

April 29, 2004

MEMORANDUM TO: Davis-Besse Oversight Panel

FROM: John A. Grobe, Chairman, Davis-Besse Oversight Panel */RA/*

SUBJECT: MINUTES OF INTERNAL MEETING OF THE DAVIS-BESSE
OVERSIGHT PANEL

The implementation of the IMC 0350 process for the Davis-Besse Nuclear Power Station was announced on April 29, 2002. An internal panel meeting was held on February 13, 2004. Attached for your information are the minutes from the internal meeting of the Davis-Besse Oversight Panel, the approved RAM Closure Forms, and the "Open" Action Items List.

Attachments: As stated

cc w/att: D. Weaver, OEDO
J. Caldwell, RIII
G. Grant, RIII
S. Reynolds, DRP
B. Clayton, EICS
DB0350

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MEETING MINUTES: Internal IMC 0350 Oversight Panel Meeting
Davis-Besse Nuclear Power Station

DATE: February 13, 2004

TIME: 7:00 a.m. Central

ATTENDEES:

J. Grobe	W. Ruland	S. Thomas
C. Lipa	A. Mendiola	R. Baker
D. Passehl	J. Hopkins	J. Jacobson
D. Hills	J. Stang	

Agenda Items:

1. Discuss/Approve Today's Agenda

The Panel approved the agenda, but modified the order of presentations. **THE APPROVED AGENDA REFLECTS THE ORDER LISTED IN THESE MINUTES.**

2. Brief Panel on Public Restart Meeting

J. Grobe provided the Panel a summary brief on the public meeting with the licensee to discuss the plant's readiness for restart. The meeting was very interactive. The NRC received the licensee's request for restart and the staff communicated that the 0350 process continues. The NRC stated that the Oversight Panel was not ready to authorize restart and that the Panel had outstanding issues that remain to be resolved.

A public meeting to discuss the preliminary findings of the Followup Restart Readiness Assessment Team Inspection and the Followup Management and Human Performance inspection was held earlier in the day at Camp Perry, prior to the evening restart meeting.

3. Discuss Plant Status and Inspector Insights and Emergent Issues List

S. Thomas led a discussion of plant status and inspector insights and emergent issues. The plant is in Mode 3 at Normal Operating Pressure/Normal Operating Temperature (2155 psig/532°F). The licensee expects to maintain the plant in these conditions until restart, and continues to work through the 27 remaining restart restraints items. The X01 Startup Transformer has been returned to service.

4. Discuss RAM Closure

R. Baker led a review of RAM closure items. To expedite closure of the remaining open RAM items, the Panel decided that the item owner should be present at the meeting to resolve questions that arise. **THE RESTART ACTION MATRIX ITEMS THAT THE PANEL APPROVED FOR CLOSURE ARE ATTACHED TO THESE MINUTES.**

5. Discuss CAL Close-Out Letter

J. Jacobson led a discussion on review of the CAL Close-Out letter. Draft closure summaries for CAL Item 3, based on review and approval from Panel meeting of 12/09/03, CAL Item 4, based on successful completion of the CRDM Insertion Time Testing, and CAL Item 5, based on completion of the public Restart meeting with the licensee, were presented for comment. The Panel provided several comments for CAL Items 3 & 4, which J. Jacobson will incorporate for approval at the next Panel meeting. The Panel decided to wait for the licensee's pending revision to the Operational Improvement Plan to be issued and reviewed prior to approving CAL Item 5 for closure.

6. Discuss Review of the HPI Pump Minimum Recirculation Flow Issue

D. Hills briefed the Panel on the licensee's response to the HPI Pump Minimum Recirculation Flow Issue. The response has been received and is being reviewed by the region. Once the review is complete, the inspectors will brief the Panel on closure of RAM Item URI-24. The Panel acknowledged deferral of Restart Checklist Item 2.e until RAM Item URI-24 is resolved.

7. Discuss "Hot List" Actions Required to Support a Restart Decision

C. Lipa briefed the Panel on the "Hot List" which will be used to focus attention on key items that are required to support deliberation on a restart decision. The Panel discussed open items from the Process Plan, Punchlist and Open Action Items. The Panel concurred with consolidating these updates through use of the Hot List, and R. Baker took action to update the reference documents with comments from the Panel's discussion.

THE UPDATED "OPEN" ACTION ITEMS LIST IS ATTACHED TO THESE MINUTES.

8. Review Restart Checklist Item 7.a, "Confirmatory Action Letter Completion" for Closure

The Panel decided that this item will be reviewed for closure following review of the licensee's pending revision to the Operational Improvement Plan.

9. Review Restart Checklist Items 5.b, "Systems Readiness for Restart," and 5.c, "Operations Readiness for Restart" for Closure

D. Passehl is developing the briefing papers summarizing the basis for closure of Restart Checklist Item 5.b, "Systems Readiness for Restart," and 5.c, "Operations Readiness for Restart." D. Passehl will present the drafts for review at the next Panel meeting.

10. Discuss Documents Supporting Restart Deliberations

J. Grobe led a discussion on the required actions and timeline to efficiently finalize the four key documents resulting from the Panel's restart deliberations. The four key documents are 1) the Order and Transmittal Letter, 2) the Panel's Restart Recommendation Memorandum, 3) the Restart Approval Letter, and 4) the Inspection Schedule Letter. To ensure clear control of revisions, each document was assigned an owner to whom any revision comments will be directed, and each revision will contain the date and time of the revision to help facilitate Panel reviews. The Panel decided to

have the document owners incorporate all comments received thus far into final draft revision of the documents and present the documents to Panel for review next week.

11. Discuss Update Milestones and Commitments

The Panel reviewed and discussed upcoming milestones and commitments.

12. Discuss Key Items Scheduled for the Next Panel Meetings

C. Lipa led a discussion on the key items scheduled for Panel meetings next week which impact deliberations on a restart decision.

RAM Items Approved for Closure at Panel

February 13, 2004

RAM Item No. - LER-08

Closed: Y

Description of Issue - This pertains to LER 05000346/2002-08-00, and -01, Containment Air Coolers Collective Significance of Degraded Conditions. Following unit shutdown in 2002, various degraded conditions were identified associated with the CACs, which were documented in several CRs. The issues were related to thermal performance degradation, and structural issues related to seismic adequacy, boric acid corrosion, and post accident thermal stress.

Description of Resolution - The LER documented thermal performance issues caused by cooling coil fouling conditions on the air (cooling fin) side, and water (inside tube) side which were identified. Additionally, foreign material (plywood) was found in the SW supply piping to CAC #2. In addition, two 10 CFR Part 21 reports were issued by the CAC control vendor and the motor vendor. The overall corrective action to resolve the physical degradation of the CAC units was the refurbishment of the units prior to plant restart. New CAC units were installed.

Programmatic improvements in reactor coolant system leakage control and boric acid corrosion management were implemented to prevent recurrence. The corrective actions were evaluated as acceptable for restart purposes.

During review of the LER, the team identified several concerns with the licensee's evaluation. Because of the overall deficiencies in the licensee's evaluation, especially in regard to the thermal performance issue, the team was unable to agree with the licensee's conclusion that the CACs were operable during previous cycles.

The LER will remain open pending further review of past CAC degradation; specifically the extent of degradation and effect on the past safety function of the CACs. The additional reviews will provide information as to the ability of the CACs to provide cooling for the PORVs during feed and bleed operations during previous operating cycles.

Reference Material - NRC Inspection Report 50-346/03-10, Section 4OA6(b).b.1 (ADAMS Accession No. ml040680070) and LER 05000346/2002-008-00 and -01.

RAM Item No. - LER-10

Closed: Y

Description of Issue - LER-03-001, Inability of Air-Operated Valves to Function During Design Basis Conditions

Description of Resolution - On January 30, 2002, with the reactor defueled, the licensee identified that several air operated valves (AOV) had negative operating margins and subsequently determined that eight valves were not capable of performing their safety functions for all required conditions as discussed below.

Valve MU3 is an air operated isolation valve which is normally open to allow letdown flow to pass from the letdown coolers to the purification demineralizers. Upon loss of instrument air, this valve is designed to fail closed. However, the licensee identified that upon loss of instrument air the spring force alone was not sufficient to close valve MU3 against maximum reactor coolant system differential pressure. The licensee implemented ECR 03-0111-00 to replace the valve actuator with a new larger

piston actuator and nitrogen bottles which would ensure this valve shuts with design differential pressure.

Valve CC1495 is an air operated valve which is normally open to provide cooling water to non-essential components such as the spent fuel pool heat exchangers or reactor coolant pump seal return coolers. This valve is designed to close on a safety features actuation system(SFAS) Level 3 signal or a low level in the component cooling water (CCW) surge tank. However, the licensee identified that upon loss of instrument air, the air accumulator was undersized and would not ensure that the valve would fully close. The licensee implemented ECR 03-0136-00 to install a larger air accumulator associated with the actuator for valve CC1495.

Service water isolation valves SW1356, SW1357, and SW1358, are normally open to provide a flow path for SW to the containment air coolers (CACs). During normal and emergency operation two of the three CACs are in service and the remaining CAC will have its SW isolation valve closed to support containment isolation. However, with a loss of instrument air, the air accumulators for these valves did not have sufficient capacity to hold the valves shut for up to 30 days to support containment isolation. The licensee implemented ECR 02-0836 to install larger air accumulators.

Service water isolation valves SW1424, SW1429 and SW1434 serve as temperature control valves for by throttling SW flow through the CCW heat exchangers. During emergency operation, these valves go to their full open position upon receipt of an SFAS Level 2 signal to maximize SW flow through the CCW heat exchangers. These valves are required to fail open upon loss of instrument air. These valves have spring air cylinder actuators which require the presence of air to position the valve. Upon loss of instrument air, the licensee identified that these valves would not fully open. The licensee performed a dynamic differential pressure test (without instrument air) for valve SW 1434 and the valve only opened to 28 degrees from fully shut. The licensee initiated ECR 03-0299-00 to install an air accumulator for each valve, to provide safety related air during accident conditions.

The licensee implemented the corrective actions for each of the inoperable valves as stated above to restore these systems to an operable condition. This LER will remain open pending completion of past operability reviews.

Reference Material - The Mechanical Engineering Branch performed an in-office review in accordance with inspection procedure 71153 focused on evaluating the proposed licensee corrective actions documented in the LER and associated condition reports. Based upon this review, the Mechanical Engineering Branch will provide a report input to close this LER in an integrated resident Inspection Report after the SRA completes a review of the licensee's risk evaluation.

RAM Item No. - LER-12 and URI-25

Closed: Y

Description of Issue - Requests for Issues: During the SSDI inspection in 2002, URI-25, Some Small Break Loss of Coolant Accident Sizes Not Analyzed, was identified. Specifically, it addressed concerns with the HPI pump minimum flow and deadhead (lack of flow) conditions (URI-25 and LER-12).

Description of Resolution - Following the questioning during the 2002 NRC SSDI inspection of a potential deadhead condition of the HPI pumps and the adequacy of thermal protection (minimum flow) for the pumps, the licensee performed a study, 86-5022260-00, to determine whether HPI pump operability during post-LOCA sump recirculation could be assured for all break sizes and transient scenarios.

This study identified a range of small break sizes from 0.00206 ft² (leak-to-LOCA transition area) to 0.0045 ft², which would result in RCS re-pressurization cycles that could continue following HPI pump

realignment to the containment emergency sump and closure of the minimum flow recirculation valves. The study concluded that for this newly analyzed range of break sizes, past operability of the HPI pumps was a concern. This was because the re-pressurization cycles would result in a higher containment pressure than the shut-off head of the HPI pumps, resulting in pump dead heading (no flow), when HPI pump suction was from the sump.

Based on the results of the evaluation, several corrective actions were implemented. An additional minimum flow recirculation line was installed during RFO 13 for each HPI pump. For one pump, the line tapped off the previously existing minimum flow line and for the other a completely new recirculation line was installed. For both pumps, the new lines contained two isolation valves and a non-cavitating pressure breakdown orifice and connected to the LPI pump discharge upstream of its respective decay heat cooler for the corresponding safety train. The modification design specified a minimum 35 gpm flow rate (same as that specified for the original recirculation line) for pump protection when aligned to the emergency sump in "piggyback" operation with the DHR pumps. In this lineup, the decay heat coolers would provide cooling for the respective HPI Pumps without loss of sump inventory. Inspector concerns regarding the minimum 35 gpm flow rate were evaluated and resolved through URI-24 (see associated RAM closure form.)

Operator action would be required to open the valves on these additional recirculation lines prior to pump realignment from the BWST to the emergency sump. Because the postulated transient was a very slow developing scenario, the team determined that ample time would be available for operators to take this action. Additionally, the team confirmed that this action did not replace any existing automatic action. The licensee revised the emergency procedures to provide direction on establishing the HPI alternate minimum recirculation flowpath and provided training to the operators on its use.

These corrective actions were sufficient to resolve the concern addressed in the LER. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, having very low safety significance (Green).

Reference Material - NRC Inspection Report 05000346/2003010, Sections 4OA3(3)b.1 and 4OA3.(6)b.2 (ADAMS Accession No. ml040680070); URI 05000346/2002014-01o; and LER 05000346/2003-003-00 and -01.

RAM Item No. - LER-15

Closed: Y

Description of Issue - LER 50-346-2003-006; Potential Errors in Analysis of Block Walls Regarding HELB Differential Pressure and Seismic Events; dated July 21, 2003; Event Date May 21, 2003. The licensee, in the process of reviewing calculations associated with Davis Besse Auxiliary Building Structural Analysis, noted that a pressure caused by a high energy line break in Room 227 (see attached diagram labeled figure 5 - Room 227 is a corridor/passageway on the 565' elevation of the Auxiliary Building) would also cause a pressure surge in the connected and right angle corridor labeled 241. That pressure surge, in combination with design seismic loads could cause failure of Wall 2257. Wall 2257 is a wall that is part of the partition that forms Room 240 which is the Boric Acid Addition Tank Room. Failure of Wall 2257 could adversely impact 2 Component Cooling Water Valves, Service Water piping to Containment Air Cooler 1, and the Boric Acid Addition System thus affecting systems required by Technical Specifications.

Description of Resolution - Under design change ECR 03-0297, the licensee initiated and implemented in August, 2003, a design that modified door 209 to open with a differential pressure low

enough to preclude Wall 2257 failure. The door modification allows pressure in Room/Corridor 241 to be vented to Room 240 thus lowering the differential pressure across Wall 2257.

The inspectors have reviewed the operability evaluation and corrective actions, associated with CR 03-0397, that pertain to Wall 2257 and have physically verified that Door 209 has been modified to open in the event of a pressure spike in Corridor 241. From those reviews the inspectors conclude that the licensee can consider Wall 2257 operable and that remaining corrective actions are adequately scheduled for completion..

Reference Material - LER 50-346-2003-006; CR 03-02910; Root Cause Analysis Report for CR 03-02910 (Analysis of Masonry Walls) and CR 03-03937 (Masonry Wall Failure); Wall and Room diagram from Root Cause Analysis Report Masonry Wall.

RAM Item No. - NCV-10

Closed: Y

Description of Issue - An NCV in IR 05000346/2002014 was issued during SSDI because there was no analytical basis for setpoint to swap service water system discharge path. The corrective actions taken by the licensee failed to correct the originally identified condition.

Description of Resolution - During the CATI, the team reviewed the evaluation and corrective actions taken for this NCV. The team identified a number of errors and issue with the analyses performed by the licensee. The team determined that the revised evaluation did not address the violation.

The licensee implemented compensatory measure to ensure that the service water supplied to the safety related loads is not compromised. The NRC staff concludes that this action is sufficient for restart.

A violation of 10 CFR Part 50, Appendix B, Criterion III, was issued in NRC Inspection Report 05000346/2003010 since the licensee had not corrected a previous violation and was relying on non-safety-related equipment to perform a safety function under design bases conditions.

Reference Material - NRC Inspection Report 05000346/2003010, Section 4OA3(3)b.11 (ADAMS Accession No. ml040680070) and NCV 05000346/2002014-01v.

RAM Item No. - SUP-37

Closed: Y

Description of Issue - IP 95003; 02.03.c.2.c: Review specific problem areas and issues identified by inspections to determine if concerns exist in communications.

Description of Resolution - Communication within the licensee's organization, both vertically and horizontally were challenged during the outage. These challenges primarily existed at the manager/first-line supervisor interface. The licensee implemented several initiatives to improve overall communications and alignment at the site. These included:

- frequent meetings between the FENOC Chief Operating Office and small groups of employees (4C Meetings);
- daily status e-mail from the Site Vice-President to the site staff;
- several all-hands meetings;
- timely site announcements on important issues; and

- preparing the site On-Line newsletter.

One particularly effective example included operations' recent practice of communicating performance standards and expectations internally and externally to other departments. Additionally, the added focus on developing a realistic, resource loaded work schedule, has increased staff confidence in understanding managements work expectations. These actions, along with organizational changes, have been acceptable in improving communications site wide.

Reference Material - none

RAM Item No. - URI-26

Closed: Y

Description of Issue - The licensee failed to perform an adequate SW flow analysis.

Description of Resolution - The licensee entered the issue into its corrective action program and performed the necessary calculations. The licensee initiated CR 03-03977 to revise the calculations. The team reviewed these calculations, evaluated the issue and identified several errors in the calculations that did not affect the design function of the system. The NRC staff concluded that there are no outstanding concerns for restart. NCV of 10 CFR Part 50, Appendix B, Criterion III, having very low safety significance (Green) was issued.

Reference Material - NRC Inspection Report 05000346/2003010 (ADAMS Accession No. ml040680070) and URI 05000346/2002014-01p.

RAM Item No. - URI-27

Closed: Y

Description of Issue - The licensee failed to perform an adequate SW thermal analysis.

Description of Resolution - The licensee entered the issue into its corrective action program and performed the necessary calculations. The licensee initiated CR 03-03977 to revise the calculations. The team reviewed these calculations, evaluated the issue and identified several errors in the calculations that did not affect the design function of the system. The NRC staff concluded that there are no outstanding concerns for restart. NCV of 10 CFR Part 50, Appendix B, Criterion III, having very low safety significance (Green) was issued.

Reference Material - NRC Inspection Report 05000346/2003010 (ADAMS Accession No. ml040680070) and URI 05000346/2002014-01q.

RAM Item No. - URI-37

Closed: Y

Description of Issue - Issue on whether stem-to-disc separation of SW valve SW-82 was credible and whether stem-to-disc separation was required to be assumed as part of a passive failure analysis.

Description of Resolution - The team determined that valve SW82 was a butterfly valve. Even if stem-to-disc separation occurred, it was extremely unlikely that flow would be blocked. Therefore, the

team determined that this failure mode was not credible and did not need to be considered as part of a passive failure analysis. This item is closed.

Reference Material - NRC Inspection Report 05000346/2003010 (ADAMS Accession No. ml040680070) and URI 05000346/2002014-05.

RAM Item No. - URI-42

[See RAM Item No. L-90]

Closed: Y

Description of Issue - Inadequate Implementation of the Corrective Action Process Which Led to Not Identifying a Potentially Reportable Issue Regarding Containment Air Coolers

Description of Resolution - This issue was reviewed and LER 2002-008 was issued on December 31, 2002. NOP-LP-2001 was revised clarifying the requirement to perform a reportability review. A corrective action was initiated to review all significant Condition Reports issued from January 1, 2002, to November 13, 2002, to ensure adequacy of reportability reviews.

This item is closed. Also see related closure documentation for L-90 below. L-90 was previously closed as documented in Panel meetings on 10/9/03. However, the CATI also reviewed L-90 and provided closure documentation at that time since it was related to this URI.

Reference Material - See Reference Material cited for Closure of RAM Item L-90.

February 13, 2004

DAVIS-BESSE OVERSIGHT PANEL "OPEN" ACTION ITEM LIST				
Item Number	Action Item (Date generated)	Assigned to	Comments	Due Date
208	Evaluate the need to call back CI regarding Allegation RIII-2002-A-0177 (D-B) after the OI Investigation is complete (08/21)	D. Passehl	10/14-Investigation is still ongoing; 12/23-Discussed, awaiting DOJ Investigation.	TBD
224	Rewrite the proposed IN on TSP to be generic and reflect attainable plant conditions and what information should be disseminated to the industry concerning Boric Acid Corrosion Control Programs. (12/09)	D. Hills	12/15-Discussed, D. Hills is working; 12/23-Discussed, this issue will be discussed internally in RIII and brought to Panel on 1/06/03 for a final decision on how to proceed; 1/20-Discussed, revised IN is with Panel Chairman for review; 1/30-Discussed, Chairman's comments were sent to J. Lara.	02/15/04
228	Place all Email requests sent throughout Agency, responses received, and issue resolutions in ADAMS package for documentation. (12/16)	R. Baker	1/06-Discussed, will verify ADAMS package is in place to support collection of emails and responses-email requests will be resent due to small response to date; 1/30-Discussed, will verify and update Panel on 2/5/04; 2/3-Discussed, Lead changed, verified ADAMS package in place, coordinate with J. Shea and A. Mendiola that all emails included in ADAMS package.	02/20/04
234	Develop protocol paper for NRC representative on DOJ committee interface with 0350 Panel for updates. (01/06)	W. Ruland	10/15/04-Discussed, protocol paper regarding decision making being drafted as a letter from Sam Collins to Bruce Boger and includes criteria for Immediate Action; 1/20-Discussed, the draft has been sent to B. Boger for DOJ comments; 1/26-Discussed, B. Boger is reviewing with senior management; 2/3-Discussed, protocol paper in review by OGC.	02/20/04
242	Review MC 0350 and philosophy on which documentation is required for public dissemination and which should be retained following plant restart. (1/26)	D. Passehl	2/3-Discussed, will update Panel on review at meeting 2/5/04; 2/5-Discussed, will provide specific on retention of document to Panel on 2/10/04.	02/20/04

February 13, 2004

DAVIS-BESSE OVERSIGHT PANEL "OPEN" ACTION ITEM LIST				
Item Number	Action Item (Date generated)	Assigned to	Comments	Due Date
243	Conduct a review to verify operator training on the latest revision to the Davis-Besse Abnormal Procedure "Serious Fire in the Control Room" has been completed to comply with Section III.L of Appendix R. (2/10)	S. Thomas		02/19/04
244	Security (J. Creed) contact NSIR to determine if DHS needs notification at restart as an applicable Federal Agency. (2/10)	D. Passehl		2/25/04
245	NRR contact FEMA to verify there are still no objections to restart. (2/10)	W. Ruland		2/25/04
246	Verify which remaining meetings of all special inspection team leads with the RA exist. (2/10)	C. Lipa		2/27/04