

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-254/84-08(DRP); 50-265/84-07(DRP)

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: May 20 through June 23, 1984

Inspectors: A. L. Madison
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7-23-84
Date

Inspection Summary

Inspection on May 20 through June 23, 1984 (Reports No. 50-254/84-08(DRP); 50-265/84-07(DRP))

Areas Inspected: Routine, unannounced inspection by the resident inspectors of operational safety; maintenance; surveillance; Licensee Event Reports; procedures; regional requests; refuel; scrams; special observations; review of licensee's monthly performance report; IE information notice followup; radiation protection; review of CILRT and independent inspection. The inspection involved a total of 187 inspector-hours onsite by three NRC inspectors including 35 inspector-hours onsite during off-shifts, and 19 hours by region-based inspectors.

Results: Of the 14 areas inspected, two items of noncompliance were identified (failure to local leak rate test a gasketed penetration - Paragraph 14.c; failure to quantify leakage during ILRT - Paragraph 14.d).

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. Spedl, Technical Staff Supervisor
- *E. Mendenhall, Technical Staff

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 June 22, 1984.

2. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the months of May and June. The inspectors verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of 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 May and June, the inspector walked down the accessible portions of HPCI and standby gas treatment system of Unit 2 to verify operability. The inspector also observed portions of a valve lineup verification.

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

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 observed/reviewed:

Unit 1

Electrical maintenance aligning RHR service water pump
Electrical maintenance obtaining current readings from motor operated valve
Mechanical maintenance installing pressure reducer in reactor water cleanup system

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

4. Monthly Surveillance Observation

The inspector observed portions of the condenser low vacuum scram test, low pressure RHR pump discharge test, and the manual initiation of the standby liquid control system and demineralized water injection test and verified that testing was performed in accordance with adequate procedures, 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.

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

5. 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 actions was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with technical specifications.

a. Unit 1

(1) RO 84-005, dated April 14, 1984, Linear indications on reactor recirculation system welds. (See K. Ward Inspection Report 84-06(DE)).

(2) RO 84-009, dated May 19, 1984, Reactor Scram. (See Paragraph 9)

b. Unit 2

- (1) RO 83-22/01T-0, dated November 15, 1983, MSIV room interlock doors were found to have been defeated, (See Special Report 83-31-30(UPRP)).
- (2) RO 84-05, dated May 8, 1984, Repair of electromatic relief pilot valve.
- (3) RO 83-13/03L-0, RO 83-13/03L-1, dated September 1, 1983, Control Rod went to overtravel.
- (4) RO 83-24/03L-1, dated December 1, 1983, Some snubbers fail functional test. The most common cause of failure was worn capstan springs.

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

6. Procedures

For the procedures listed below, the inspector verified that they were in accordance with Technical Specifications and changes were made to reflect both licensee revisions and NRC requirements.

QAP 1900-11, Revision 2	Instructions for use of the Sygnetron photo-identification badge system
QAP 1500-2, Revision 13	Nuclear work request
QAP 1500-S1, Revision 1	Work request checklist
QAP 1500-T1, Revision 3	Nuclear work request form (86-2228)
QCP 300-2, Revision 6	Radioactive liquid discharge batch analysis
QCP 300-10, Revision 4	Radioactive solid batch analysis
QCP 300-S1, Revision 1	Radwaste solid batch sample analysis
QCP 700-15, Revision 3	Quad-Cities Units 1 and 2 determination of sodium sulfite
QCP 700-17, Revision 3	Determination of phosphate
QDM-13, Revision 1	As-built safety-related drawings
QDM-13, Revision 1	As-built safety-related drawing index
QOA 1300-6, Revision 6	RCIC automatic initiation
QOA 6600-4, Revision 3	Diesel generator trouble
QOA 6600-5, Revision 2	Diesel generator local start-up
QRP 1250-2, Revision 3	Personnel dosimetry placement guidelines
QRP 1250-10, Revision 1	Neutron monitoring
QRP 1250-S5, Revision 4	Multiple dosimetry log sheet
QOP 2099-4, Revision 3	Batch sampling or radwaste drumming line mixed 55 gallon drums
QOS 7500-4, Revision 6	Standby gas auto initiation and reactor building ventilation auto isolation

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

7. Regional Requests

Region III was notified of a potentially reportable deficiency per 10 CFR 50.55(e) regarding the suppression pool temperature monitoring

system. The temperature sensing tips are physically located such that during a LOCA they would be uncovered by water, resulting in a loss or indication.

The resident inspector ascertained through conversations with the licensee that during a LOCA the sensing tips would not be uncovered.

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

8. Refuel

Unit 1

Prior to reloading the core, fuel bundles are tested to ensure that the bundles are intact and not leaking. During this examination two bundles exhibited indications of leaking. These bundles were checked again to confirm the original findings. GE was contacted and a fuel specialist was sent to the site.

While preparing the bundles for further testing, two tie rods were discovered to have a manufacturing defect. The two tie rods (one in a once-burned bundle and one in a twice-burned bundle) had cracked. (The cracks probably resulted from water interacting with zirconium). All the other rods in both bundles were tested for wall thickness and whether or not water was inside the rods. All these rods had acceptable wall thickness and no water inside. These rods will be used to reconstitute two new bundles. The defective rods will be stored onsite. These items were not reported under the 10 CFR Part 21 reporting requirements. G. E. stated that the once-burned tie rod failure falls under the anticipated full failure rate. The twice-burned fuel bundle failure was hard to determine the exact cause of the failure, however, the licensee does not want to lift the tie rod for further examination, which may then separate and cause fuel pellets to become dispersed in the fuel pool. Fuel failure is not a generic concern as it has happened previously at other sites.

The resident inspector accompanied the senior operating engineer on a preliminary tour of the torus. The final tour will be conducted prior to startup.

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

9. Scrams

Unit 1

On May 19, 1984, at 8:40 a.m. the unit scrammed. Instrument mechanics were performing QIS-46-1, instrument scram response time. The test involves pulling a reactor protective system fuse and recording the time it takes to receive the half scram. At the same time, mechanical maintenance was working under the vessel and apparently hit IRM signal cables. Both activities occurred and a full scram was received. The vessel was unloaded at the time and the safety significance is minimal.

Unit 2

On June 10, 1984, at 1:50 p.m., the unit scrammed. The scram occurred during testing of the control valves. (Reactor power was reduced to 700 MWe for the test). The cause of the scram was the fast-acting scram solenoid being stuck in the energized position. When the test button was pushed, the circuit for fast closure was completed and the reactor scrammed. To prevent recurrences, the licensee will install an indicating light in the fast-acting scram solenoid circuit. (When the light is on, it will mean that the solenoid is energized and that valve should not be tested until solenoid is fixed).

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

10. Special Observations

- a. The licensee, prompted by reports of jet pump instrument nozzle cracks at other BWRs, conducted an examination of nozzles. The ultrasonic examination revealed no cracks.
- b. The licensee, prompted by a report of feedwater sparger cracks at one BWR, conducted an examination of the feedwater sparger. The remote visual examination, conducted by a level 2 UT-1 examiner, revealed no cracks. The resident inspector observed portions of the inspection, including setup and verification that the system could detect a wire 1 mil in diameter.

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

11. Review of Licensee's Monthly Performance Report

The inspector reviewed the licensee's monthly performance reports of Units 1 and 2 for the month of May 1984.

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.

12. IE Information Notice Followup

For the IE Information Notices (IEN) listed below, the inspector verified that the information notice was received by 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.

- a. IEN 84-18: Stress Corrosion Cracking in Pressurized Water Reactor System. Not applicable to Quad-Cities.

- b. IEN 84-01: Excess Lubricant in Electric Cable Sheaths. This phenomenon is not observed at Quad-Cities.
- c. IEN 84-02: Operating a Nuclear Power Plant at Voltage Levels Lower Than Analyzed. Degraded voltage protection has been installed on both units.
- d. IEN 84-03: Compliance with Conditions of License and Notification of Disability by Licensed Operators. A copy has been sent to training for their use. A copy was placed in the RO and SRO required reading.
- e. IEN 84-05: Exercise Frequency. Emergency Planning has received this notice for review as well as 84-05, Revision 1.
- f. IEN 84-07: Design-basis Threat and Review of Vehicular Access Controls. This has been reviewed. Additionally, a contract was awarded to Sandia Labs for analysis of several sites. Corporate security will advise the station if any changes are needed.
- g. IEN 84-08: 10 CFR 50.7, Employee Protection. A copy was forwarded to the personnel administrator for information.
- h. IEN 84-10: Motor-Operated Valve Torque Switches Set Below the Manufacturer's Recommended Value. This has been routed to the Electrical Maintenance Department. The station procedure is comprehensive and delineates actions to be taken prior to changing torque switch setpoints.
- i. IEN 84-11: Training Program Deficiencies. This has been sent to training supervisor for information and review.
- j. IEN 84-12: Failure of Soft Seat Valve Seals. Anchor/Darling feedwater check valves are not used at Quad-Cities.
- k. IEN 84-15: Reporting of Radiological Releases. The procedure has been changed to include two additional phone numbers for contacting the operation center.

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

13. Radiation Protection

During a plant tour, the resident noticed that the frisking stations were not being fully utilized. While realizing that this procedure was recently instituted, the inspector brought this observation to the licensee's attention.

The licensee initiated a program to ensure compliance with the procedure. (The program includes denying plant access to multiple offenders). The resident inspector felt the actions taken were sufficient and no further action is deemed necessary.

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

- (1) The reported leakage rate of 0.020 wt%/day is an estimated value for which no bases exist since the magnitude of the leakage rate was not measured.
- (2) The leak was repaired by tightening of the flange bolts.

Failure, by the licensee, to measure the actual leakage of the $\frac{1}{2}$ inch torus level instrument line flange constitutes a violation of 10 CFR 50, Appendix J, Section III.A.1.(a) and is an item of noncompliance (265/84-07-01).

The "as found" leakage rate, not including the repaired flange leak was 0.654 wt%/day; however, since an unquantified leak was repaired, the "as found" condition is considered to have exceeded the Appendix J limit of 0.75 wt%/day for this unit. The previous CILRT, performed during March 1980 also exceeded the Appendix J limit due to excessive leakage in the "A" feedwater line. Therefore, two consecutive "as found" conditions have failed to meet the acceptance criteria in 10 CFR 50, Appendix J, and as required by Section III.A.6.(b) the next Type A test shall be performed at the next plant shutdown for refueling unless exempted by the NRC.

d. Type B Tests

A review of the Type B results showed that the $\frac{1}{2}$ inch torus level instrument line flange, which is part of the containment boundary, was not local leak rate tested by the licensee. Discussions with the licensee revealed that:

- (1) The instrument was originally installed in 1980 and first declared operable in February 1981. Due to calibration problems it was relocated during July 1982, which should be the last time work was performed on the flange.
- (2) The flange has never been local leak rate tested.
- (3) No exemption request, from the testing requirements of Appendix J (Type B test), has been submitted to the NRC.

Failure by the licensee to perform local leak rate tests (Type B) on the $\frac{1}{2}$ inch torus level instrument line flange since its original installation constitutes a violation of 10 CFR 50, Appendix J, Sections II.G, III.B, and III.D and is an item of noncompliance (265/84-07-02).

15. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection on June 22, 1984, and summarized the scope and findings of the inspection activities. The licensee acknowledged the inspectors concerns.