

November 20, 1985

DM B-016

LICENSEE: B&W Owners Group

SUBJECT: SUMMARY OF NOVEMBER 5, 1985 MEETING TO DISCUSS B&W OWNERS GROUP ACTIONS RELATIVE TO THE DAVIS-BESSE JUNE 9, 1985 EVENT

On November 5, 1985 the staff met with representatives of the B&W Owners Group (B&WOG) in Bethesda, Maryland. The purpose of the meeting, which was requested by the B&WOG, was to discuss the Action Plan developed by the Owners Group in response to the June 9, 1985 Davis-Besse loss of all feedwater event. Enclosure 1 is a list of the attendees. Enclosure 2 is a copy of the material presented by the B&WOG at the meeting.

In the opening remarks, the staff summarized the increased NRR staffing relative to B&W plants that will be implemented in the forthcoming reorganization; for example, two NRR project managers will be assigned to each B&W plant. The staff stressed that the B&W plants need more attention because of the relatively short steam generator dryout time for these plants. The staff stated that reducing challenges to the mitigation systems, configuration control, maintenance, and adequate staffing are areas which should be considered for improved performance. The B&WOG indicated that, on the other hand, there were operating performance records being set by B&W plants.

The B&WOG Executive Committee established a course of action in response to the Davis-Besse June 9, 1985 event to achieve the following objectives:

- ° Improve the safety and availability of the B&W units through close evaluation and implementation of lessons learned from the June 9 event.
- ° Establish a mechanism to ensure strong communication between all of the B&WOG utilities regarding the issues and concerns identified during the review of the Davis-Besse transient.
- ° Establish an executive level forum to identify, track, and ensure completion of plant specific and generic recommendations that result from the review of the Davis-Besse transient.
- ° Maintain a proactive relationship with the NRC.

A special Task Force was established, with representatives from each operating B&W reactor, to review the results of the investigation by Toledo Edison Company and by the NRC to determine if any of the issues raised are applicable to the other B&W plants. The Task Force Action Plan has 14 action item areas, as delineated in Enclosure 2, which the B&WOG noted are based on NUREG-1154 findings and the EDO's staff action plan.

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The NRC staff then discussed areas that it considered should be addressed with regard to B&W plants as a result of the Davis-Besse June 9 event and the October 2, 1985 Rancho Seco event.

In conclusion, the NRC staff indicated that it would like to interact with the B&WOG Task Force and Committees with respect to the Action Plan discussed at this meeting.

Walter A. Paulson

Walter A. Paulson, Project Manager
Operating Reactors Branch #4
Division of Licensing

Enclosures:
As Stated

cc w/enclosures:
See next page

WAP
ORB#4-01
WPaulson;cr
11/10/85

NOVEMBER 5, 1985 MEETING

B&W OWNERS GROUP

AND

NRC STAFF

ATTENDANCE LIST

<u>NAME</u>	<u>AFFILIATION</u>
H. Denton	NRR
W. A. Paulson	NRC/ORB#4
D. Crutchfield	NRC/NRR/DL
F. Schroeder	NRC/NRR
J. F. Stolz	NRC/NRR
F. J. Miraglia	NRC/NRR
R. H. Vollmer	NRC/IE
G. E. Edison	NRC/ORB#4
H. B. Tucker	Duke Power Co./BWO
N. Rutherford	Duke Power Co.
B. Simpson	Fla. Power Corp.
J. H. Taylor	B&W
C. McCracken	NRC/NRR/DL
R. Weller	NRC/TMPO

ENCLOSURE 2

Summary Presentation of the
B&WOG Action Plan in Response
to The Davis-Besse Event of
June 9, 1985

EXECUTIVE COMMITTEE RESPONSE

On September 12, the B&W Owners Group Executive Committee decided on a course of action in response to the Davis-Besse June 9 event to achieve the following objectives.

- Improve the safety and availability of the B&W units through close evaluation and implementation of lessons learned from the June 9 event.
- Establish a mechanism to ensure strong communication between all of the B&WOG utilities regarding the issues and concerns identified during the review of the Davis-Besse transient.
- Establish an executive level forum to identify, track, and ensure completion of plant specific and generic recommendations that result from the review of the Davis-Besse transient.
- Maintain a proactive relationship with the NRC.

To achieve the first three objectives, the B&WOG Executive Committee directed the Chairman of the B&WOG Steering Committee to form a special Task Force. The Task Force was to be comprised of representatives from each of the operating plants with a mission to thoroughly review the results of the investigation by Toledo Edison and the NRC to determine if any of the issues raised are applicable to the other B&W plants.

The fourth objective of the Executive Committee is being achieved through this presentation and presentations to be made later to the NRC staff.

TASK FORCE ORGANIZATION

- The Task Force organization meeting was held on September 25 and 26, 1985 in Toledo, Ohio.

Bert Simpson	- Florida Power Corp. (Acting Chairman)
Jim McWilliams	- Arkansas Power & Light
Neal Rutherford	- Duke Power Co.
G. Ridgeway	- Duke Power Co.
Jim Kraiker	- Florida Power Corp.
Jim P. Moore	- GPU Nuclear
Pierre Oubre'	- Sacramento Municipal Utility District
Bill Rowles	- Toledo Edison Co.
Bob Turner	- Babcock & Wilcox Co.

- The Task Force is developing an action plan to address generic and plant specific hardware issues and programmatic concerns identified by the NRC and Toledo Edison in their reviews of the June 9 event.
- The Task Force membership is comprised of representatives from each of the utilities with operating plants. Those utilities currently in the process of obtaining an operating license will address the Davis-Besse June 9 event in the normal OL process.

TASK FORCE REVIEW PROCESS

Documents reviewed by the Task Force to determine the issues and concerns were

- August 5, 1985 letter from Mr. Dircks (including NUREG-1154) describing actions related to Davis-Besse
- Toledo Edison's report entitled "Davis-Besse - Course of Action," Vols. 1 and 2, dated September 10, 1985
- August 14, 1985 letter from Mr. Denton to Mr. Joe Williams, Jr.

Four action levels were used to categorize each of the issues or concerns.

1. No Action Needed by B&WOG Members - issue is Davis-Besse Event applicable only.
2. Communication Among B&WOG Members - issue is generic to other plants and B&WOG will stimulate communication on key aspects and solutions to the issue.
3. B&WOG Monitor and Document Resolution of Issue - the issue will be reviewed and resolved by individual utilities, and the B&WOG will monitor the status of implementation of the resolution, document the implementation, and report on completion.
4. B&WOG Responsible for Resolution - an entity within the Task Force or other B&WOG Committees will be responsible for generically resolving the issue and reporting to the member utilities the recommendations as a result of this effort.

TASK FORCE ACTION PLAN

<u>Action Item No:</u>	<u>Title</u>	<u>References</u>		
		<u>D.B. Course of action</u>	<u>Mr. Dircks' Aug. 5 ltr.</u>	<u>Mr. Denton's Aug. 14 ltr.</u>
1	Root Cause Determination	II.C.1	1a,1b,8b, 9b,12b	III.A
<u>Objective:</u> Improve root cause determination and the effectiveness of corrective actions to reduce the number of plant trips and thereby reduce the challenges to safety systems.				
2	Review of Systems Performance and Testing	II.C.7 App. C.1.1 #27		
<u>Objective:</u> Identify applicable recommendations from the Davis-Besse systems review effort.				
3	Reliability of Selected Safety Related Valves	App. C.1.2 App. C.1.4	6c,6f	
<u>Objective:</u> Ensure that selected motor operated safety related valves are capable of performing their safety related function.				
4	Review of Control Room Improvement Program	II.C.5	10b	II.A.9
<u>Objective:</u> Confirm adequacy of CRDR relative to the Davis-Besse June 9, 1985 event.				
5	The Role of the Shift Technical Advisor (STA)	II.C.6	5	II.A.4
<u>Objective:</u> Exchange information on the availability and role of the STA.				

TASK FORCE ACTION PLAN (Cont'd)

Action Item No:	Title	References		
		D.B. Course of action	Mr. Dircks' Aug. 5 ltr.	Mr. Denton's Aug. 14 ltr.
6	Turbine Bypass Valve and Steam Trap Failures	App. C.1.1 #9A, 9B App. C.1.4		
<u>Objective:</u> Exchange and evaluate information on individual utility methods to improve the reliability of turbine bypass valves and steam traps.				
7	Reliability of the PORV	App. C.1.3 App. C.1.4	9c, 9d, 9e	II.A.8
<u>Objective:</u> Determine if additional actions are needed regarding the reliability of PORVs.				
8	Evaluation of AFW System Reliability	App. C.1.1 #1A, 1B, 1C App. C.1.1 #10 App. C.1.4 App. C.2.3 App. C.7.1	6d, 6f, 6g 8c, 8d, 8e, 8f	II.A.5, II.A.7, II.B.1, II.B.2
<u>Objective:</u> Review AFW system and identify any changes needed to preclude these problems at other B&WOG plants.				
9	Review of Transient Analysis Results	App. C.3.1 II.C.3	2	II.A.1
<u>Objective:</u> Evaluate the applicability of the Davis-Besse RELAP-5 model and method of analysis to a LOFW calculation in a lowered loop plant.				
10	Actions Related to SFRCS	App. C.1.1 #5, 6, 7 App. C.2.2	3, 10a	II.A.2
<u>Objective:</u> Evaluate the applicability of the Toledo Edison actions to systems performing SFRCS type functions.				

TASK FORCE ACTION PLAN (Cont'd)

Action Item No:	Title	References		
		D.B. Course of action	Mr. Dircks' Aug. 5 ltr,	Mr. Denton's Aug. 14 ltr.
11	Effect of Physical Security and Administrative Restric- tions on Operations	App. C.4.2	4	II.A.3
<u>Objective:</u> Considering high and low probability events optimize methods used to prevent unauthorized or inadvertent operation of equipment.				
12	Actions Related to Operating Procedures and Training	App. C.4.1 II.C.4	6e,7b,7c 10c,13	II.A.12 II.B.1
<u>Objective:</u> Identify deficiencies in operations, training, and procedures to respond to events similar to the June 9, 1985 event.				
13	ICS Module Maintenance	App. C.1.1 #16		
<u>Objective:</u> Ensure that lessons learned from the Davis-Besse event of June 9, 1985 are incorpor- ated as applicable into ICS preventative maintenance procedures at the other B&WOG member plants.				
14	Reducing Feedwater Initiated Trips		8c	II.A.7
<u>Objective:</u> 1. Reduce the challenges to safety systems by focusing on prevention of feedwater transients.				
2. Improve availability of B&WOG member plants.				

EXAMPLES OF ACTION ITEMS

Four examples of the items in the B&WOG 1154 Task Force Action Plan are presented to demonstrate the actions to be taken.

- Root Cause Determination
- Actions Related to SFRCS
- Reducing Feedwater Initiated Trips
- Reliability of Selected Safety Related Valves

B&W Owners Group 1154 Task Force Action Plan

Action Item No: 1

Title: Root Cause Determination

Statement of Concern: Analyses of equipment failures and system transients are not always sufficient to initiate appropriate corrective action to prevent recurrence.

Objective: Improve root cause determination and the effectiveness of corrective actions to reduce the number of plant trips, and thereby reduce the challenges to safety systems.

<u>Working Plan Action</u>	<u>Responsibility</u>	<u>Scheduled Completion</u>	<u>Status/Comments</u>
1. Provide descriptions of root cause determination and correction methods in current use.	Each Utility	JAN 1	Provide letter report to 1154 T.F.
2. Review root cause determination methods used by B&WOG members.	1154 T.F.	FEB 1	
3. Solicit input from INPO regarding root cause determination methods.	1154 T.F.	FEB 1	
4. Identify the essential elements of effective root cause determination methods and provide guidance to B&WOG members.	1154 T.F.	MAY 1	

References:

DB Course of Action	Mr. Dircks' letter of August 5, 1985	Mr. Denton's letter of August 14, 1985
II.C.1	1a, 6b, 8b, 9b, 12b	III.A

B&W Owners Group 1154 Task Force Action Plan

Action Item No: 10

Title: Actions Related to SFRCS

Statement of Concern: The adequacy of the design and operation of systems performing similar functions to the Davis-Besse SFRCS.

Objective: Evaluate the applicability of the Toledo Edison actions to systems performing SFRCS type functions.

<u>Working Plan Action</u>	<u>Responsibility</u>	<u>Scheduled Completion</u>	<u>Status/Comments</u>
1. Review and confirm design information compiled on the systems at all other plants which perform the functions of the DB-SFRCS.	B&WOG I&C Working Group	DEC 15	Letter report to 1154 T.F.
2. Compare changes made by TED to these systems to determine if any functional changes are appropriate in other plants.	B&WOG I&C Working Group	JAN 15	Letter report to 1154 T.F.
3. Review operating records for spurious trips and half-trips of systems performing functions similar to the DB-SFRCS. Determine the cause of the trips and half-trips. a) Address the effects of main steam pressure oscillations following turbine trip on the output of sensors connected to the secondary side of the OTSGs and the main steam lines. b) Address the lack of seal-in on a safety related actuation signals (for SFRCS similar functions) such that the actuation may not go to completion, and the plant may be left in an unpredicted and unanalyzed condition.	Each Utility	FEB 15	Letter report to 1154 T.F.
4. Review DB evaluation of root causes for spurious SFRCS trips and compare to item 3 results.	Each Utility	FEB 15	Letter report to 1154 T.F.
5. Review letter reports and determine if further action is needed.	1154 T.F.	MAR 15	

References:

DB Course of Action	Mr. Dircks' letter of August 5, 1985	Mr. Denton's letter of August 14, 1985
App. C.1.1	3,10a	11.A.2
#5,6,7		
App. C.2.2		

B&W Owners Group 1154 Task Force Action Plan

Action Item No: 14

Title: Reducing Feedwater Initiated Trips

Statement of Concern: Feedwater transients resulting in plant trips are occurring too frequently.

Objective: 1. Reduce challenges to safety systems by focusing on prevention of feedwater transients.

2. Improve availability of B&WOG member plants.

<u>Working Plan Action</u>	<u>Responsibility</u>	<u>Scheduled Completion</u>	<u>Status/Comments</u>
1. Review 1984-85 experience on feedwater transients for adequacy of corrective actions.	Steering Committee	FEB 15	
2. Re-assess the scope and priority of existing B&WOG and utility projects.	Steering Committee	JAN 15	
3. Consistent with overall NUMARC scram reduction goals and based on findings of actions 1 and 2 develop a plan for reducing scrams caused by feedwater transients.	Steering Committee	MAR 15	

References:

<u>DB Course</u>	<u>Mr. Dircks' letter</u>	<u>Mr. Denton's letter</u>
<u>of Action</u>	<u>of August 5, 1985</u>	<u>of August 14, 1985</u>
	8c	11.A.7

B&W Owners Group 1154 Task Force Action Plan

Action Item No: 3

Title: Reliability of Selected Safety Related Valves

Statement of Concern: Adequacy of maintenance, testing and operability checks of selected motor operated safety related valves.

Objective: Ensure that selected motor operated safety related valves are capable of performing their safety related function.

<u>Working Plan Action</u>	<u>Responsibility</u>	<u>Scheduled Completion</u>	<u>Status/Comments</u>
1. Evaluate adequacy of maintenance, testing and operability checks for motor operated HPI and AFW injection valves and AFPT steam supply valves which must stroke to perform a safety function.	Each Utility	JAN 15	Provide a letter report to 1154 T.F.
2. Review DB course of action report, test results, and corrective actions for applicability to each plant.	1154 T.F.	FEB 15	
3. Using Toledo Edison recommendations and results of utility reviews, develop a list of recommendations for addressing generic concerns.	1154 T.F.	MAR 15	
4. B&WOG will initiate discussions with other owners groups and industry organizations to investigate the maintenance, testing, and setting of motor operated valves.	1154 T.F.	Continuing Effort	B&WOG will initiate a follow-up effort in conjunction with other Owners Groups and Industry organizations.

References:

DB Course of Action	Mr. Dircks' letter of August 5, 1985	Mr. Denton's letter of August 14, 1985
App. C.1.2	6c, 6f	
App. C.1.4		

ACTION PLAN SCHEDULE

- Finalize Action Plan.....November 30, 1985
- Presentation to Mr. Denton on B&WOG
1154 Task Force Action Plan.....November 5, 1985
- Complete Identified Action Plan work.....June 1986

CONCLUSIONS

The B&W Owners Group has concluded that the Action Plan developed by the 1154 Task Force clearly demonstrates a proactive and aggressive approach aimed at enhancing the safety and availability of the B&W operating units.

It is further concluded that the implementation of this action plan will substantially reduce the likelihood that an event similar to the one that occurred at Davis-Besse on June 9, 1985 will not occur at another B&W unit.

ENCLOSURE 3

HIGHLIGHTS FOR B&WOG MEETING

10/5/85

Background: Consider Davis-Besse 6/9/85 Event and Rancho Seco 10/2/85 Event and Evaluate Loss of All Feedwater Event Resulting in Core Melt.

I. Expand Program to Evaluate/Improve Feedwater Reliability

A. Main Feedwater

- o Reduce Challenges to AFW, i.e., transients
 - ICS/SG trip limits and setpoints
 - Failure experience feedback
- o Evaluate Recovery of MFW as Alternative to Failed AFW

B. Auxiliary Feedwater - Initiate Program to Evaluate/Improve Reliability

- o Auto initiation of Flow to S/G
 - Signal (safety grade, eliminate CCF modes, parameters sensed)
 - Valves and pumps, etc.
- o Control of Flow to S/G (Safety Grade)
 - Need FMEA, ICS/SFRCS
 - Effects of NNI
 - Evaluate Provisions to Auto-isolate SGs from AFW
- o II.E.1.1 and II.E.1.2 completion of implementation
- o SRP 10.4.9 Reliability Goals
 - $P_f < 10^{-4}$
 - Diversity
 - Evaluate unavailability, Design Reliability (configurations) vs. Operational Reliability (operating data)
- o Recovery of Failed AFW

II. Evaluate Need for Enhancement of Bleed and Feed Capability

A. HPI at Reactor Operating Pressure

- B. Capacity to Depressurize Primary System (PORV, other) to HPI Capability
- Adequacy of test programs

C. Criteria/Procedures to Initiate

III. Adequacy of existing maintenance programs and their impact on operational reliability of safety-related systems.

- o Basis for Adjustment of safety-related valve settings, e.g., torque switch bypass

MEETING SUMMARY DISTRIBUTION

Licensee: B&W Owners Group

*Copies also sent to those people on service (cc) list for subject plant(s).

Docket File

NRC PDR

L PDR

ORB#4 Rdg

Project Manager - WPaulson

JStolz

BGrimes (Emerg. Preparedness only)

OELD

EJordan, JE

ACRS-10

NRC Meeting Participants:

HDenton

DCrutchfield

FSchroeder

JStolz

FMiraglia

RVollmer

GE Edison

CMcCracken

RWeller