



Davis-Besse Nuclear Power Station NRC UPDATE

May 2004

NRC Continues Close Scrutiny of Davis-Besse

The Nuclear Regulatory Commission continues to closely monitor the performance of the plant since it approved restart of the plant on March 8.

During the initial phases of startup through full power operation, the NRC maintained around-the-clock inspection coverage of the plant.

Some 30 NRC inspectors and managers from across the country participated in this intense inspection activity. No safety issues were identified by the NRC inspectors.

Expanded inspections continue at the plant with three NRC resident inspectors, assisted by additional inspectors from the NRC's regional office and headquarters.

In addition to the ongoing NRC oversight, the agency issued an Order to FirstEnergy at the time it approved restart, requiring the utility to have annual assessments of its activities by independent outside organizations.

These annual assessments will examine plant operations, engineering, corrective action program, and the utility's ongoing efforts to improve the safety culture of the staff. The reports of these assessments will be made public when submitted to the NRC. The first assessment will be conducted in August 2004.

The agency's Davis-Besse Oversight Panel remains in place to coordinate the NRC regulatory oversight of the plant. It is composed of managers and staff from the Region III Office, NRC Headquarters, and the resident inspection office.

NRC Resident Inspection Staff

Three fully qualified resident inspectors are assigned to the Davis-Besse site on a full-time basis. The normal complement for a reactor site is two inspectors, but a third inspector was added in September 2003 to provide additional oversight. All three inspectors and their families live in the vicinity of the Davis-Besse plant.

Christopher S. "Scott" Thomas has been the senior resident inspector at Davis-Besse since January 2002. He previously was a resident inspector at the Prairie Island Nuclear Power Station in Minnesota. Scott specialized in nuclear engineering with the U.S. Navy for 15 years before joining the NRC. He holds a master's degree in environmental engineering.

John E. "Jack" Rutkowski was assigned as a resident inspector at Davis-Besse in June 2003. Prior to joining the NRC in 2002, Jack held a wide range of technical and management positions in the nuclear industry. He also served in the U.S. Navy. He holds a master's degree in nuclear science and engineering and a master's degree in business administration.

Monica P. Salter-Williams became the third member of the resident inspection staff in September 2003, coming to Davis-Besse from the NRC's Region I office. She was previously an engineer at a nuclear power plant in Pennsylvania. Monica has a master's degree in nuclear engineering from Pennsylvania State University and a bachelor's degree in chemistry from Georgia State University. She recently gave birth to her second child.

Nancy Keller is the resident office assistant. She has been the administrative backbone of the NRC resident inspectors' office since 1994.

As it did during the two-year shutdown, the panel will hold periodic public meetings near the plant to review the performance of Davis-Besse and discuss inspection findings.

Reports of the NRC inspections and other documents related to Davis-Besse are available on the NRC's web site at: <http://www.nrc.gov> - select "Davis-Besse/Reactor Vessel Head Degradation" from the Key Topics menu.

Rupture of Davis-Besse reactor head not 'imminent' when shut down

The Nuclear Regulatory Commission has issued its updated assessment of the condition of the Davis-Besse reactor vessel head when the plant shut down on Feb. 16, 2002. Corrosion had created a 6-inch deep cavity through the wall of the head, leaving about 0.2 inches of stainless steel liner to contain the reactor coolant inside the vessel. The assessment, issued April 30, is on the NRC's Davis-Besse web site.

The NRC's studies concluded that, while the stainless steel liner remained intact at the time of shutdown and rupture was not imminent, the liner may have failed at normal operating pressures over a period of an additional two to 13 months of operation.

In response to an NRC bulletin, the plant was shut down in February to inspect the nozzles which pass through the reactor vessel head for possible cracking. During the inspections and subsequent repair activities, plant workers discovered the damage to the reactor vessel head.

Rupturing of the liner would have caused a loss-of-coolant accident similar to a break in a cooling water pipe. The plant is designed to cope with a loss-of-coolant accident, pumping water into the reactor from several different safety systems. The reactor is surrounded by a sealed concrete and steel structure intended to contain any radioactivity that might be released in an accident.

Two safety systems were potentially degraded at the time of Davis-Besse's shutdown -- the high pressure injection system, which is one of the emergency cooling systems, and the containment sump, where water would be collected for long-term cooling of the reactor.

Extensive repairs and modifications have been made to correct these safety issues. FirstEnergy replaced the damaged reactor vessel head, modified the high pressure injection pumps, vastly increased the surface area of the screens protecting the containment sump, and replaced coatings inside the reactor containment which did not meet requirements.

The NRC is continuing its assessment of the Davis-Besse conditions to gather information which might reveal needed improvements in its regulatory program.

Notice of Violation Issued for Inaccurate Information in 1998

On May 7, the NRC issued a Notice of Violation to FirstEnergy for providing inaccurate and incomplete information to the agency in responding to a Generic Letter in 1998 which sought information from all utilities about the adequacy of coatings used in reactor containments. The inaccurate information was identified by the company and reported to the NRC as part of a review of past submittals to the agency.

Because FirstEnergy found the violation, reported it to the NRC, and took extensive corrective action, the NRC determined that no fine should be levied for the violation under the NRC's Enforcement Policy. Some question has been raised about the five-year statute of limitations and how it might have prevented the NRC from levying a fine. In this case, however, the statute of limitations was not relevant because no fine would have been proposed.

NRC Issues Six Inspection Reports

Six inspection reports have been issued in the past two months. These reports and other documents related to Davis-Besse are available on the NRC's web site at: <http://www.nrc.gov> - select "Davis-Besse/Reactor Vessel Head Degradation" from the Key Topics menu. One inspection report covers the time period which includes the reactor startup:

Integrated Resident Inspection (Report No. 50-346/04-06), issued May 5, documents the results of the inspection which included around-the-clock coverage of plant activities by NRC inspectors to verify the ability of the plant staff to conduct a safe startup and power ascension to 100 percent reactor power. The report documents one finding of very low safety significance related to the failure to provide adequate controls to safely perform work activity for the removal of the actuator on a motor-operated valve with the feedwater system at full operating pressure. The around-the-clock coverage of reactor startup activities found no safety issues and no violations of NRC requirements.

Five reports were issued in February and March, documenting inspections which were conducted prior to the startup of the plant. The findings of these inspections were fully considered in the NRC's startup decision:

Management and Human Performance Corrective Action Effectiveness Inspection (Report No. 50-346/03-12), issued February 27, includes the results of an NRC inspection which evaluated the effectiveness of the corrective actions and the tools designed to measure and monitor those corrective actions. This was the third part of a three-part Management and Human Performance (Safety Culture) Inspection.

Follow-up Management and Human Performance Corrective Action Effectiveness Inspection (Report No. 50-346/04-03), issued March 31, documents a follow-up to the Management and Human Performance Inspection (documented in Report No. 50-346/03-12). The purpose of this inspection was to gain a better understanding of the causes for the increase in the negative responses from a number of key plant organizations in a November 2003 safety conscious work environment survey in comparison with a survey conducted in March 2003. It also examined FirstEnergy's actions to address the issues identified.

Corrective Action Program Implementation (Report No. 50-346/03-10), issued March 5, documents the results of an NRC inspection which evaluated the effectiveness of the implementation the plant's corrective action program. This inspection found corrective action program weaknesses in identifying the causes of problems and the full scope of necessary corrective actions and in the quality of engineering work to correct the identified problems. Even though deficiencies were found, the NRC Oversight Panel concluded that the corrective action program was acceptable for plant restart.

Restart Readiness Assessment Team Follow-up Inspection (Report 50-346/04-04), issued March 25, documents the results of an inspection designed to evaluate the readiness of plant hardware, plant staff and management programs to support a safe restart and continued operation of Davis-Besse. The team also assessed the plant's evaluation and corrective actions for operational issues identified during the September 2003 normal operating pressure/temperature test, the December 2003 Restart Readiness Assessment Team Inspection and subsequent operations-related events.

Integrated Resident Inspection (Report No. 50-346/04-02), issued March 22, includes the results of seven weeks of inspection by the NRC resident inspectors.

We welcome your questions and comments

If you have questions or want to provide information or express a point of view, please contact us. For feedback on this newsletter, contact Viktoria Mitlyng 630/829-9662 or Jan Strasma 630/829-9663 (toll free 800/522-3025 - ext -9662 or -9663). E-mail: opa3@nrc.gov.