

February 26, 2004

MEMORANDUM TO: James L. Caldwell
Regional Administrator

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

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

SUBJECT: RECOMMENDATION FOR NRC TO APPROVE RESTART OF
THE DAVIS-BESSE NUCLEAR POWER STATION AND
RECOMMENDATION TO ISSUE CONFIRMATORY ORDER

The NRC Inspection Manual Chapter (IMC) 0350 Davis-Besse Oversight Panel has concluded that the NRC staff completed the necessary inspection, assessment and licensing activities to resolve the issues identified in the Davis-Besse Restart Checklist and recommends that the NRC approve restart of the Davis-Besse Nuclear Power Station. Separately, the Panel recommends that an immediately effective Confirmatory Order be issued to the licensee requiring annual independent assessments for five years in the areas of operations, engineering, corrective actions and safety culture, and requiring inspections of key reactor coolant system pressure boundary components during a mid-cycle outage. The purpose of requiring these independent assessments and inspections is to provide additional information on the continuing effectiveness of corrective actions and operating performance, and to enhance public confidence.

Background

On February 16, 2002, the Davis-Besse facility was shut down for its 13th refueling outage. One scheduled activity during the outage was inspection of control rod drive penetrations through the reactor pressure vessel (RPV) head pursuant to NRC Bulletin 2001-01. On March 6, 2002, activities associated with that inspection disclosed significant wastage of the carbon steel RPV head material near Penetration No. 3. The NRC was notified of the condition and, on March 12, 2002, initiated an Augmented Inspection Team (AIT) to review the facts and circumstances surrounding the degraded vessel head. On March 13, 2002, the NRC issued a Confirmatory Action Letter to Davis-Besse documenting a number of actions required to be accomplished prior to restarting the reactor.

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As a result of NRC assessment of the head degradation, evaluation of the findings from the AIT and consideration of other regulatory concerns, on April 29, 2002, pursuant to NRC IMC 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems," an NRC Davis-Besse Oversight Panel (Panel) was chartered to coordinate and oversee NRC activities needed to verify proper licensee safety performance prior to restart and to ensure appropriate focus was provided and resources were allocated with regard to reviewing Davis-Besse improvement initiatives. The activities addressed by the Panel are identified in the "Davis-Besse IMC 0350 Panel Process Plan," which is included as Attachment 1.

On May 21, 2002, the licensee submitted to the NRC their initial Return-to-Service Plan to address the causal factors associated with the head degradation and the longer term actions necessary to assure that the underlying causal factors remain corrected and that improved performance is sustained. The licensee has subsequently revised the Return-to-Service Plan to address further issues disclosed during implementation of the Plan. This latest revision, Revision 6, is dated April 6, 2003.

On August 16, 2002, the Panel issued its initial Restart Checklist, developed in accordance with NRC IMC 0350. This Checklist includes issues that required resolution prior to restart. The Restart Checklist was subsequently revised based on insights gained from Panel evaluation of ongoing inspections, performance indicators and licensee assessments, and items in the licensee's revisions of the Return to Service Plan and subordinate Building Block Plans. The Restart Checklist defined actions and issues that needed to be considered by the NRC in determining whether Davis-Besse had implemented effective corrective actions necessary for plant restart authorization. The Restart Checklist was last updated on July 2, 2003. Attachment 2 is a copy of the current restart checklist showing each item, the date the Panel made the decision to close the item, and the inspection report in which that item's closure was or will be documented.

Discussion

The NRC staff has completed its inspection, assessment and licensing activities and has evaluated the effectiveness of the licensee's actions to address the issues that resulted in the plant shutdown. The Panel's assessment of the licensee's corrective actions was based on resident and region-based inspector observations, NRR staff reviews, baseline inspections, and a number of special inspections, including:

- Augmented Inspection Team (AIT) of RPV Head Degradation Event and AIT Follow-Up Inspections (Inspection Reports (IRs) 02-03 and 02-08)
- Boric Acid Corrosion Extent of Condition Inspection Parts I and II (IRs 02-09 and 02-12)
- Program Effectiveness Inspection Parts I and II (IRs 02-11 and 03-09)
- System Health Assurance Inspection, Safety System Design and Performance Capability Inspection, and Design Issues Inspection - Paths A, B, and C (IRs 02-13, 02-14 and 03-03)

- Uncontrolled Radioactive Material Release and Substantial Potential for Overexposure Special Inspections and Radiation Protection Supplemental (95002) Inspection (IRs 02-06, 02-16 and 03-08)
- Reactor Pressure Vessel Head Replacement Inspection (IR 02-07)
- Containment Integrated Leak Rate Test Inspection (IR 03-05)
- Emergency Core Cooling System and Containment Spray System Sump Inspection (IR 03-06)
- Completeness and Accuracy of Information Inspection (IR 03-19)
- Reactor Coolant System Integrity Inspection (IR 03-23)
- Corrective Action Team Inspection (IR 03-10)
- Engineering and Maintenance Backlog Assessment Inspection (IR 03-24)
- Management and Human Performance Inspection Phases I, II, and III and Management and Human Performance Follow-Up Inspection (IRs 02-15, 02-18, 03-12, and IR 04-03)
- Restart Readiness Assessment Team and Restart Readiness Assessment Team Followup Inspections (IRs 03-11 and 04-04)

Additional significant inspections accomplished during the outage included NRC evaluation of licensee actions to implement NRC security orders and NRC and FEMA evaluation of the biennial emergency preparedness exercise.

With the exception of the Corrective Action Team Inspection, and the Management and Human Performance and Restart Readiness Assessment Follow-up Inspections, these inspection reports are available in the NRC Public Electronic Reading Room and on the NRC Davis-Besse web site. These reports have been incorporated into a binder, along with copies of the routine resident inspection reports issued during the extended shutdown. The binder is available for your review.

In addition, the Panel has conducted frequent public meetings with the licensee to discuss licensee performance and NRC inspection and assessment results or with the public to receive comments and answer questions. Each of these meetings was transcribed or documented in public meeting summaries. The transcript or meeting summary and any associated licensee and NRC presentation materials have been placed in the NRC Public Electronic Reading Room and on the NRC Davis-Besse web site.

There have also been multiple internal meetings of the Panel. The results of these meetings were documented in meeting minutes that will be placed in the NRC Public Electronic Reading Room should the plant be restarted. In accordance with IMC 0350 guidelines, the NRC staff has coordinated with the Federal Emergency Management Agency to ensure that there are no outstanding offsite emergency preparedness issues that would impact restart authorization.

The panel has developed a Restart Communication Plan. As part of the Restart Communication Plan, should restart be authorized, the NRC will notify appropriate NRC staff as well as congressional, state and local officials, the media, and other interested parties, following issuance of the restart approval letter to FirstEnergy Nuclear Operating Company.

As the licensee neared completion of its Return-to-Service Plan and resolution of the Restart Checklist issues, the Panel polled NRC staff to obtain any concerns that may exist within the

staff regarding the readiness of Davis-Besse to restart and operate safely. Any concerns that were received were added to the Panel's Restart Action Matrix, which is a listing of items the Panel felt needed to be addressed before restart. Also included in the Restart Action Matrix are all of the attributes of Inspection Procedures 95002 and 95003 and any inspection followup items, concerns from within the NRC and from external stakeholders, and other appropriate issues. Acceptable resolution of each restart item in the Restart Action Matrix was documented and reviewed by the Panel. Attachment 3 is a copy of the completed Restart Action Matrix and the completed Restart Action Matrix closure documentation has been incorporated into a binder that is available for your review. That documentation will be placed in the NRC Public Electronic Reading Room should the plant be restarted.

Recommendation

The Davis-Besse Oversight Panel has determined that Davis-Besse's performance improvement initiatives have been sufficiently effective to support closure of the issues contained in the Restart Checklist. The Panel has concluded that the facility and the licensee's staff performance is adequate to support safe restart and facility operations. Accordingly, the Panel recommends restart approval for Davis-Besse.

The licensee is responsible for resolving any remaining issues in the mode change checklists. The resident staff has monitored the prioritization of remaining work items and concluded that the licensee is properly scheduling work activities consistent with operational conditions.

As discussed with the licensee during several public meetings, implementation of the routine reactor oversight and assessment process will continue to be suspended. The Davis-Besse Oversight Panel will continue to provide NRC regulatory oversight at Davis-Besse until the Panel is satisfied that the licensee has sufficiently demonstrated acceptable operating performance such that enhanced NRC oversight through an Oversight Panel is no longer necessary and NRC inspection and assessment can occur under routine NRC programs. The Panel will continue to monitor licensee activities through resident and region-based special inspections, including a period of continuous observation during restart of the plant. In addition, enhanced inspection oversight will be provided utilizing the additional resident inspector at the facility, and other focused special inspections of areas the Panel determines warrant additional oversight. Currently, those areas include operational performance, the quality of engineering activities, the corrective action program implementation and the continuing effectiveness of the safety culture improvement initiatives, along with areas intended to be monitored by performance indicators where those indicators are not currently providing useful insights due to the extended shutdown. In addition, the Panel will continue to conduct periodic public meetings and ensure public awareness of NRC regulatory activities.

Separately, the Panel has determined that the importance of effective licensee assessment of continued safe operations would be reinforced, additional information regarding continuing effectiveness of corrective actions would be available and public confidence would be enhanced through independent assessments in the areas of operations effectiveness, engineering program implementation, corrective action program effectiveness, and safety culture assessment, and inspection of key reactor coolant system pressure boundary components

during a mid-cycle outage. Therefore, the Panel recommends issuance of a Confirmatory Order to the licensee to require annual independent assessments of these key safety areas for five years and mid-cycle reactor coolant system boundary inspections. The Panel has developed a draft Order with the assistance of regional, NRR, OE, and OGC staff.

Conclusion

In summary, the Panel recommends that the NRC approve restart of the Davis-Besse Nuclear Power Station. Separately, the Panel also recommends issuance of a Confirmatory Order requiring independent assessments of the licensee's operating, engineering, corrective action, and safety culture improvement initiatives, and inspection of key reactor coolant system pressure boundary components during a mid-cycle outage.

The Panel would be glad to discuss any questions you have regarding the basis for these conclusions.

Docket No. 50-346

Attachments: 1. Davis-Besse IMC 0350 Panel Process Plan
2. Davis-Besse Restart Checklist
3. Davis-Besse Restart Action Matrix

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