

**BWR Owners Group/NRC
Senior Management Meeting**

August 31, 2004

AGENDA

- **Opening Remarks**
- **Joint Submittal Planning**
- **Current Issues:**
 - Topical Reports Under Review
 - Technical Specification Task Force Affecting Boiling Water Reactors
- **PUBLIC COMMENT**
- **Other Current Issues:**
 - Combustible Gas Amended Rule Implementation Items
 - GSI-189, “Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion During Severe Accidents”
- **Status of Industry Efforts Related to Power Upgrades**
- **Other BWROG/NRC Status Issues**
- **Review of Past and New Action Items**
- **PUBLIC COMMENT**

Topical Reports Under Review

- NEDC-33046 – Technical Justification to Support Risk-Informed Primary Containment Isolation Valve AOT Extensions for BWR Plants
- NEDO 33148 – Separation of Loss of Offsite Power From Large Break LOCA
- Joint Owners' Group (JOG) Motor Operated Valve Periodic Verification Program Summary, MPR-2524 Revision 0
- NEDO-33150-NP – BWR Residual Heat Removal System Potential for Water Hammer

TSTF Changes Already Available for Adoption by BWRs Using the Consolidated Line Item Improvement Process

- TSTF-413 – Eliminate Post Accident Sampling Requirement
- TSTF-358 – Missed Surveillance Requirements
- TSTF-359 – Increase Flexibility in Mode Restraints
- TSTF-369 – Deletion of Monthly Operating Report
- TSTF-404 – Scram Discharge Volume Vent and Drain Lines
- TSTF-447 – Hydrogen Recombiners and Hydrogen/Oxygen Monitors

TSTF Changes Currently Being Evaluated by the NRC Staff

- **TSTF-357 – Revision to Safety Limit MCPR (move value to the Core Operating Limits Report [COLR])**
- **TSTF-423 – Technical Specifications End States**
- **TSTF-448 – Control Room Habitability**
- **TSTF-454 – Increase Primary Containment Isolation Valve (PCIV) Completion Times**
- **TSTF-459 – Eliminate Requirement re: Residual Heat Removal (RHR) Shutdown Cooling (SDC)**

***BWR Owners' Group
Extended Power Uprate
and
Steam Dryer Integrity Status***

Presentation for BWROG/NRC Management
Meeting

August 31, 2004
Rockville, MD

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**EPU / Steam Dryer Integrity
Background**

-
- ✘ Power Uprates provide an important contribution to electrical capacity
 - ✘ Uprates only have value if done safely and reliably

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Industry Efforts Related To Extended Power Uprate and Steam Dryer Integrity

- ✘ Equipment Challenges from EPU
- ✘ EPU Process Improvement
- ✘ Steam Dryer Management
- ✘ Steam Dryer Loading
- ✘ Loose Parts Evaluation

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Understanding Equipment Challenges From EPU

- ✘ Extent of Condition evaluation by Exelon/GE
- ✘ Survey of BWR EPU experience
- ✘ INPO Database of Uprate experience (Includes PWR and small uprates)
- ✘ Vibration Monitoring

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Improving the EPU Process

- ✧ Revised GE Task Instructions
- ✧ Material Condition Assessment

- ✧ BWROG Lessons Learned and Implementation Recommendations Report

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Improving Management of Steam Dryers

- ✧ SIL 644 Update

- ✧ BWR Moisture Carryover and Operational Response Guidelines

- ✧ BWRVIP Inspection and Evaluation Guidelines

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Improving Understanding of Steam Dryer Loads and Analysis

- ◆ Acoustic Circuit Analysis
- ◆ Scale Model Testing
- ◆ Instrumented Dryers & Plant Components

- ◆ Finite Element Modeling

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Improve Loose Parts Evaluation

- ✘ Update BWRVIP-06 loose parts evaluation to include recent industry experience

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Exelon and GE - Evaluation for Extent of Condition

Task	Responsibility	Scheduled Completion
EPU Extent of Condition Evaluation for Dresden and Quad Cities	GE/Exelon	Complete May 2004
Modify GE Process for EPU Evaluations as Required	GE	Complete June 2004

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Steam Dryer and Internals Initiatives

Task	Responsibility	Scheduled Completion
Revision of SIL 644 to include more recent experience	GE	Sept 2004
Steam Dryer I&E Guidelines	GE/BWRVIP	Dec 2004
Revision of BWRVIP-06 including revised guidance for addressing loose parts	GE/BWRVIP	Dec 2004
Validate a methodology for determining steam dryer loading using main steam acoustic circuit analysis and verification with scaled model testing and plant data	GE	May 2005

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BWROG Assessment of Industry Experience

Task	Responsibility	Scheduled Completion
Analysis of INPO Power Uprate and Cycle Extension Database	BWROG	Completed Feb 2004
BWROG EPU Survey summary and evaluation	BWROG	Completed March 2004
BWR Moisture Carryover and Operational Response Guidelines	BWROG	Sept 2004

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BWROG Oversight of Industry Activities

Task	Responsibility	Scheduled Completion
Review EPU Extent of Condition Evaluation process and pilot for Dresden and Quad Cities	BWROG	Completed Feb 2004
Review EPU-related vulnerabilities for "Group 1" systems from EPU Extent of Condition Evaluation	BWROG	Completed April 2004
Review EPU Extent of Condition final recommendations	BWROG	Completed June 2004
Conduct vibration monitoring and evaluation information exchange meeting and document lessons learned and industry recommendations	BWROG	Completed June 2004

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BWROG Oversight of Industry Activities

Task	Responsibility	Scheduled Completion
Issue letter to NRC summarizing results of BWROG EPU Survey, Evaluation of INPO Database, and Integrated Industry Plan	BWROG	Completed May 2004
BWROG Lessons Learned and Implementation Recommendations Report	BWROG	Completed July 2004
Issue final EPU evaluation and implementation recommendations	BWROG	December 2004
Review results of industry programs and BWROG recommendations with NRC management	BWROG	Ongoing

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Risk Informed Part 50 Option 3

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BWROG/NRC Management Meeting
August 31, 2004
Rockville, MD

Tony Browning (NMC)

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Purpose of the BWROG Option 3 Committee

- Pursue regulatory changes to allow the separation of LOOP from LBLOCA in the Licensing Basis
 - The probability of a Loss of Offsite Power concurrent with a large break Loss of Coolant Accident is sufficiently low to be treated as a severe accident

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Purpose of the Presentation

- Define mutual actions to support the review of BWROG LBLOCA/LOOP Separation LTR & Pilot Plant(s) Submittals on the agreed to schedule

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Recent developments

- NRC SRM
 - 10 CFR 50.46 draft rule has priority
 - Due date - end of 2004
 - BWROG LTR has second priority
 - NRC Staff review to start 1/10/2005
 - Lack of pilots would likely delay LTR review
- NRC review fee waiver granted for BWROG LTR
- NRC's LTR acceptance review completed
 - Review start date – January 2005
 - 1500 man-hour review estimate
 - Projected completion – August 2006

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Recent Developments (Continued)

- BWROG/NRC Staff Meeting – 7/27/04
 - Multiple pilots may not be helpful
 - Pilot plant(s) submittals by 2nd Qtr 2005
 - Pilot Plant submittal content/detail
 - LTR Proof of Concept
 - NRC Staff feedback
 - LOOP and LBLOCA Probabilities
 - Generic PRA approach
 - T/H analysis codes

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BWROG View of Importance

- BWROG Expenditures
 - To date: \$1.44 Million
 - Remaining 2004: \$200K
 - 2005 (est.): \$450K
 - 2006 (est.): \$300K
 - Projected Total: \$2.39 Million

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NRC and BWROG Actions

- BWROG:
 - Identify Pilot Plant(s)
 - Identify a management sponsor
 - Pilot Plant submittal - 2nd quarter 2005
 - Provide timely responses to RAIs
- NRC:
 - Identify a management "sponsor"
 - Identify early review opportunities
 - Electrical Systems Branch RAIs in 2004
 - Focused reviews
 - Maintain schedule

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TSTF-357 Replacement of Cycle-Specific Numeric SLMCPR with Boiling Transition Safety Limit

- Cycle-Specific SLMCPR value changes result in large number of repetitive TS changes
 - BWR hardship in cost and resource impact
 - Timing of TS submittals constrains core design process
 - Approval timing drives TS implementation into outages
- Industry Proposal - TSTF-357
 - Use 99.9 % Boiling Transition avoidance criterion for SL in Technical Specification
 - Move numerical value of SLMCPR to COLR

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Basis for TSTF-357

- Original BWR TS contained numeric values of all core thermal limits – caused excessive number of TS changes
- GL 88-16 allowed relocation of core thermal limits numerical values from TS to the COLR
- SLMCPR is calculated for each cycle using NRC approved methods
- BWR SLMCPR is the only remaining cycle-specific TS value
- Basis for TSTF-357 is consistent with GL 88-16

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Meeting with NRC on TSTF-357

- NRC expressed reluctance on approving TSTF-357 at this time
- Vendor methods and other concerns were discussed
- BWROG indicated that vendor audits would be a more appropriate vehicle to evaluate methods
- NRC Staff to formally document concerns on TSTF-357
- BWROG is planning to work with TSTF and the NRC Staff to promptly respond to the Staff letter
- NRC/Industry agreement to develop interim SLMCPR submittal template to streamline review/approval process

COMBUSTIBLE GAS CONTROL AMENDED RULE IMPLEMENTATION

Presentation For
BWROG NRC Management Meeting
August 31, 2004
Rockville, MD

Tony Browning (NMC)

August 31, 2004

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COMBUSTIBLE GAS CONTROL AMENDED RULE IMPLEMENTATION

----- PRESENTATION OBJECTIVE

- ✘ Purpose of Committee
- ✘ Provide Background
- ✘ Open Issues
- ✘ Scope of Committee Activities
- ✘ Requested NRC Support

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COMBUSTIBLE GAS CONTROL AMENDED RULE IMPLEMENTATION

PURPOSE OF COMMITTEE

- ✘ Assist BWR Owners with implementation of Combustible Gas Control Amended Rule & CLIP
- ✘ Enable BWR Owners to realize intended benefits
- ✘ Resolve identified Open Issues that impact implementation
- ✘ Assist in resolving GSI-189 for BWR Mark III Owners

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COMBUSTIBLE GAS CONTROL AMENDED RULE IMPLEMENTATION

BACKGROUND

- ✘ Amended Combustible Gas Control (CGC) Rule
 - ◆ Rule Package and CLIP published September 2003
 - ◆ “Risk-informed” Rule
 - ◆ Requirements different based on BWR containment type
- ✘ BWROG active in Rule Package Development
 - ◆ BWROG docketed LTR
- ✘ Open GSI-189 (Igniters) also impacts BWR Mark III Owners

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COMBUSTIBLE GAS CONTROL AMENDED RULE IMPLEMENTATION

BACKGROUND (cont)

✖ Rule Highlights

- ◆ Reclassifies Combustible Gas mixtures from Design Basis Accident to Severe Accident category
- ◆ Eliminates need for Hydrogen Recombiners
- ◆ Relaxes requirements on H₂-O₂ Monitors (non-safety related)
- ◆ Maintains Inerted Atmosphere (Mark I and II's)

✖ CLIP Highlights

- ◆ Deletes Hydrogen Recombiners from TS
- ◆ Relocates H₂-O₂ Monitors to "licensee-controlled document" (e.g., TRM)

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COMBUSTIBLE GAS CONTROL AMENDED RULE IMPLEMENTATION

OPEN ISSUES

- ✖ Requirements for H₂-O₂ Monitors
- ✖ Initial NRC Safety Evaluation wording for CLIP Amendments
- ✖ Follow-up TS Items:
 - ◆ Address licensees who use CAD System in lieu of Recombiners (Mark I's)
 - ◆ Resolve conflict in Mark III Igniter TS Actions

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**COMBUSTIBLE GAS CONTROL
AMENDED RULE IMPLEMENTATION**

SCOPE OF COMMITTEE ACTIVITIES

- ⌘ Assist BWR Owners with CLIP Adoption
- ⌘ Work with Industry Groups (NEI and NUGEQ) and NRC to clarify requirements
- ⌘ Develop Follow-up TS changes
 - ◆ Address CAD (Mark I's)
 - ◆ Resolve TS Required Actions for Igniters (Mark III's)
 - ◆ Revise Oxygen Concentration TS to match new licensing basis (Mark I & II's)
- ⌘ Develop design criteria for H₂-O₂ monitors per Rule intent
- ⌘ Support favorable resolution of GSI-189

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**COMBUSTIBLE GAS CONTROL
AMENDED RULE IMPLEMENTATION**

REQUESTED NRC SUPPORT

- ⌘ Consider Fee Waivers for follow-up CLIP TSTFs
- ⌘ Work with Committee on H₂-O₂ Monitor requirements and document concurrence (e.g., RG 1.7 (Rev. 3))
- ⌘ Continue Dialogue on Resolution of GSI-189 – Focus on Mark III design differences and Cost/Benefit evaluations

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Review of CIV AOT Extension Submittals

Ken Putnam (NMC)



BWROG Project Schedule

- ❖ Approval of CEOG LTR (June 26, 2000)
- ❖ BWROG Submitted CIV AOT LTR to NRC (February 21, 2002)
- ❖ NRC RAIs Sent to BWROG (April 23, 2003)
- ❖ BWROG Responses to the RAIs (July 30, 2003)
- ❖ TSTF Submitted to the NRC (September 5, 2003)
- ❖ Draft SER Issued (September 30, 2004)



Draft CIV AOT SER under review

- ❖ NRC/BWROG telecon held 8/27/04
 - ❖ Topical Report is bounding
 - ❖ General Agreement on Plant-Specific Documentation
 - ❖ PRA Quality Documentation
- ❖ BWROG will suggest revisions / clarifications to NRC conditions based on telecon

Topical Report Review Process

**Presentation for
BWROG Executive Oversight
Committee Meeting
Washington**

**Ken Putnam
NMC-DAEC
Chairman, BWROG**

August 30, 2004

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BENEFITS OF TOPICAL REPORTS

- *Efficient Use of Industry Resources**
- *Enhanced Consistency in Industry**
- *Efficient Use of NRC Resources**
- *Improved Quality of Analysis**

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TOPICAL REPORT REVIEW RECENT GUIDANCE

- Pre-Submittal Meeting Guidance Positive
- Acceptance Review Guidance Positive
- Issuance of Draft Safety Evaluations for Comment Positive

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POSSIBLE IMPROVEMENTS TO TOPICAL REPORT REVIEW PROCESS

- Include Resource Planning and Prioritization with Pre-Submittal Meeting
- Minimize Reviewer Changes
- Improve Communications on Schedule Changes
- Minimize Plant Specific Evaluations for Implementation

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Document Number	PM	Title	Project Milestone	BWROG Dates			NRC Dates			COMMENTS
				Original Date	Expected Date	Actual Date	Original Date	Expected Date	Actual Date	
TSTF-343	Hill	Containment Structural Integrity (All Owners Groups)	Revise TSTF	3/31/2004	10/30/2004					WOG action to revise TSTF to use correct version of the Code.
			RAIs provided							
			RAI responses							
			NRC SER							
			CLIIP							
TSTF-357, R1	Hill	Revision to TS 2.1.1.2, MCPR Safety Limit	Submit TSTF R0			10/20/1999				
			R1			4/7/2003				
			BWROG/NRC meeting	7/20/2004	7/20/2004	7/20/2004	7/20/2004	7/20/2004	7/20/2004	TEICC presentation made to NRC supporting TSTF
			NRC comments on TSTF-357 R1					8/15/2004		NRC to provide written comments on reservations with TSTF.
			Vendors to develop SLMCPR submittal template	9/1/2004			9/1/2004			Parallel effort to reduce no. of RAIs.
TSTF-448	Hill	Control Room Habitability (All Owners Groups)	Submit TSTF R0			12/30/2002				
			Submit TSTF R1			8/19/2003				
			NRC RAI						12/16/2003	
			TSTF Committee response			3/8/2004				RAI response committed to revise TSTF following NRC review of response.
			NRC Comments				8/18/2004			Feedback from control room committee indicates NRC comments forthcoming
			TSTF Committee response							
			NRC SER							
CLIIP										
TSTF-459	Hill	Eliminate the requirement to have one RHR Shutdown Cooling System in operation	Submit TSTF			9/17/2003				
			Revise TSTF	9/30/2004						NRC requests TSTF revision based on telecon comments
			NRC SER							
CLIIP										
TSTF-460	Hill	Control Rod Scram Time Frequency (120 days -> 200 days)	Submit TSTF			9/7/2003				
			Draft NRC SER						5/27/2004	CLIIP comment period ended on 6/28/04.
			NRC issue CFR Notice of Availability to adopt via CLIIP				8/31/2004		8/23/2004	Notice of Availability to Adopt posted August 23, 2004.
TSTF-465	Hill	Addition of Time performance Surveillance Requirement (SR) note to Source Range Monitor (SRM) SRs	Submit TSTF			9/18/2003				In NRC house for review. NRC indicates TSTF review may be reassigned to another PM.
			NRC RAIs							
			BWROG response							
			NRC SER				9/30/2004			
			CLIIP							
NEDO-33091	Tuttle	Improved BPWS Control Rod Insertion Process NEDO-33091	Final report				10/1/2004	10/30/2004		
			SER							
			Submit Topical			6/6/2003				BWROG requested earlier review for Spring 2004 Outages
			NRC comments						3/23/2003	NRC comments received via telecon.
			RAI response			4/21/2004				
			NRC SER						6/16/2004	
			Submit supporting TSTF-476	7/15/2004	9/10/2004					TSTF in draft. BWR-4s can implement BPWS directly by referencing NRC SER.
NRC approve TSTF										
	Flock	Suppression Pool Cooling / RHR Operable Initiative	Submit Topical NEDO-33150			7/19/2004				
			NRC SER				7/1/2005			
	Flock	Alternate Source Term - generic gap release fraction for high-burnup fuel	Submit LTR		11/30/2004		8/1/2005			Review fee waiver will be requested.
			SER							

Document Number	PM	Title	Project Milestone	BWROG Dates			NRC Dates			COMMENTS
				Original Date	Expected Date	Actual Date	Original Date	Expected Date	Actual Date	
		Risk Informed Tech Specs (RITS)								
Initiative - 1	Hill	Modified End States	Pre-submittal meeting NEDC-32988, R2			RITSTF meetings Submitted on 1/8/01				
			RAIs			Response 10/26/2001			Provided 8/01	
			SER TSTF-423			Submitted 8/12/2003			9/27/2002	
			Guidance Document CLIIP		8/31/2004		4Q04			
Initiative - 4a	Hill	CIV AOT Extension	Pre-submittal meeting NEDC 33048			RITSTF meetings Submitted on 2/21/02				
			RAIs			Response 7/03			Provided 7/02	
			SER TSTF-454			Submitted 9/5/2003	12/31/2004	9/30/2004		
			Guidance CLIIP			7/30/2004	4Q04			
Initiative - 4b	Hill	Risk Informed AOTs with Backstop								Has been on hold for BWRs. Hope Creek has just volunteered as a pilot.
Initiative - 5b	Hill	Relocate Surveillance Test Interval to Licensee Control	Pre-submittal meeting	9/9/2004 RITSTF meeting						
			Position paper			6/31/2001			5/15/2003	NRC concern about legality of moving STIs
			Pilot plant LAR TSTF-425	6/9/2004	8/31/2004	6/15/2004				Waiting for NEI guidance document. Dependent on pilot plant review
			CLIIP							BWROG developing new submittal in conjunction with a new Initiative 4a.
Initiative - 6a	Hill	Modify LCO 3.0.3 to 24 Hours								
Initiative - 6b	Hill	Provide Conditions in the LCOs for those levels of degradation where no condition currently exists to preclude entry into LCO3.0.3.								No action for BWROG
Initiative - 6c	Hill	Provide specific times in the LCO for those conditions that require entry into LCO 3.0.3 immediately.								No action for BWROG
Initiative - 7a	Hill	Snubbers								No action for BWROG
Initiative - 7a	Hill	Allowance for Non-Technical Specification Barrier Degradation on Supported System OPERABILITY								No action for BWROG
Initiative - 7b	Hill	Define Not Operable/Functional								No action for BWROG
Initiative - 8	Hill	Eliminate TS that do not Meet Criteria								Low Priority
Risk Informed Activities										
Option 3 LTR	Hill	Elimination of LOOP Requirements with LB LOCA	Pre-submittal meetings NEDC-30148	12/31/2003	2/28/2004	2/27/2003 7/24/2003 4/27/2004				Exemption is required.
			RAIs				2Q05			
			SER				2Q06			