

April 25, 2003

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WEEKLY STATUS REPORT DAVIS-BESSE OVERSIGHT PANEL

PLANT STATUS AND SCHEDULE OF SIGNIFICANT ITEMS

The following are the licensee's scheduled activities (these dates have not been released publicly):

- ✓ Fuel Load: Completed - February 26
- ✓ Mode 5 (Cold Shutdown): Completed - Entered March 12
- ✓ ILRT: Completed - April 9
- Mode 4: May 16
- NOP Test: May 17-24
- Mode 4: Between June 14-29
- Mode 2: July 1

The next major milestone is entry into Mode 4 (280 >Tavg>200). Significant work remains until the plant is scheduled to enter Mode 4. The licensee has approximately 1400 Mode 4 restraints.

The following are the NRC's scheduled activities:

- 5/6: 0350 Public Meetings
- 5/7: Public Meeting on Engineering Design Issues in Region III Office
- 6/3: 0350 Public Meetings
- TBD: Early May - Public Meeting on Safety Culture in Region III Office

EMERGENT ISSUES

Below are listed those emerging issues that could impact licensee restart milestone schedules or NRC activities necessary to complete before consideration of restart authorization. Each item will be tracked until the resolution approach for the item is understood and incorporated into licensee and/or NRC action plans.

1. **Failures of Safety Features Actuation System (SFAS) Output Relays** - The licensee identified a higher than expected SFAS relay failure frequency in some spare and installed relays. All four channels of SFAS output relays (approximately 250 relays) were replaced during the current refueling outage with a newer version of the relay which was qualified and supplied by Wyle laboratories. Three of the newer relays failed to close (reset) after testing. The licensee later found that the relays are rated for 30 vdc but were used in 120 vdc applications. The licensee continues to evaluate

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options to correct this problem. The current course of action involves the requalification of the relays that were removed earlier in the outage and the reinstallation of those relays into the SFAS system. Currently, it does not appear that the licensee will have enough functional relays to complete this task and is having difficulties obtaining spares from industry sources. In parallel with the requalification effort, the licensee will be preparing an engineering evaluation to verify the adequacy of this type of relay, which is rated at 30 vdc, in a 120 vdc application. To date, this evaluation has not been completed. The NRC is reviewing the licensee's response to this issue. This is a Mode 4 constraint.

2. **Clogging of High Pressure Injection Pump Hydrostatic Bearing** - During design reviews of the high pressure injection (HPI) pump, the licensee identified that the pump was not designed to meet post-LOCA recirculation phase design requirements. The licensee identified a debris intrusion concern where debris small enough to pass through the emergency core cooling system sump suction strainers may be too large to pass through the clearances between the hydrostatic bearing and the pump casing resulting in loss of bearing cooling and significant pump damage. The licensee intends to install new motors and pumps prior to restart but is pursuing a license amendment to support the Mode 3 NOP test using the existing pumps. The NRC is reviewing this issue onsite and NRR is prepared to support the licensing request. The pump/motor replacement option is a significant design change, impacting both hydraulic and electrical safety related systems. The implementation of this design change could significantly impact the present plant restart date (licensee estimates approximately two months).
3. **Electrical Distribution Equipment Design Concerns** - The licensee identified multiple concerns with the input parameters and assumptions incorporated into the electrical distribution system design calculations. Preliminary review by the licensee indicates that there may be the need for several plant modifications before restart. Successful results from this evaluation would clear several Mode 4 restraint items, but the potential exists to add several more Mode 4 restraints if the results of the evaluation are less positive. Recently it was discovered that, due to challenges with the electrical modeling assumptions, the electrical system evaluation completion date may need to be moved out by as much as a month. The impact on the schedule for Mode 4 entry is uncertain. The NRC inspection staff is continuing to follow this issue.
4. **Diesel Generator Operability** - Diesel generator room ventilation is significantly undersized to meet the current design basis requirements. The licensee's current evaluation supports operability to an outside air temperature of 90 degrees Fahrenheit in Modes 5 and 6, and 85 degrees for Modes 1-4. In addition, there are design issues concerning diesel generator starting voltage and frequency response and the load table not being current. The licensee is installing additional ventilation system capacity of 30,000 cfm. Additionally, the licensee is revising the diesel generator loading calculation and is preparing a transient analysis for voltage and frequency response. The licensee

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will evaluate the results to ensure that the diesel generator has sufficient capacity and capability to carry design basis loads. The impact on the schedule for Mode 4 entry is uncertain. The NRC inspection staff is continuing to follow this issue. |

5. **Air Operated Valves** - The licensee is completing modifications or adjustments on several air operated valves. The long lead item is acquiring the appropriate actuator for reactor coolant system letdown outlet isolation Valve MU-3B. A present schedule has this work completing the first week of June. This issue, including LER 2003-001, "Potential Inability of Air-Operated Valves to Function During Design Basis Conditions," are being evaluated by Region III based inspection staff. |

6. **Safety Culture Assessment** - The licensee performed their second internal safety culture assessment. The safety culture assessment covers three major areas: policy level commitment, management commitment, and individual commitment. Assessments of the broad areas are combined to give an overall assessment of "organizational safety culture." The first assessment prior to fuel loading resulted in a "Yellow" categorization of organizational safety culture based on "Yellow" at the individual level and "White" at the corporate and management level. Yellow indicates that all major areas are acceptable with several indicators requiring prompt management action. The second assessment prior to Mode 5 entry also resulted in a "Yellow" categorization of organizational safety culture based on "Yellow" in all three organizational levels. The licensee plans to perform another assessment prior to Mode 4. |

The licensee reported their results from a safety conscious work environment employee survey conducted in late March 2003. The survey was given to FENOC and contract employees, with 79% of those targeted responding. The licensee reported significant improvement since the previous survey conducted in August 2002 in nearly all areas. Additional work was required in demonstrating management commitment to SCWE and improving confidence in the corrective action and employee concern programs. Certain data indicate some potential concern with retaliation, but that data appears erroneous. More analysis is under way. |

A preliminary independent safety culture assessment was performed by the licensee's contractor and presented to FENOC March 20. The final report was issued this week. The outcomes from the internal safety culture assessment and the findings of the independent assessment will be utilized to benchmark and refine internal safety culture assessment procedures. A public meeting is planned for early May to discuss the licensee's safety culture assessment/process. |

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9. **Issuance of 10 CFR 2.206 Petition Request from Kucinich - Internal NRC comments addressed/incorporated into the reply letter by May 2 so that concurrence routing of the packages to be issued to the petitioner and licensee for comment can be completed on or about May 9.** |
10. **Mode 4 Restraints - The licensee has about 1400 Mode 4 restraints consisting of condition reports, work requests, post-maintenance and post-modification tests, Restart Station Review Board imposed restraints, and modifications that need to be completed and closed prior to entry to Mode 4.** |

RESTART CHECKLIST ITEMS

On August 16, 2002, the Davis-Besse Oversight Panel issued a Restart Checklist, listing issues that require resolution prior to restart. The Checklist was updated on October 30, 2002 and January 28, 2003. The following is the status of each Restart Checklist item.

1. **Adequacy of Root Cause Determinations**

1.a **Penetration Cracking and Reactor Pressure Vessel Corrosion**

Licensee actions - The licensee submitted its technical root cause report to the NRC staff in August 2002. Licensee actions are complete.

NRC Actions - NRR review of the technical root cause document is completed and will be included as an attachment to the next resident inspection report (IR 03-04) for closure of this item. This Checklist Item will be discussed for closure during the next internal Davis-Besse Oversight Panel meeting. |

1.b **Organizational, Programmatic and Human Performance Issues**

Licensee actions - The licensee completed their preliminary root cause determinations and submitted them to the NRC on January 9, 2003. Based on NRC inspection results, the licensee expanded their root cause assessments. Final root cause assessments were submitted on March 27, 2003. The licensee reopened its engineering root cause analysis report and is about complete with their re-review. No impact was identified on the collective significance review report as a result of re-opening the engineering report. |

NRC Actions - The NRC's initial inspection and partial resolution of this Checklist Item is documented in IR 02-15. Completion of this item will be |

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evaluated following completion of the Phase 2 (IR 02-18) and Phase 3 (IR 03-12) portions of the management and human performance inspection activity. The Phase 2 inspection was started on February 24 and is ongoing. The Phase 3 portion of the inspection is in progress and scheduled to run the weeks of April 28 and May 5. On April 7 the NRC issued a press release and biographical information on the team members. The inspection exit date is tentatively scheduled for June 3.

2. Adequacy of Safety Significant Structures, Systems, and Components

2.a **Reactor Pressure Vessel Head Replacement**

Licensee actions - The licensee has completed head installation and is 97% complete with implementation for this item. The remaining implementation activities are on hold pending plant conditions. Still open are the inspection and testing of the replacement head, the NOP test, and control rod drive insert time tests.

NRC Actions - The NRC completed its initial inspection of this item and found the replacement head to be acceptable (IR 02-07). This item remains open pending inspection of acceptability of test results for the NOP test and acceptability of the control rod drive tests. The NOP test is scheduled for the period May 17-24. A public meeting was held in Headquarters on April 4 to discuss the results of the incore monitoring instrumentation nozzles' reactor coolant system leakage simulation. Meeting minutes are being drafted. Control rod testing will not occur until just prior to restart, and will be observed by the resident inspection staff.

2.b **Containment Vessel Restoration Following Reactor Pressure Vessel Head Replacement**

Licensee actions - The licensee is near complete with implementation for this item. The results from the ILRT were successful. Items remaining include completion of the NOP test and a few local leak rate tests.

NRC Actions - The NRC completed its initial inspection of this item and found the containment restoration acceptable (IR 02-07). This item remains open pending NRC review of the ILRT test results, which will be documented in IR 03-05. This Checklist Item will be discussed for closure during the next internal Davis-Besse Oversight Panel meeting.

2.c **Structures, Systems, and Components Inside Containment**

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Licensee actions - The containment health discovery phase is completed. The licensee is still completing work on the systems inside containment. Implementation of actions to correct deficiencies identified is 90% complete. Work remaining includes the containment air coolers, containment vessel wall-to-floor liner, and alloy 600 components.

NRC Actions - The NRC's extent of condition inspections (IRs 02-09 and 02-12) identified three unresolved items that need to be addressed by the Corrective Action Team Inspection (IR 03-10). Conduct of the Corrective Action Team Inspection was suspended due to many of the condition reports indicated to be ready for inspection by the licensee were not actually completed. One week in May and two weeks in August are being considered for continuing the inspection.

2.c.1 Emergency Core Cooling System and Containment Spray System Sump

Licensee actions - The licensee is finishing up field work for installation of the new sump this week. The item is 95% complete.

NRC Actions - The NRC's sump modification inspection (IR 03-06) was complete and is being documented. While the inspection disclosed that the new sump probably meets design requirements there are questions on the available margin for net positive suction head. Further followup is necessary prior to closure of this Checklist Item.

2.d Extent-of-Condition of Systems Outside Containment

Licensee actions - The licensee limited its review of this item to the adequacy of systems that may contain boric acid outside of containment. As such, the licensee considers discovery for this item to be complete, and is in the process of implementing corrective actions to address the issues identified in the discovery phase. The licensee is 86% complete with the implementation phase.

NRC Actions - The Decay Heat Removal system and the High Pressure Injection Systems were walked down as documented in IRs 02-09, and 02-14, respectively. The resident staff is inspecting the adequacy of systems that may contain boric acid outside of containment as part of their routine activities.

3. Adequacy of Safety Significant Programs

3.a Corrective Action Program

3.d Boric Acid Corrosion Management Program

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Licensee actions - The discovery and implementation phases for these items are complete.

NRC Actions - The NRC's evaluation for closure of this item will be based on acceptable findings from the Programs inspection (IRs 02-11 and 03-09), which is ongoing.

- 3.b Operating Experience Program**
- 3.f In-Service Inspection Program**
- 3.g Modification Control Program**

Licensee actions - The discovery and implementation phases for these items are complete.

NRC Actions - The NRC inspection of these Checklist items is complete and will be documented in the Programs inspection (IR 03-09). Regarding item 3.g, some aspects of the design program inspection are being done by the System Health Assurance inspection (IR 03-03). This inspection has several more weeks to go.

- 3.c Quality Audits and Self-Assessments of Programs**

Licensee actions - The licensee broke this item down into two components, audits and self-assessments. The discovery phase for audits (self-assessments not applicable) is complete. The implementation phase, namely completing condition report evaluations and corrective actions, is complete for the self-assessment phase and 95% complete for the audits phase.

NRC Actions - The NRC's evaluation for closure of this item will be based on acceptable findings from the Programs inspection (IRs 02-11 and 03-09), which is ongoing.

- 3.e Reactor Coolant System Unidentified Leakage Monitoring Program**

Licensee actions - The licensee is complete in developing the program. Implementation of this item is 75% complete. The remaining implementation activities are on hold pending plant conditions. The licensee plans to validate the program through the NOP test, and refine the program based on completion of seven-day hold period and data analysis to support restart and next operating cycle.

NRC Actions - The NRC's evaluation for closure of this item is complete and will be documented in the Programs inspection (IR 03-09).

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3.h Radiation Protection Program

Licensee actions - The discovery phase of this item is complete, and the implementation portion, namely condition report evaluation and corrective action implementation, is 85% complete.

NRC Actions - The NRC's Radiation Protection 95002/Special Inspection (IR 03-08) is complete. A public exit for this inspection was held at the site on April 15. This Checklist Item will be discussed for closure during the next internal Davis-Besse Oversight Panel meeting.

3.i Process for Ensuring Completeness and Accuracy of Required Records and Submittals to the NRC.

Licensee actions - The licensee's implementation phase (discovery not applicable) is 60% complete. Both the implementation of Procedure NOP-LP-4007, "NRC Correspondence Review and Approval Process," and the documentation of actions taken to ensure completeness and accuracy of required records phases are open at this time.

NRC Actions - The NRC's evaluation for closure of this item will be based on acceptable findings from the Programs inspection, Part 2 (IR 03-09), which is ongoing.

4. Adequacy of Organizational Effectiveness and Human Performance

4.a Adequacy of Corrective Action Plan

Licensee actions - The licensee has two of four closure packages in its Management and Human Improvement Plan complete and is validating the third. An independent effectiveness review of engineering readiness for restart is in progress.

NRC Actions - The NRC's initial inspection of this item is documented in IR 02-15. Further review of the adequacy of corrective action plans will be conducted under the Management and Human Performance Phase 2 inspection which is ongoing.

4.b Effectiveness of Corrective Actions

Licensee actions - This item is 85% complete. It comprises performing a collective evaluation of safety culture and safety conscious work environment

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performance measures, completing restart assessments, and monitoring corrective action effectiveness in the human performance area. |

NRC Actions - This item will be evaluated following completion of Phase 3 of Management and Human Performance inspection. The inspection is in progress and is evaluating the licensee's process and tools for monitoring the improvement in the safety culture and safety conscious work environment and the effectiveness of the Employee Concerns Program. The inspection is scheduled to run the weeks of April 28 and May 5. The exit date has not been set.

5. **Readiness for Restart**

5.a **Review of Licensee's Restart Action Plan**

Licensee actions - The licensee has completed its Restart plan and it was submitted to the NRC in August 2002. The licensee signed out Revision 6 of its Return-to-Service Plan on April 7.

NRC Actions - This item will be evaluated by the resident staff, as assisted by region-based and headquarters staff, and discussed in a resident inspection report.

5.b **Systems Readiness for Restart**

Licensee actions - The licensee is complete with discovery activities. The implementation phase, namely completing condition report evaluations and corrective actions, is 79% complete. There are numerous issues remaining to be resolved involving engineering calculations, LER resolution, modification implementation, and resolution of issues from the system health assurance inspections.

NRC Actions - The initial inspection to address this item was documented in IRs 02-13 and 02-14. Because the majority of the System Health reports were not ready for review by the close of the initial inspection and because the findings of the system design reviews required expansion of the scope of system design reviews, this checklist item will remain open and subject to continued inspection. The additional system health reports and latent issue (design) evaluation reports have been inspected and found acceptable. In addition the expanded design reviews to verify system safety functions were inspected and found to be adequate. Several areas were identified in cross cutting engineering design concerns that are continuing to be evaluated. The Corrective Action Team Inspection (looking into engineering unresolved item closure) is ongoing.

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5.c **Operations Readiness for Restart**

Licensee actions - Licensee actions to close this item will include Restart Readiness Reviews which are conducted prior to each Mode change. In addition, the licensee is developing a plan of just-in-time training and enhanced operations observation, oversight and coaching to ensure operations readiness.

NRC Actions - This item has been evaluated by the resident staff at each mode change and will be evaluated by the Restart Readiness Assessment Team Inspection. That inspection will include around-the-clock observation of conduct of operations. The inspection is currently scheduled to begin near the time the licensee enters Mode 4 following the NOP test.

5.d **Test Program Development and Implementation**

Licensee actions - Licensee actions to close this item are 66% complete. Tests included to address this item are the NOP, control rod drive tests, and evaluation of adequacy of the post-maintenance and post-modification test plans. Additionally, the licensee plans 50 and 250 psi walkdowns of the reactor coolant system while in Mode 5.

NRC Actions - Closure of this item will be based on completion of inspections related to individual tests and evaluation of the acceptability of the licensee's post-maintenance/modification tests for various items by the resident and region-based staff.

6. **Licensing Issue Resolution**

Licensee actions - The licensee submitted six licensing actions associated with the reactor vessel head. No additional licensing actions associated with replacement of the head have been identified.

NRC Actions - NRC staff reviewed and approved all six proposed licensing actions.

7. **Confirmatory Action Letter Resolution**

7.a **Verification that Confirmatory Action Letter Items are Resolved, Including a Public Meeting to Discuss Readiness for Restart**

Licensee actions - This item remains open pending the licensee's completion of its CAL Resolution and Restart Report. The report has not yet been submitted.

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NRC Actions - Closure of the CAL items is tracked via the Restart Action Matrix (RAM), with each CAL item having its own line item. Documentation of what needs to be done is described in the CAL supplement letters dated December 24, 2002, and January 21, 2003.

ALLEGATIONS/OI INVESTIGATIONS STATUS

Currently, there are twenty open allegations, of which six need to be completed prior to restart. In addition, the Office of Investigations has thirteen of these allegations under active investigations. The open allegations involve five discrimination complaints, eleven cases involving willful violations, and six involving multiple technical issues, such as the adequacy of the Technical Specification addressing the use of Tri-sodium phosphate in containment and the need to replace/repair reactor coolant pumps prior to restart. Some allegations include discrimination complaints, technical concerns, and alleged willful violations in the same allegation.

Comments/Questions/Feedback?

If you have any feedback on any of the information contained in this status report, or any suggestions for improving future reports, please contact Dave Passehl or Christine Lipa in Region III by email or telephone at (630) 829-9872 or 829-9619, respectively.

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