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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-346/80-05

Docket No. 50-346 License No. NPF-3

Licensee: Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, OH 43652

Facility Name: Davis-Besse Nuclear Power Station, Unit 1

Inspection At: Oak Harbor, OH

Inspection Conducted: February 4-8, 11, 15, 19-22, 25-28, March 3-7, 1980

Inspector: T. N. Tambling for L. A. Reyes 3/31/80

Approved By: T. N. Tambling, Acting Chief, Reactor Projects Section 2-2 3/31/80

Inspection Summary

Inspection on February 4-8, 11, 15, 19-22 25-28, March 3-7, 1980
(Report No. 50-346/80-05)
Areas Inspected: Routine unannounced inspection of followup on previous inspection findings, plant operations, physical protection (security organization, physical barriers, access control, communications) followup of licensee event reports, reactor trip on February 5, 1980, the receipt of new fuel and TMI-2 lesson learned followup. The inspection involved 147.5 inspector-hours by two inspectors.
Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

*T. Murray, Station Superintendent
B. Beyer, Assistant Station Superintendent
P. Carr, Maintenance Engineer
S. Quennoz, Technical Engineer
D. Miller, Operations Engineer
D. Briden, Chemist and Health Physicist
J. Hickey, Training Superviror
J. Simon, Operations Supervisor
C. Daft, Ioperations QA Manager
G. Grime, Nuclear Security Manager
*D. Huffman, Administrative Coordinator

*Denotes those present at the exit interview on February 22, 1980.

The inspector also interviewed other licensee employees, including members of the technical, operations, maintenance, I&C, training and health physics staff.

2. Previous Inspection Findings

(Closed) Unresolved Item (50-346/79-20-01) The inspector reviewed the revised procedure, "Diesel Fire Pump Annual Flow Test," St 5016.12, Rev. 2 and determined that appropriate guidance was included for the operator action should a fire occur during the performance of the test.

(Closed) Noncompliance (50-346/79-29; Reference Paragraph 3) Hi Flux Trip and Flux-Δ Flux-Flow trip setpoints. The insepctor reviewed the new surveillance test procedure, St 5030.18, "Check of RPS Flux-Δ Flux-Flow bistable setpoint." The inspector also reviewed the revisions to procedures, EP 1202.06, "Reactor Coolant Pump and Motor Emergency Procedure" and determined that appropriate references were included to set the Flux-ΔFlux-Flow trip setpoint for 3 RCP operation. The inspector interviewed several licensed personnel and determined they were knowledgeable in the above mentioned procedure revisions.

3. Plant Operations

The inspector reviewed the plant operations including examinations of control room log books, locked valve log, shift foreman log book, containment purge log, special operating orders, monthly activity log and jumper and liftedwire logs for the month of February. The inspector observed plant operations during 8 offshifts during the month of February. The inspector also made visual observations of the routine surveillance and functional tests in progress during the period. This review was conducted to verify that facility operations were in conformance with the requirements established under Technical Specifications, 10 CFR, and Administrative Procedures.

The inspector conducted a tour of the auxiliary building and turbine building throughout the period and noted that the monitoring instrumentation was recorded as required, radiation controls were properly established, fluid leaks and pipe vibrations were minimal, seismic restraint oil levels appeared adequate, equipment caution and hold cards agreed with control room records, plant housekepping conditions/cleanliness were adequate, and fire hazards were minimal. The inspector observed shift turnovers to verify that plant and componenet status and problem areas were being turned over to relieving shift personnel. The inspector observed shift turnovers to verify that plant and component status and problem areas were being turned over to relieving shift personnel. The inspector observed three shift turnovers that did not involve the day shift.

4. IE Information Notice No. 80-06

The inspector verified that the licensee had received IE Information Notice No. 80-06, "Notification of Significant Events" and verified that a copy of this notice was routed to all licensed personnel in the Operations Department.

5. Reactor Coolant Pump 1-1 Shaft Seal

Subsequent to the startup February 10, 1980, RCP 1-1 first stage seal failed. During the period from February 13 through February 29, the first stage of RCP 1-1 seal staged intermittently. On February 29, the licensee reduced power to 72% when the first stage failed and the third stage seal cavity pressure increased to 1200 psig. After reducing power the third seal cavity pressure increased stabilized at 1200 psig. No further degradation has been observed in the two operable stages (there are three seal stages in each pump and each seal is designed to withstand primary system pressure).

As a result of telephone conversations between NRR and B&W it was determined that if the total seal flow exceeds 2.0 gpm the RCP shall be stopped. If the total flow of the idle pump exceeds 2.0 gpm the unit shall be placed in cold shutdown. The 2.0 gpm criteria is based on the capacity of the RCP CCW cooler when seal injection flow is lost on an idle pump.

On March 7, 1980 the licensee prepared a temporary modification to procedure EP 1202.16, "Reactor Coolant Pump and Motor Emergency Procedure" to incorporate the 2.0 gpm seal flow criteria. The new seal flow criteria in the temporary modification contradicts some of the supplementary actions listed in the main body of the procedure. The inspector interviewed several licensed operators and determined that they were knowledgeable in the newly established criteria for stopping the RCP and cooling the reactor.

This item is unresolved pending the modificaiton of RP 1202.16 to include the 2.0 gpm seal flow criteria for stopping the RCP and cooling the reactor in a major revision to the procedure and the inspector review of the revised procedures. (50-346/80-05-01)

No items of noncompliance or deviations were identified.

6. Physical Protection-Security Organization

The inspector verified by observation and personnel interview (once during each operating shift) that at least one full time member of the security organization who has the authority to direct the physical security activities of the security organization was onsite at all times; verified by observation that the security organization was capable of performing their assigned tasks.

No items of noncompliance or deviations were identified.

7. Physical Protection-Physical Barriers

The inspector verified that certain aspects of the physical barriers and isolation zones conformed to regulatory requirements and commitments in the physical security plan (PS); that gates in the protected area were closed and locked if not attended; that doors in vital area barriers were closed and locked if not attended; and that isolation zones were free of visual obstructions and objects that could aid an intruder in penetrating the protected area.

No items of noncompliance or deviations were identified.

8. Physical Protection-Access Control

The inspector verified that all persons and packages were identified and authorization checked prior to entry into the protected area (PA), all vehicles were properly authorized prior to entry into a PA, all persons authorized in the PA were issued and displayed identification badges, records of access authorized conformed to the PSP, and all personnel in vital areas were authorized access; verified that all persons, packages, and vehicles were searched in accordance to regulatory requirements, the PSP, and security procedures; verified that persons authorized escorted access were accompanied by an escort when within a PA or vital area; verified that vehicles authorized escorted access were accompanied by an escort when within the PA; and verified by review of the licensee's authorization document that the escort observed above was authorized to perform the escort function.

No items of noncompliance or deviations were identified.

9. Physical Protection Communications

The inspector verified by observation (during each operating shift) that communications checks were conducted satisfactorily at the beginning of and at other prescribed times during the security personnel work shift and that all fixed and roving posts, and each member of the response team successfully communicate from their remote location; and verified that equipment was operated consistent with requirements in the PSP and security procedures.

No items of noncompliance or deviations were identified.

10. Review and Followup on Licensee Event Reports

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications. LER 79-114, -132, 80-01, -02, -09

11. LER 80-10

The licensee reported on February 14, 1980 that an extensive reanalysis of the reactor coolant system pipe restraints revealed a design deficiency on two reactor coolant hot leg whip restrainst near the top of each steam generator. The design is less conservative than assumed in the accident analysis of the FSAR. The licensee's offsite review committee has performed an evaluation and determined that operation of the plant until the next refueling shutdown (scheduled for no later than April 10) does not compromise the health and safety of the public.

The factors listed below identified the conservatism of the analysis and the bases for the justification for continued operation.

a. The analysis used a single degree of freedom model instead of a multidegree of freedom model.

b. The analysis assumed that the load resulting from the pipe break was totally applied at the point of the pipe break instead of at multiple locations along the pipe, (i.e. pipe bends).

c. No inelastic load redistribution of the bolt loads was considered.

d. No damping of the system was assumed at impact.

e. The energy absorbing capacity of other structures, such as the secondary shield walls, was not considered.

f. No loss of energy was considered to occur at impact between the RCS hot leg and the restraint.

After several conversations between RIII specialist, IE:HQ and the licensee a determination has been made that continued operation of the unit until April 10, 1980 does not compromise the health and safety of the public.

No items of noncompliance or deviations were identified.

12. Reactor Trip on February 5, 1980

The reactor tripped at approximately 3:40 p.m. EST on 2/5/80 with a subsequent Steam Feedwater Rupture Control System (SFRCS) trip when a malfunction in the turbine electrohydraulic controls caused the turbine control valves to close. The reactor tripped on high reactor coolant system pressure of 2336 psig (trip set point 2300) due to the sudden loss of load caused by the turbine control valve and combined intermediate valves closures. A sharp decrease in feedwater flow to the steam generators (SG) initiated by the integrated control system apparently initiated 1/2 SFRCS trip (momentary) on low feedwater delta pressure (loss of feed flow to SG). These momentary 1/2 SFRCS trips caused the main steam isolation valve to close. The reactor operator manually initiated auxiliary feedwater (AFW) to the SG's when he felt it had not properly started. No unusual RCS responses were identified. The pressurizer power operated relief valve did not open. Minimum RCS pressure after the trip was 1793 psig. There was no Safety Feature Actuation System (ECCS) trip (set point 1620 psig).

Minimum pressurizer level was 29.4 inches.

The unit remained in Mode 3 (hot standby) until the following corrective actions directly related to the trip were completed:

(a) Failed components of the turbine electronic overspeed protection circuit that initiated the event were replaced and the system tested.

(b) One of the Integrated Control System steam generator feedwater control circuits (a feedwater "kicker") was adjusted to prevent undesirable 1/2 trips in Steam Feedwater Rupture Control System caused by the sudden reduction of feedwater flow following a reactor trip.

(c) System walk downs were completed to inspect for possible damage as the result of the trip (no apparent damage was identified).

No items of noncompliance or deviations were identified.

13. Receipt of New Fuel

The inspector verified prior to receipt of new fuel that technically adequate, approved procedures were available covering the receipt, inspection, and storage of new fuel; observed receipt inspections and storage of new fuel elements and verified it was performed in accordance with the licensee's procedures; and, followed up resolutions of deficiencies found during new fuel inspections.

No items of noncompliance or deviations were identified.

14. TMI Lessons Learned Post Implementations Review

The NRR Lesson Learned Task Force conducted a site review of the licensee's implementation of the items designated in letters to the licensee dated September 13, 1979 and October 30, 1979 and the Show Cause Order dated January 2, 1980. This site review was made February 25 and 26, 1980. The I&E inspectors participated in the reviews and exit by the four member task force.

The licensee was requested by the task force to submit additional documentation and information to NRR. All items were to be submitted by March 14, 1980 except one which is to be submitted by March 31, 1980.

I&E was requested to make a followup verification on the following items:

Item Number	Description
2.1.1	(1) Verify procedure available for connecting pressurizer heaters to essential buses and that the procedures contain criteria to prevent overloading the diesel generators.
	(2) Verify the installation of emergency power to the PORV blocks valve.
2.1.3(b)	(1) Verify installation of Tsat meter
	(2) Review procedure criteria for use and interpretations.
2.1.6(a)	(1) Verify procedures available.
	(2) Review any revisions to the procedures.
2.1.8(a)	(1) Verify installation of changes to sampling.
	(2) Verify procedures are available for sampling and analyzing samples.
2.1.8(b)	(1) Review procedures for quantifying releases
2.1.8(c)	(1) Verify monitor properly located, and that extra supplies are available and personnel are trained.
2.2.1(a)	(1) Review procedures and any revisions for the criteria for activating the Tech Center, Incident Response Center, etc. (Based upon present or current emergency plan).

Item Number	Description
2.2.1(b)	(1) Verify STA assignments and availability of procedures.
2.2.1(c)	(1) Verify availability of procedure and witness shift turnovers.
2.2.2(a)	(1) Verify that control room access procedures are being implemented.
2.2.2(b)	(1) Verify procedures are available and the criteria used for providing data link to the Technical Support Center
2.2.2(c)	(1) Verify procedures available for the Onsite Operational Support Center.

14. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and summarized the scope and findings of the inspection activities.