
 - The EPRI Fire PRA Improvement Plan is completed,
 - External hazard PRA models are piloted, hazard frequencies resolved, and the methods refined.
 - The Industry is considering submitting a letter to the NRC to propose a reasonable approach and then to work with NRC to agree on ground rules for continuing successful risk-informed applications and the impact of applying RG 1.200, Revision 2
 - Note, the Industry may decide to work informally with NRC instead of formally issuing a letter

Challenges to Success

- Risk-Informed License Applications and RG 1.200, Revision 2
 - There is some uncertainty of impact on PRA model scope requirements for each risk-informed application (i.e., include fire, seismic, and other external events)
 - Industry team (OGs, NEI, EPRI) working with NRC to resolve this issue
 - Strict interpretation of RG 1.200, Revision 2 will have significant impact on some risk-informed applications

Challenges to Success - Continued

- Fire PRA Results and Applications
 - <u>Current methods can provide excellent insights on fire vulnerabilities</u>, but concerns exist on numerical results and comparison to actual experience
 - Fire PRA Guidance for NFPA-805 is unlikely to change significantly in the near future
 - NRC Staff involved in decisions for NFPA-805 appear comfortable with potentially conservative models to support this application
 - Non-realistic results can distort risk insights and negatively impact riskinformed applications where fire is a significant contributor
 - Significance Determination Process (SDP)
 - Risk-Informed Technical Specifications (RITSTF I4B)

Challenges to Success - *Continued*

- Fire PRA Results and Applications
 - Where does that leave Fire PRA?
 - Utilities may need to maintain two Fire PRAs
 - NFPA 805 Fire PRA
 - Fire PRA Risk-Informed decision making (non NFPA-805 applications)

Issue Statement

- In the early 2000's, the NRC challenged boric acid precipitation analysis submittals
 - This has led to shorter and problematic hot leg switchover times
- In 2005 NRC suspended all PWR Long Term Cooling (LTC) Methodologies
- In 2006 the NSSS vendors and NRC agree to interim LTC methodologies

Accomplishments to Date

- PWROG has approved Phase 1 of a 2 Phase program to define, develop and obtain NRC approval of a post-LOCA boric acid precipitation analysis methodology
- Phase 1
 - Define Methodology Requirements Report (Evaluation Model Scenarios, Assumptions and Acceptance Criteria) for submittal in 2010
- Phase 2
 - Based on the Methodology Requirements report, develop an Evaluation Model Report for submittal
 - Request for approval of Phase 2; 3rd Quarter, 2010

Accomplishments to Date - Continued

- Public Meeting March 18, 2009 (*High-level overview of the PWROG program*)
 - Objective, Analysis, Testing and Deliverables / Topical Reports
 - Schedule, Licensing, Communication Plan, Points of Contact
- Strategic Plan developed and reviewed by the Steering Committee.
- Test reports issued to the PWROG and to NRC for information only
- Technical Interface meeting conducted with NRC 4th Quarter, 2009

Planned Activities

- Continued Quarterly Technical interface Meetings with NRC
- Perform Tests of Boric Acid Precipitation in presence of Debris
- Submit Topical Report establishing Ground rules for use in the development of a Boric Acid Precipitation Methodology
- Submit Boric Acid Precipitation Methodology Topical Report for NRC review

Challenges to Success

- NRC resources for Topical report reviews
- Review Fee waiver approval

PWR Owners Group March 2010 Executive Committee/NRC Meeting

NRC Topics for Discussion

PWR Owners Group March 2010 Executive Committee/NRC Meeting Meeting Review

- Open Discussion
- Future meeting dates
 - Drop-in meeting (limited attendees)
 - Day before the RIC meeting March 2010
- Review of Action Items/Closing Remarks
- Adjourn