

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-254/83-01(DPRP); 50-265/83-01(DPRP)

Docket Nos. 50-254; 50-265

Licenses No. DPR-29; DPR-30

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, IL 60690

Facility Name: Quad-Cities Nuclear Power Station, Units 1 and 2

Inspection At: Quad-Cities Site, Cordova, IL

Inspection Conducted: January 7 through February 18, 1983

R. D. Walker for
Inspector: N. J. Chrissotimos

2-28-83

R. D. Walker
Approved By: R. D. Walker, Chief
Reactor Projects Section 2C

2-28-83

Inspection Summary

Inspection on January 7 through February 18, 1983 (Reports No. 50-254/83-01(DPRP); 50-265/83-01(DPRP))

Areas Inspected: Routine, unannounced inspection by the resident inspector of operational safety; maintenance; surveillance; audit program; regional requests relating to containment isolation signals; reactor scrams, licensee monthly reports; special reports; Licensee Event Reports; and IE Information Notices. The inspection involved a total of 287 inspector-hours onsite by one NRC inspector including 28 inspector-hours onsite during off-shifts.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

- *N. Kalivianakis, Superintendent
- T. Tamlyn, Assistant Superintendent for Operations
- D. Bax, Assistant Superintendent Maintenance
- L. Gerner, Assistant Superintendent for Administration
- *D. Gibson, Quality Assurance Supervisor
- *G. Tietz, Technical Staff Supervisor

The inspector also interviewed several other licensee employees, including shift engineers and foremen, reactor operators, technical staff personnel and quality control personnel.

*Denotes those present at the exit interview on February 18, 1983.

2. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the months of January and February 1983. The inspector verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of Unit 1 and 2 reactor buildings and turbine buildings were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance. The inspector by observation and direct interview verified that the physical security plan was being implemented in accordance with the station security plan.

The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the months of January and February 1983, the inspector walked down the accessible portions of the Unit 1 diesel generator and the Unit 1 and 2 core spray systems to verify operability. The inspector also witnessed portions of the radioactive waste system controls associated with radwaste shipments and barreling.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under technical specifications, 10 CFR, and administrative procedures.

No items of noncompliance or deviations were identified.

3. Monthly Maintenance Observation

Station maintenance activities of safety related systems and components listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with technical specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and, fire prevention controls were implemented.

Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety related equipment maintenance which may affect system performance.

The following maintenance activities were reviewed:

Unit 2

WR 20109	250v D.C. ground alarm
WR 20111	125v D.C. ground alarm
WR 22332	CRD pump
WR 22567	Relief valve thermocouple
WR 24137	MSIV 2b
WR 23852	IRM 11
WR 15925	125v battery
WR 23143	HPCI valve
WR 23882	DWEDS isolation valves

Following completion of maintenance on the Unit 1 diesel generator, High Pressure Coolant Injection (HPCI) system signal converter and Residual Heat Removal (RHR) system heat exchanger, the inspector verified that these systems had been returned to service properly.

No items of noncompliance or deviations were identified in this area.

4. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the Unit 1 diesel generator and Unit 2 Residual Heat Removal (RHR) system and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The inspector also witnessed portions of the following test activities:

The Turbine Maximum Capacity Test.

No items of noncompliance or deviations were identified in this area.

5. Audit Program

The inspector verified that the Quality Assurance personnel involved in audits met the qualification requirements for the audited activity.

While reviewing the frequency of the audits to determine conformance with Technical Specifications, the inspector questioned the licensee's program. Further evaluation indicated that a comprehensive system for audits and the audits themselves may not meet the applicable requirements.

These concerns have been discussed with the licensee and NRC management. Further evaluation and review is being conducted. This matter is considered unresolved (254/83-01-01(DPRP) and 265/83-01-01(DPRP)) pending results of the present review.

No items of noncompliance or deviations were identified in this area.

6. Followup on Regional Requests

In regards to the potentially generic isolation problems found at Browns Ferry, the inspector conducted a special inspection.

The inspector verified through logic diagrams and logic test results that the reactor water sample line valves automatically close on any of the Group 1 primary containment isolation signals. Additionally, operator action is necessary to open these valves following isolation.

Concerning the High Pressure Coolant Injection and Reactor Core Isolation Cooling Systems, the subject steamline drain valves are not considered isolation valves at Quad-Cities.

The valves are interlocked with their respective steam supply valves; however, following isolation or initiation, these valves must be manually reset by the operator. Although these valves are not isolation valves, they do meet NUREG-0737, Item II.E.4.2 requirements for affirmative operator action to reopen after an accident.

No items of noncompliance or deviations were identified in this area.

7. Reactor Scrams

a. Unit 1

On February 16, 1983, the unit scrambled from 100 percent power due to a spurious high steam flow signal which resulted in a Group 1 isolation. The licensee determined the scram signal was accidentally caused by personnel working in the area of the instrument rack containing the high steam line flow switches. The licensee commenced recovery and returned the unit to service the next day.

The inspector determined the status of the reactor and safety systems by discussions with licensee personnel and review of documentation.

b. Unit 2

On January 11, 1983, the unit scrambled from 95 percent power due to a spurious high steam flow signal which resulted in a Group 1 isolation. The licensee determined the scram signal was accidentally caused by personnel working in the area of the instrument rack containing the high steam line flow switches. The licensee commenced recovery and returned the unit to service the next day.

The inspector determined the status of the reactor and safety systems by discussions with licensee personnel and review of documentation.

No items of noncompliance or deviations were identified in this area.

8. Review of Licensee's Monthly Performance Report

The inspector reviewed the licensee's monthly performance reports of Units 1 and 2 for the months of December 1982, and January 1983.

Areas covered by the report were amendments to Technical Specifications, summary of corrective maintenance performed on safety-related equipment, Licensee Event Reports, operating data tabulations, and refueling information. The report was reviewed for compliance with Technical Specification 6.6.A.3.

No items of noncompliance or deviations were identified in this area.

9. Review of Special Reports

The inspector reviewed the licensee's special report on Unit 1 "Summary Status of Fuel Performance, End of Cycle Six."

Areas covered by the report were gamma scanning, sipping and 100 percent visual inspection of newly received fuel bundles.

The inspectors observed portions of the above items during refueling.

No items of noncompliance or deviations were identified in this area.

10. Licensee Event Reports Followup

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.

a. Unit 1

- (i) RO 82-28/03L, dated July 19, 1982, Reactor High Pressure Scram Switch found to trip in excess of limits during surveillance.

- (ii) RO 82-35/03L, dated October 21, 1982, during surveillance, the Off Gas system isolation valves failed to close within time limits.
- (iii) RO 82-37/03L, dated December 13, 1982, during Auto Blowdown logic testing, the timer was found to trip in excess of limits.
- (iv) RO 82-38/03L, dated December 24, 1982, the shared Diesel Generator failed to start following preventive maintenance.

A crack was found in the air line between the starter air pilot solenoid and the starting motor main air header. The cause was a crimp in the line and fatigue failure at this stress point. A new line was installed. Additionally, the other diesels were inspected for similar problems and none were found.

- (v) RO 83-03/03L, dated January 18, 1983, Reactor Low Water Level Switch was found to trip in excess of limits.
- (vi) RO 83-04/03L, dated January 9, 1983, Residual Heat Removal system heat exchanger taken out of service for preventive maintenance.

b. Unit 2

- (i) RO 82-17/03L, dated October 1, 1982, small leak discovered on the High Pressure Coolant Injection System. The leak was a result of a failed flange gasket.
- (ii) RO 82-20/03L, dated October 13, 1982, suppression pool level was found to be below limits. Suppression pool (Torus) level was recorded low but within limits during the shift. During shift turnover, a level below limits was noticed and water added.
- (iii) RO 82-22/03L, dated October 21, 1982, suppression chamber to drywell vacuum breaker failed in its open position during test.
- (iv) RO 82-23/03L, dated November 4, 1982, High Pressure Coolant Injection System turbine stop valve could not be reset.
- (v) RO 83-01/03L, dated January 2, 1983, Off Gas System radiation monitor failed.
- (vi) RO 83-02/03L, dated January 6, 1983, Condensate System demineralizer resin intrusion.

Regarding RO 83-02, at approximately 3:50 p.m. on January 6, 1983, the licensee discovered the reactor coolant conductivity to be greater than 10 micro MHO/CM and initiated an orderly shutdown in accordance with Technical Specifications. An unusual event was declared as required by the generating station emergency plan and the NRC Headquarters duty officer was notified by the licensee via the emergency notification system. The reactor coolant high conductivity was caused by resin intrusion resulting from a hole in a condensate demineralizer post-filter. The demineralizer was isolated and reactor coolant conductivity returned below limits at 6:55 p.m. on January 6, 1983. The plant shut-down and unusual event were terminated at that time.

- (vii) RO 83-03/03L, dated January 10, 1983, Traverse Incore Probe System ball valve failed to fully close.

No items of noncompliance or deviations were identified in this area.

11. IE Information Notice Followup

For the IE Information Notices listed below, the inspector verified that the information notice was received by the licensee management, that a review for applicability was performed, and that if the information notice were applicable to the facility, appropriate actions were taken or were scheduled to be taken.

IE Information Notice 82-26, dated July 23, 1982, "RCIC and HPCI Turbine Exhaust Check Valve Failures." This notice is applicable to the Quad-Cities Reactor Core Isolation Cooling (RCIC) System. Station Procedure QOP-1300-3 was revised to minimize operations below rated flow. The affected valves are local leak rate tested during outages and are located close to containment.

IE Information Notice 82-27, dated August 5, 1982, "Fuel Rod Degradation Resulting from Baffle Water-Jet Impingement."

IE Information Notice 82-28, dated July 23, 1982, "Hydrogen Explosion while Grinding in the Vicinity of Drained and Open Reactor Coolant System." This notice is not applicable to Quad-Cities reactor coolant system piping. However, during construction of the modified off-gas system, an explosion did occur and appropriate actions were taken to prevent recurrence.

IE Information Notice 82-29, dated July 23, 1982, "Control Rod Drive (CRD) Guide Tube Support Pin Failures at Westinghouse PWRs."

IE Information Notice 82-30, dated July 26, 1982, "Loss of Thermal Sleeves in Reactor Coolant System Piping at Certain Westinghouse PWR Power Plants." The control rod system return lines are designed with thermal sleeves; however, both have been removed per NRC commitments.

IE Information Notice 82-31, dated July 28, 1982, "Overexposure of Diver During Work in Fuel Storage Pool." Quad-Cities Procedure QRP 100-12 addresses this matter. Appropriate personnel are aware of this incident. The station has already installed some fuel racks without incident.

IE Information Notice 82-32, dated August 19, 1982, "Contamination of Reactor Coolant System by Organic Cleaning Solvents." The licensee experienced a similar event with no resulting Local Power Range Monitor (LPRM) failures. The licensee has taken preventive measures to preclude recurrence.

IE Information Notice 82-33, dated August 20, 1982, "Control of Radiation Levels in Unrestricted Areas Adjacent to Brachytherapy Patients."

IE Information Notice 82-34, dated August 25, 1982, "Welds in Main Control Panels." The licensee has inspected control room panel welds and a similar problem is not evident.

IE Information Notice 82-35, dated August 25, 1982, "Failure of Three Check Valves on High Pressure Injection Lines to Pass Flow." Quad-Cities does not have Velan stop check valves. The licensee has evaluated the problem for applicability to other valves.

IE Information Notice 82-36, dated September 2, 1982, "Respirator Users Warning for Certain 5-Minute Emergency Escape Self-Contained Apparatus." The licensee does not utilize this type of respirator. The information was distributed to appropriate personnel.

IE Information Notice 82-37, dated September 14, 1982, "Cracking in the Upper Shell to Transition Cone Girth Weld of a Steam Generator at an Operating Pressurized Water Reactor."

IE Information Notice 82-38, dated September 22, 1982, "Change in Format and Distribution System for IE Bulletins, Circulars, and Information Notices."

IE Information Notice 82-39, dated September 21, 1982, "Service Degradation of Thick Wall Stainless Steel Recirculation System Piping at a BWR Plant." The licensee has acted on this item in conjunction with IEB 82-03.

IE Information Notice 82-40, dated September 22, 1982, "Deficiencies in Primary Containment Electrical Penetration Assemblies." Licensee inspections revealed that they utilize General Electric assemblies.

IE Information Notice 82-41, dated October 22, 1982, "Failure of Safety/Relief Valves to Open at a BWR." The licensee has 3-stage target-rock relief valves. Each valve is overhauled and tested during refuel outages. Additionally, operational surveillances are conducted every six months.

IE Information Notice 82-42, dated November 5, 1982, "Defects Observed in Panasonic Model 801 and Model 802 Thermoluminescent Dosimeters." Thermoluminescent dosimeters are no longer used by the licensee. When they were used, it was for back-up readings.

IE Information Notice 82-43, dated November 16, 1982, "Deficiencies in LWR Air Filtration/Ventilation Systems." Only a few filters are safety-related and they are routinely checked or verified operable.

IE Information Notice 82-44, dated November 18, 1982, "Clarification of Emergency Plan Exercise Requirements."

IE Information Notice 82-45, dated November 19, 1982, "PWR Low Temperature Overpressure Protection."

IE Information Notice 82-46, dated November 26, 1982, "Defective and Obsolete Combination Padlocks." The affected locks have been changed and an NRC inspection found the locks to be acceptable.

IE Information Notice 82-47, dated November 30, 1982, "Transportation of Type A Quantities of Non-Fissile Radioactive Material."

IE Information Notice 82-48, dated December 3, 1982, "Failures of Agastat CR 0095 Relay Sockets." Agastat CR 0095 relays are not utilized on safety-related equipment.

IE Information Notice 82-49, dated December 16, 1982, "Correction for Sample Conditions for Air and Gas Monitoring."

IE Information Notice 82-50, dated December 20, 1982, "Modification of Solid State AC Undervoltage Relays Type ITE-27." The licensee does not utilize this type of relay.

IE Information Notice 82-51, dated December 21, 1982, "Overexposure in PWR Cavities."

IE Information Notice 82-52, dated December 21, 1982, "Equipment Environmental Qualification Testing Experience - Updating of Test Summaries Previously Published in IN 81-29."

IE Information Notice 82-53, dated December 22, 1982, "Main Transformer at the North Anna Nuclear Power Station." The main transformers in use at Quad-Cities are of different design.

IE Information Notice 82-54, dated December 27, 1982, "Westinghouse MBFD Relay Failures in Reactor Protection Systems." The licensee does not utilize these type relays.

IE Information Notice 82-55, dated December 28, 1982, "Seismic Qualification of Westinghouse AR Relay with Latch Attachments Used in Westinghouse Solid State Protection System." The licensee does not have any AR type relays.

IE Information Notice 82-56, dated December 30, 1982, "Robertshaw Thermostatic Flow Control Valves." Robertshaw valve applications at Quad-Cities are on the nitrogen system. They are not used on the diesel system.

No items of noncompliance or deviations were identified in this area.

12. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection on February 18, 1983 and summarized the scope and findings of the inspection activities. The licensee acknowledged the inspectors concerns.