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DATE OF MEETING

12/10/03

The attached document(s), which was/were handed out in this meeting, is/are to be placed in the public domain as soon as possible. The minutes of the meeting will be issued in the near future. Following are administrative details regarding this meeting:

Docket Number(s)

691

Plant/Facility Name

BWR Owners Group

TAC Number(s) (if available)

Reference Meeting Notice

ML 033230307

Purpose of Meeting
(copy from meeting notice)Senior Management
status meeting.

NAME OF PERSON WHO ISSUED MEETING NOTICE

Alan Wang

TITLE

PM

OFFICE

NRR

DIVISION

DLPM

BRANCH

PD IV-2

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**NRC/BWR Owners' Group
Management Meeting – December 10, 2003
Agenda**

8:30 Opening Remarks

BWROG/NRC

Joint Submittal Planning

- Review NRC/BWROG submittal integrated schedule
 - TSTFs affecting BWRs
 - Bank Position Withdrawal Sequence
 - Decoupling of LOOP/LOCA-Option 3

**BWROG/NRC
NRC STATUS
BWROG/NRC**

Stability / Detect and Suppress

BWROG

- Status presentation--an overview of recent meetings and happenings

Steam Dryer Integrity

BWROG

- Status presentation--an overview of recent meetings and happenings

Generic Safety Issue – 189

BWROG

- Station Black Out Hydrogen Igniter Operability

Alternative Source Terms

BWROG

- Use of Standby Liquid Control

OTHER BWROG/NRC STATUS ISSUES

- NRC issues affecting BWRs
 - Use of Standby Liquid Control in Alternate Source Term applications
 - GSI-80, Pipe Break Effects on CRD Hydraulic Line
 - GSI-193, ECCS Pump Gas Entrainment
 - Others

BWROG/NRC

11:30 Adjourn

BWR Owners' Group Licensing Topical Report / Other Submittals of BWROG Interest											
INTEGRATED BWROG SUBMITTAL - NRC REVIEW SCHEDULE											
Document Number	Title	LTR to NRC	OG Tech Spec Traveller Number	RAI Date	RAI Response Due Date	TSTF Number	TSTF TO NRC	NRC APPROVAL TOPICAL/TSTF	CLIIP	CLIIP ISSUE DATE	COMMENTS
TSTF-343	Containment Structural Integrity (All Owners Groups)					TSTF-343			YES		
TSTF-357-R1	Revision to TS 2.1.1.2, MCPR Safety Limit		BWROG-66			TSTF-357-R1	4/7/03	2Q04 E	YES		EFFICIENCY: will significantly reduce plant specific reviews
TSTF-448	Control Room Habitability (All Owners Groups)		BWOG-111			TSTF-448	8/19/03	1Q04 E	YES	1Q04 E	
TSTF-459	Eliminate the requirement to have one RHR Shutdown Cooling System in operation		BWROG-37, R1			TSTF-459	9/19/03	3Q04 E	YES		
TSTF-460	Control Rod Scram Time Frequency (120 days - > 200 days)		BWROG-90, R1			TSTF-460	9/7/03	3Q04 E	YES		
TSTF-465	Addition of Time performance Surveillance Requirement (SR) note to Source Range Monitor (SRM) SRs		BWROG-81, R1			TSTF-465	9/18/03	3Q04 E			
	Joint Owners' Group MOV Response to GL 96-05 (Final Report)	2/28/04 E	NA			N/A	N/A	8/04(TOPICAL)E	NO	N/A	
	Containment Atmospheric Control Valves	1Q04 E							NO		
NEDO-33091	Improved BPWS Control Rod Insertion Process	6/03					1Q04 E	4Q04 E	NO	N/A	BWROG requests earlier review for Spring 2004 Outages
	Suppression Pool Cooling / RHR Operable Initiative	2Q04 E									
	Alternate Source Term - generic gap release fraction for high-burnup fuel	1Q04 E									
Risk Informed Tech Specs (RITS)											
Initiative - 1	Modified End States	1/5/01: NEDC 32988, R2	BWROG-87			TSTF-423	8/12/03	9/27/02 (Topical-SER) A 2/03 (NEDC 32988-A) 2Q04 (TSTF) E	YES	2Q04 E	CEOG TSTF-422 BWROG TSTF-423
Initiative - 4a	CIV AOT Extension	BWROG LTR 2/21/02A	BWROG-XX	4/23/03A	3Q03 A	TSTF-454	9/5/03	2Q03 (Topical SER) 2Q04 (TSTF) E	YES	2Q04 E	
Initiative - 4b	Risk Informed AOTs with Backstop	Position paper 10/12/01A, revised white paper 2/27/02A	On Hold for BWR's								NA for BWROG No pilot

BWR Owners' Group Licensing Topical Report / Other Submittals of BWROG Interest											
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Document Number	Title	LTR to NRC	OG Tech Spec Traveller Number	RAI Date	RAI Response Due Date	TSTF Number	TSTF TO NRC	NRC APPROVAL TOPICAL/TSTF	CLIP	CLIP ISSUE DATE	COMMENTS
Initiative - 5b	Relocate Surveillance Test Interval to Licensee Control	Position paper 6/01 A, revised position paper 1Q04E	BWROG-88	Comments on position paper 2Q04 E		TSTF-425	2Q04 E	4Q04 (TSTF) E 4Q04 (SER) E	YES	1Q05 E	BWROG lead. Exelon LAR submittal to NRC scheduled for 2/04.
Initiative - 6a	Modify LCO 3.0.3 to 24 Hours		On Hold for BWR's			N/A					On Hold for resolution of Initiative 6b and 6c to determine if Initiative is required.
Initiative - 6b	Provide Conditions in the LCOs for those levels of degradation where no condition currently exists to preclude entry into LCO3.0.3.		On Hold for BWR's								Based on CEOG work, may consider 6b approach using (A)(4) to minimize use of LCO 3.0.3.
Initiative - 6c	Provide specific times in the LCO for those conditions that require entry into LCO 3.0.3 immediately.		On Hold for BWR's			TSTF-426	4Q03 E	2Q04 (TSTF) E			TSTF to submit TSTF to NRC after receipt of NRC SER and receipt of information from CEOG.
Initiative - 7a	Snubbers		WOG-150			TSTF-372, R 3	11/17/03		YES		
Initiative - 7a	Allowance for Non-Technical Specification Barrier Degradation on Supported System OPERABILITY					TSTF-427	3/4/03		YES		
Initiative - 7b	Define Not Operable/Functional	NEI revised position paper to NRC 2Q03	NA						YES		
Initiative - 8	Eliminate TS-Not Meet Criteria	2005E White paper on method							YES		Low Priority
Risk Informed Activities											
	Option 3, Elimination of LOOP Requirements with LB LOCA	1Q04 E									Exemption may be required.

Stability Detect and Suppress Methodology

Presentation For
BWROG/NRC Management Meeting
Rockville, MD
December 10, 2003
Ken Putnam (NMC)

December 10, 2003

BWROG/NRC Management
Meeting

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Purpose of Presentation

- Communicate BWROG actions and positions
- Discuss OPRM Technical Specification

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August 15, 2003 NRC Meeting

- NRC agreed with plant specific approach
- NRC wanted:
 - Letter closing the Part 21 DIVOM issue
 - Letter recommending arming of OPRMs
- Both letters reviewed by Executives, Primary Representatives and Committee
- Both letters were transmitted to the NRC on September 30, 2003

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Future Committee Actions

- Develop plant-specific DIVOM procedure
- Support plant-specific DIVOM development for non-GE fuel vendors
- Plant-specific schedules to be developed and submitted to NRC

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OPRM Technical Specifications

- Requires "Alternate Method" if OPRM is inoperable
- Some plants may operate indefinitely with "Alternate Method"
- Some plants must restore operability within 120 days
- NRC Staff not granting current requests for use of alternate method beyond 120 days
- BWROG considering generic traveller to resolve issue

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Steam Dryer Integrity Committee

Presentation for
BWROG/NRC Management Meeting

December 10, 2003
Rockville, MD

Joe Conen (DTE Energy)

December 10, 2003

BWROG/NRC Management Meeting

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Steam Dryer Integrity

- ✱ Repairs to steam dryers is not a new BWR issue
- ✱ Dryer failures at Quad Cities (BWR 3) subsequent to extended power uprates
- ✱ GE SIL 644 and 644 supplement 1 provides inspection recommendations based on relative susceptibility of dryers

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Steam Dryer Integrity

- ✧ In June 2003, BWROG Executive Oversight Committee (EOC) directed that workscope be appropriately shared among BWROG, BWRVIP, and General Electric
- ✧ EOC directed that workscope cover broad dryer reliability and performance issues
 - ◆ Not limited to issues related to dryer damage experienced at QC2
- ✧ BWRVIP assigned lead responsibility

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Steam Dryer Integrity Summary of Key Design Factors

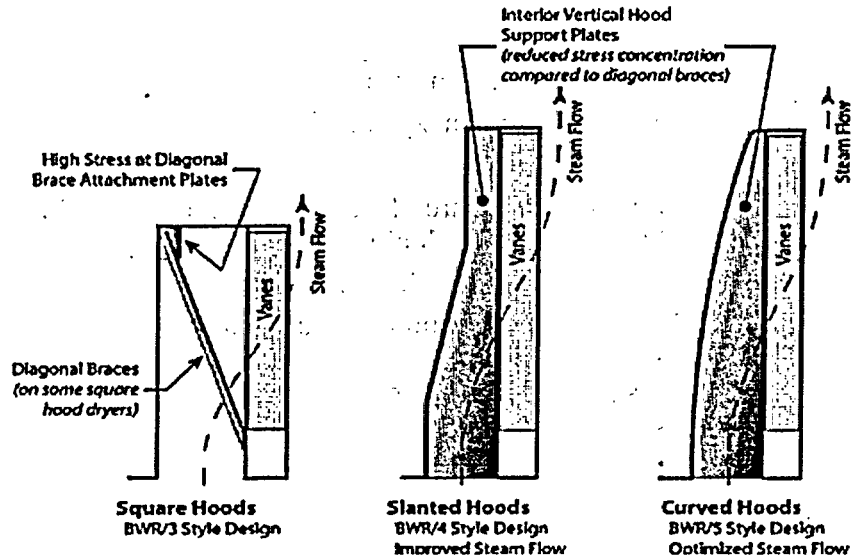
- ✧ BWR 3; square hood and internal braces
 - ◆ High stresses where braces attach to hood
 - ◆ Some BWR 3 dryers do not have internal braces
- ✧ BWR 4; slanted hoods, internal braces replaced with plates that reduce the maximum stress
- ✧ BWR 5 and later; curved hoods to optimize steam flow, retained the internal plates; even lower maximum stress
- ✧ Higher MSL velocities increase the amplitude of flow induced and acoustic load forcing functions that lead to high cycle fatigue

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Basic GE Steam Dryer Hood Types

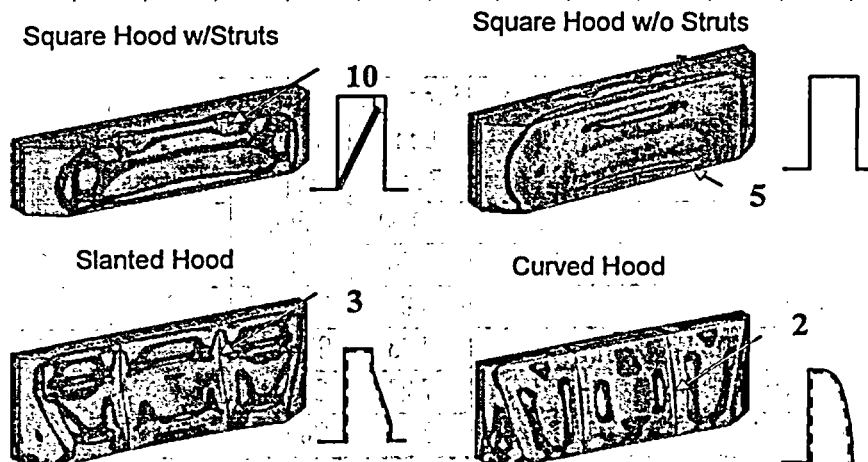


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Relative Stress on GE Steam Dryer Hoods



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GE Steam Dryer Screening Matrix

✱ Steam Velocity (Main Steam Lines)

- ◆ Pressure based on square of velocity
- ◆ Highest = 10
- ◆ Other plants square of velocity normalized to Quad Cities square of velocity
- ◆ Stress from Finite Element Analysis
- ◆ Based on uniform unit pressure loading
 - Square = 10
 - Square (w/o struts) = 5
 - Slanted = 3
 - Curved = 2

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GE Steam Dryer Screening Matrix

Example Results

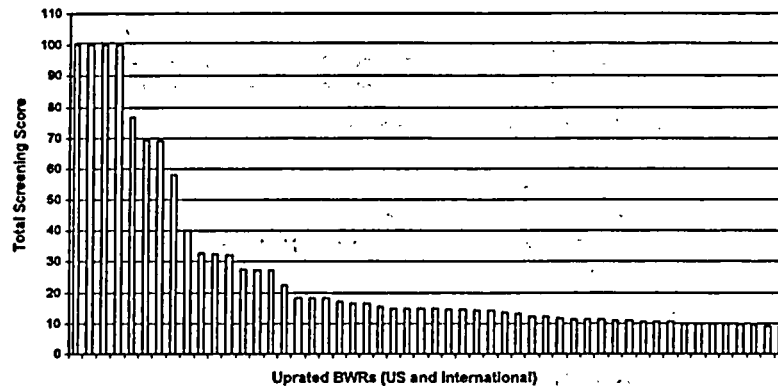
Plant	Average Flow Vel. / Line (ft/sec)	Pressure Load Score	Hood Type	Stress Score	Relative Score
Plant 4	202	10.00	Flat	10	100
Plant 5	168	6.90	Flat	10	69
Plant 17	141	4.87	Slanted	3	15
Plant 20	134	4.43	Slanted	3	13
Plant 22	172	7.23	Curved	2	14
Plant 14	181	8.03	Curved	2	16

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SCREENING MATRIX RESULTS



75% of uprated U.S. BWR dryer failure probabilities are less than 20% of highest screening matrix results

Steam Dryer Integrity Recent / Current Activities

- ✧ NRC questions summarized in letter to BWROG dated September 26, 2003
- ✧ BWRVIP/BWROG workscope discussed with NRC during November 4-5, 2003 BWRVIP meetings
- ✧ Formal BWROG response in preparation

BWR Extended Power Uprate Issues

BWROG/NRC Management
Meeting
December 10, 2003
Rockville, MD

December 10, 2003

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Extended Power Uprates

- ◆ EPUs Implemented at 11 BWRs
- ◆ EPUs Anticipated at 6 BWRs in the near term
- ◆ Approximately 100 uprates have been implemented in the industry
- ◆ Roughly 5% of nuclear capacity

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Implementation Challenges

- ◆ Steam Dryers
- ◆ Flow Induced Vibration

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Plant Safety

- ◆ Safety systems remain highly reliable
- ◆ Technical Specification
Surveillances and LCOs continue to be Met
- ◆ Principal safety barriers have not been challenged
- ◆ Maintenance Rule continues to manage risk
- ◆ While challenges have occurred, uprates are a proportionally small contributor to industry events

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Learning From Experience

- ◆ BWRVIP Steam Dryer Program
- ◆ INPO Workshops on power uprate
- ◆ Monthly utility EPU project manager conference calls to share lessons learned
- ◆ GE Self Assessment of EPU experience
- ◆ BWROG evaluating additional involvement

BWROG GSI-189 COMMITTEE

Presentation For
BWROG/NRC MANAGEMENT MEETING
December 10, 2003
Rockville, MD

December 10, 2003

BWROG/NRC Management Meeting

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BWROG GSI-189 COMMITTEE BACKGROUND

- Committee Formed to Address GSI-189 Impact on BWR Mark III Containment Owners.
- Focus of Effort is on Plant Differences which impact Benefits and Cost
- Reviewed NRC Benefits and Cost Analysis
- Results of Review Documented in Letter (BWROG – 03053).

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BWROG LETTER CONCLUSIONS

- Present Worth Calculated Benefits for Mean NUREG 1150 Case for MARK III Containment is \$10k.
- Total Benefits do not Support Proceeding with Plant Modifications for BWR Owners

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BWROG LETTER (CONT)

- BWR Emergency Operating Procedures (EOP) Restrict use of Hydrogen Igniters
 - > Hydrogen Analyzers needed to assure hydrogen concentration is within limits
 - > Hydrogen Analyzers will require support equipment
- Scope of Backup Power Modification needs to include Hydrogen Analyzers for BWR's
- Cost Estimate of \$320k based on Small Generator with no Support Equipment
- Cost of Modification will far exceed \$300k Estimate.

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BWROG LETTER (CONT)

- Increase in Plant Defense in Depth from Backup Power for Igniters is not supported by the Cost.
- Early Plant Emergency Response to SBO events needs to concentrate on Power restoration and Core Cooling.
- Power restoration for Hydrogen Igniters will be Assessed as part of Emergency Response.

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BWROG GSI-189 SUMMARY

- Request a review of the need for GSI-189 rule-making for Mark III Owners
- Benefits identified For Mark III Owners do not support Modifications
- Is there a role for BWROG in the resolution of issue?

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ALTERNATIVE SOURCE TERMS (AST)

PRESENTATION FOR
BWROG/NRC Management Meeting
December 10, 2003
Rockville, MD

JOE CONEN (DTE)
Vice Chairman, BWROG

December 10, 2003

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Recent AST Issue

✓ Issue: Crediting use of Standby Liquid Control (SLC) for Suppression Pool pH Control.

✓ Background:

- Suppression Pool credited to maintain iodine source terms in solution, reducing dose consequences. Pool pH of 7 or greater is needed to maintain iodine in solution.
- Post-LOCA radiolysis of chloride-bearing materials (cable jacketing, shielding, etc) can generate acids that reduce suppression pool pH over time.
- BWR SLC injection into pool can counteract this effect to maintain the necessary pH levels for iodine retention.

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Recent AST Issue

✓ Potential NRC Issues:

- SLC “credited” as containment atmosphere cleanup (GDC-41)
- GDC-41 requires that system have “suitable redundancy”; accomplish safety function assuming “single failure”
- SLC systems generally not single failure proof
 - Injection check valves, initiation switch
- SLC systems are generally not safety-related or subject to environmental qualification.

✓ NRC staff is working to consolidate its position regarding this SLC application.

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BWROG Interest

- ✓ SLC system is common to BWRs
- ✓ SLC reliability is recognized
 - Credited for ATWS mitigation [10 CFR 50.62 (c)(4)]
 - SLC is included in Standard Technical Specifications
- ✓ 7 BWRs currently have AST Applications in NRC review
 - Several applicants informed of NRC considerations regarding SLC
 - One BWR has submitted Exemption Request for GDC-41
 - Several earlier AST applications crediting SLC were approved
- ✓ AST application supports resolution of Control Room Habitability Issues and Power Uprate applications
- ✓ Is there a role for BWROG in the resolution of issue?

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Separation of LOOP and LOCA

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BWROG/NRC Management Meeting
December 10, 2003
Rockville, MD

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Separation of LOOP/LOCA

***The probability of a Loss of Offsite Power
concurrent with a large break Loss of
Coolant Accident is sufficiently remote
to be treated as a severe accident***

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Separation of LOOP/LOCA

- Scope of BWROG Topical Report reduces burden while maintaining or enhancing safety
 - Allow Warm-up of diesel prior to loading
 - Optimize Electrical Load Sequence
 - Start Diesel only when needed
 - Simplify Testing
 - MOV stroke times relaxed
 - Improve Suppression Pool Cooling
 - Eliminate Complex Loop select

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Separation of LOOP/LOCA

- Issues
 - Use of generic PRA model with site confirmation of applicability
 - Defense in depth confirmation using simplified code (MAAP) with confirmatory analysis (TRACG)

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Separation of LOOP/LOCA

- Projected Schedule

– BWROG Submittal	January 2004
– NRC Acceptance Review	February 2004
– Lead plant exemption request	March 2004
– NRC RAI's	April 2004
– BWROG response to RAI's	May 2004
– Draft SE completed	July 2004
– Final SE issued	August 2004

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