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

REGION III

50-254/82-03; 50-265/82-03 (DPRP) Report No.

50-254; 50-265 License No. DPR-29: DPR-30 Docket No.

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

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

Inspection at: Quad-Cities Site, Cordova, IL

Inspection Conducted: January 9, 1982, through February 22, 1982

Inspectors: rissotimos DuPont

2-22-82 Roger D. Walkon

2-22-82

Approved by: Roger D. Walker, Chief Reactor Projects Section 1C

Inspection Summary

Inspection on January 9, 1982, through February 22, 1982 (Reports No. 50-254/82-03; 50-265/82-03 (DPRP)

Areas Inspected: TMI Action Plan Followup, Operational Safety Verification, Monthly Maintenance Observation, Surveillance, Monthly Surveillance Observation, Licensee Event Reports Followup, IE Circular Followup, IE Information Followup, Followup on Headquarters Request, Followup on Regions Request, Plant Scram, Review of Plant Operations, and Exit Interview. The inspection involved a total of 347 inspector-hours onsite by two NRC inspectors including 85 inspector-hours onsite during off-shifts. Results: No items of noncompliance were identified.

DETAILS

1. Persons Contacted

- *N. Kalivianakis, Superintendent
- T. Tamlyn, Assistant Superintendent Operations
- D. Bax, Assistant Superintendent Maintenance
- L. Gerner, Assistant Superintendent for Administration
- *J. Heilman, Quality Assurance, Operations
- *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 22, 1982.

2. TMI Action Plan Followup

Item II.E.4.2.5 - Containment pressure setpoint. The Office of Nuclear Reactor Regulation has accepted the licensee's response and no modifications are necessary.

Item II.F.1.4 - Containment pressure. The inspector reviewed the documents and has verified the installation of the additional Accident Monitoring System.

During the review of this documentation, the inspector discovered a weakness in the licensee's program for administrative control of modifications involving multiple work requests. The weakness was discussed with the licensee and they have corrected the identified concern by routing modification work requests from quality control to the modification coordinator. This provides a system in which the modification coordinator is aware of all work requests with respect to modifications. Also, procedure changes are being made.

Item II.F.1.3 - Containment high range monitor. As per letter dated January 22, 1982, from NRR, Commonwealth Edison has met the implementation date and is acceptable, provided Commonwealth submits procedures and correction factors to modify the instrument readings to correspond with the actual radiation levels inside containment. Item I.A.1.1 - Shift technical advisor. As per letter dated January 27, 1982, Crutchfield to DelGeorge, the operating reactors branch review indicated that the licensee's STA training program is acceptable in meeting the intent of the guidelines of NUREG-0660 and NUREG-0737.

Item II.K.3.22 - Automatic switchover of RCIC suction. The inspector reviewed documentation and witnessed portions of the testing.

Item II.K.3.15 - Modification of break detection logic to prevent spurious isolation of HPCI and RCIC. The inspector reviewed documentation and witnessed portions of the testing.

Item II.E.4.2 - Isolation on radiation signal of containment purge valves. The inspector reviewed documentation and verified appropriate procedure changes.

Item II.F.1.5 - Containment water level. The inspector reviewed the documentation and verified the installation of the transmitters.

Item II.K.3.24 - Space cooling for HPCI/RCIC modifications. Modifications for the systems is not necessary because cooling water supply pumps are powered by the diesel generators.

Item II.K.3.57 - Manual actuation of ADS procedures. The inspector verified that adequate procedures detailing the operability of low pressure ECCS systems prior to manual initiation of ADS are in place.

No items of noncompliance were identified.

3. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the month of January, 1982. 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.

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The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the month of January, 1982, the inspector walked down the accessible portions of the Unit 1 standby gas treatment system to verify operability. The inspector also witnessed portions of the radioactive waste system controls associated with radwaste shipments and barreling.

Technical Specification 3.6.B states that figure 3.6.1, Minimum Temperature Requirements per Appendix G 10 CFR 50, is effective through 6 effective full power years. At least 6 months prior to the 6th year, new curves will be submitted.

The proper time frame for submittal was performed by the station; however, due to an oversight by the corporate office, the documents were not submitted to NRC within the appropriate time frame. The submitted curve has no changes from the one now in Technical Specifications and thus no safety concerns exist. The concern as discussed with the office of Nuclear Reactor Regulation is of an administrative nature.

This is a licensee identified item of noncompliance. In accordance with Interim Enforcement Policy, 45 FR 66754 (October 7, 1980), IV.A Notice of Violation: a Notice of Violation will not be issued to a licensee item of noncompliance with severity levels V or VI. The immediate corrective action was to submit figure 3.6.1. Corporate corrective action followup is being conducted by Region III personnel and conclusions will be presented in a separate report.

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 were identified.

4. 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

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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 activity was observed:

Unit 1

WR 17646 Four rod display logic of control rod K6

The following maintenance activities were reviewed:

Unit 1

WR	15517	Diesel air start compressor
WR	16072	Diesel generator lube oil cooler
WR	17589	Replaced micro switches in RCIC turbine isolation logic

Unit 2

WR	10560	Target rock relief valve
WR	10638	Main steam safety valve
WR	10735	Electromatic relief valve
WR	12384	RHR - 37B valve
WR	15623	Hanger - 1202 - H1B
WR	16397	2A Recirculation pump seal
WR	16587	MSL drain valve
WR	16006	CRD - 1827
WR	16430	RHR 16A valve
WR	16362	Rebuild 480v breaker
WR	16457	Pressure suppression check valve
WR	16305	CRD restraint #2
WR	16137	Torus spray bypass valve
WR	16273	24 volt battery
WR	15720	SDV drain valve
WR	15725	SDV vent valve
WR	11580	RCIC pump suction
WR	15596	Offgas isolation timer
WR	16342	250 V.D.C. battery charger
WR	16267	CRD return line isolation valve
WR	16118	250 volt battery

Following completion of maintenance on the Unit 1 drywell equipment drain valve 1-2001-16 and the Unit 2 RHR system, the inspector verified that these systems had been returned to service properly.

No items of noncompliance were identified.

5. Surveillance

The inspector observed technical specifications required surveillance testing (other than calibrations and checks) performed on the following systems between February, 1981, and February, 1982:

Unit 1

Automatic air pump system operability RCIC pump and valve operability LPCI pump and valve operability Safety relief valve operability Diesel generator load test Diesel starting air test Diesel fuel transfer operability Secondary containment capability test

Unit 2

Automatic air pump system operability RHR room doors capability test Secondary containment capability test PCI valve closure timing Core spray pump operability Core spray valve operability Diesel generator load test Diesel starting air test Diesel fuel transfer operability

The inspector verified that the results were in conformance with technical specifications and procedural requirements.

The following surveillance and checksheets performed between February, 1981, and February, 1982, were reviewed:

Unit 1 and 2

QOS-005-S1	QOS-005-S2	QOS-020-1
QOS-020-2	QOS-030-1	QOS-030-2
QOS-030-3	QOS-030-4	QOS-200-1
QOS-200-2	QOS-200-3	QOS-200-4

QOS-200-S1	QOS-200-S2	QOS-200-S3
QOS-200-S4	QOS-202-6	QOS-202-7
QOS-230-1	QOS-230-S1	QOS-250-1
QOS-250-2	QOS-263-2	QOS-263-3
QOS-300-1	QOS-300-2	QOS-300-4
QOS-300-5	QOS-300-6	QOS-300-S1
QOS-700-1	QOS-700-2	QOS-700-3
QOS-700-4	QOS-700-6	QOS-700-8
QOS-700-S1	QOS-700-S3	QOS-700-S7
QOS-1000-2	QOS-1000-3	QOS-1000-4
QOS-1000-5	QOS-1000-S2	QOS-1000-S3
QOS-1000-S5	QOS-1300-1	QOS-1300-2
QOS-1300-3	QOS-1600-2	QOS-1600-4
QOS-1600-5	QOS-1600-7	QOS-1600-9
QOS-1600-10	QOS-1600-11	QOS-1600-12
QOS-1600-13	QOS-1600-14	QOS-1600-15
QOS-1600-18	QOS-1600-19	QOS-1600-20
QOS-1600-23	QOS-4100-1	QOS-4100-4
QOS-5670-1	QOS-6600-1	QOS-6900-2
QFD-100-3	OFP-100-3	QFP-200-4
QAP-500-8	QTS-100	QTS-130
QTS-160	QTS-260	QTS-300
QTS-1104	QTS-1300	QTS-1311
QIS-2	QIS-4	QIS-5
QIS-7	QIS-8	QIS-10
QIS-11	QIS-13	QIS-14
0IS-16	QIS-17	QIS-19
QIS-20	QIS-22	QIS-23
QIS-25	QIS-26	QIS-29
QIS-32	QIS-34	QIS-35
QIS-36	QIS-38	QIS-41
QIS-43	QIS-46	QIS-49
QIS-52	QIS-54	QIS-55
QTS-1311-1	QTS-1311-3	QTS-1311-4
QTS-1519-1	QTS-1519-5	
Unit 2		
QTS-1104-1	QTS-1104-S1	QTS-1104-S2
QTS-1512-1	QTS-1512-S2	QTS-1512-S1
QTS-100-1	QTS-100-3	QTS-100-4
QTS-100-5	QTS-100-6	QTS-100-7
QTS-100-8	QTS-100-9	QTS-100-10
QTS-100-11	QTS-100-12	QTS-100-13
QTS-100-14	QTS-100-15	QTS-100-16

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QTS-100-17	QTS-100-18	QTS-100-19
QTS-100-20	QTS-100-21	QTS-100-22
QTS-100-23	QTS-100-24	QTS-100-25

No items of noncompliance were identified.

6. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the Unit 1 anticipated transient without scram logic 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:

Unit 1

QOS-2000-1	Drywell floor and equipment drain systems	
	power operated valve testing	
QOS-7500-5	SBGTS operability	
QIS-51	Reactor pressure indication	
QIS-53	Drywell temperature indication	
QIS-54	Torus waterlevel indication	
QMS-100-1	Fire inspection	

No items of noncompliance were identified.

7. 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.

Unit 1

RO 81-23, dated November 26, 1981, steam leak was discovered on RCIC during surveillance.

RO 81-24, dated January 5, 1982, Unit 1 secondary containment integrity was inadvertently lost while preparing the underground section of the "A" RHR service water pipe for an internal inspection. An inspection flange was being installed on one end of the pipe located in the Unit 1 HPCI room. The failed "A" RHR service water line extends from the Unit 1 HPCI room to the "A" RHR service water vault located in the turbine building. Before the flange in the HPCI room was completely installed, the inspection flange in the "A" RHR service water vault was removed. With both ends of the service water line open, the integrity of secondary containment was lost.

The open end of the service water line in the turbine building is located in a sealed, watertight RHR service water vault. Following this occurrence, the licensee demonstrated that with this pipe open at both ends a negative pressure on secondary containment as required by Technical Specifications was able to be maintained utilizing only the building ventillation system without assistant from standby gas treatment operation.

The consequences of this occurrence were minor and posed no safety hazard.

Corrective action for this incident which included further instructions on the existing procedure for opening secondary containment to the personnel involved is adequate. This particular maintenance activity was of a special nature. The licensee plans to reroute the pipe and thus no further activities involving this pipe are planned.

This is a licensee identified item of noncompliance. In accordance with Interim Enforcement Policy, 45 FR 66754 (October 7, 1980) IV.A Notice of Violation: A Notice of Violation will not be issued to a licensee item of noncompliance with severity levels V or VI.

Unit 2

RO 81-17, dated September 7, 1981, electromatic relief valve 2-203-3E failed to open during surveillance.

Concerning RO 81-17, the cause of the failure was attributed to grooves worn into the disc guide sleeve of the main disc ring. The valve was replaced with a spare and the worn disc guide sleeve replaced. The 3E relief valve is scheduled to be inspected during every refueling outage.

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RO 81-18 and revision 1, dated September 8, 1981, various PCIV's failed local leak rate testing.

RO 81-19 and revision 1, dated September 29, 1981, various RHR service water vault penetrations failed local leak rate testing.

RO 81-20, dated September 28, 1981, various ACAD pressure valves failed local leak rate testing.

Concerning RO's 81-18, 81-19 and 81-20 and revisions, the inspector verified the data recorded during the LLRT to ensure the following valves and penetrations had completed a successful test.

Valves

2-203-2A	2-220-58B
2-2301-45	2-220-62B
2-1301-41	2-220-62A
2-1301-17	2-1001-36B
2-1001-36A	2-1601-20B
2-220-1	

Penetrations

RHR service water vault penetrations

P21	P32	P3.3
MK127	MK308	MK479

No items of noncompliance were identified.

IE Circular Followup

8.

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

IE Circular 81-08, dated May 29, 1981, Foundation Materials. No settlement problems have occurred at Quad-Cities.

IE Circular 81-13, dated September 25, 1981, Torque Switch Electrical Bypass Circuit for Safeguard Service Valve Motors. A procedure and circuitry review was conducted and appropriate action recommended.

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IE Circular 81-14, dated November 5, 1981, MSIV Failures to Close. Modifications and new compressors are being installed. Also, an additional review of the instrument air system is being performed.

No items of noncompliance were identified.

9. 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 81-39, dated December 23, 1981, EPA Crosscheck Program - Low Level Radioiodine in Water Intercomparison Study.

IE Information Notice 81-38, dated December 17, 1981, Potentially Significant Equipment Failures Resulting from Contamination of Air-Operated Systems.

IE Information Notice 81-37, dated December 15, 1981, Unnecessary Radiation Exposure to Public and Workers during Events Involving Thickness and Level Measuring Devices.

IE Information Notice 81-36, dated December 3, 1981, Replacement Disphragms for Robertshaw Valve (Model No. VC-210).

IE Information Notice 81-35, dated December 2, 1981, Check Valve Failures.

IE Information Notice 81-34, dated November 16, 1981, Accidental Actuation of Prompt Public Notification System.

IE Information Notice 81-33, dated November 9, 1981, Locking Devices Inadequately Installed on Main Steam Isolation Valves.

10. Followup on Headquarters Requests

With regards to the General Electric generic letter concerning Modification of Vertical Lift Metal-Clad Switchgear Equipment

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Short-Circuit Bracing, the licensee does not utilize this equipment on safety-related buses. The four buses that utilize this equipment will be evaluated for applicability.

No items of noncompliance were identified.

11. Followup on Region's Requests

a. The senior resident inspector was requested to determine the applicability of a potentially generic issue concerning diasel generators. Specifically, low oil level on Woodward model governors which causes tripping of the diesel on overspeed.

The type of diesel and governor utilized at Quad-Cities differs from the one described. The diesel is manufactured by Western Engine and the Woodward governor is a model UG-8.

The oil level for the governor is visible without diesel operation and is maintained between two graduated lines on a sight glass.

Licensee procedure QMP-200-S1 "Monthly Diesel Maintenance" includes a specific check for this oil level prior to operation following maintenance. In addition, although not specified, equipment operators on routine tours also check for level and leaks of oil in the diesel generator rooms.

The differences in design, coupled with the licensee's routine checks, demonstrates that low oil level in the governor would be detected. The licensee has instructed the equipment attendants in regards to this matter.

The inspector has no further concerns in this area.

b. The inspector verified that the installed fireproof and fireproof/bulletproof doors were manufactured by the following suppliers and not by Protective Materials, Inc.:

Phillipp Manufacturing Company, East Hampton, MA F. L. Saino Manufacturing Company, Memphis, TN Steelcoaff Manufacturing Company, Cincinnati, OH

No items of noncompliance were identified.

12. Plant Scram

Following the plant scrams on January 27 and February 18, 1982, on Unit 1 and January 3, 1982, on Unit 2, the inspector ascertained the status of the reactor and safety systems by direct observation of the control room indications and discussions with licensee personnel concerning plant parameters, emergency system status and reactor coolant chemistry.

The inspector reviewed the immediate actions taken by the licensee and witnessed the corrective actions taken. The actions taken included immediate notification of the NRC operations center.

The cause of the Unit 1 scram on January 27, 1982, was determined to be from a spurious scram signal from the reactor vessel high pressure logic. The inspection by the licensee had eliminated system malfunction or the existence of an actual high pressure condition.

The Unit 1 scram on February 18, 1982, was also from a spurious trip of the reactor vessel high pressure and reactor vessel low level logics. The licensee determined that the scram resulted from vibrations associated with the installation of a required fire box to the instrument rack containing the switches for both the reactor vessel high pressure and low level logics.

Concerning the scram of Unit 2 on January 3, 1982, the cause was determined to be from the closure of the "B" feedwater regulation valve from a loss of oil pressure resulting in a reactor vessel low water level scram.

No items of noncompliance were identified.

13. Review of Plant Operations

During the months of July, 1981, through January, 1982, the inspector reviewed the following activities.

a. Procurement

The inspector reviewed procurement and storage activities to ascertain whether the purchase of components, materials and supplies used for safety related functions, is in conformance with the licensee's approved QA program and implementing procedures; non-conforming items are segregated and marked accordingly; applicable preventive maintenance is performed; housekeeping and environmental requirements are met; and, limited shelf-life items are controlled.

The following components were inspected:

(1) Main steam isolation valve's rod seals

(2) Control rod drive repair kits

b. Review and Audits

On January 20, 1982, the inspector sat in on an onsite review committee meeting. The inspector verified that provisions of technical specifications dealing with membership, review process, frequency, and qualifications were met. The inspector also verified that decisions made were reflected in the meeting minutes and that corrective actions proposed were taken.

On January 12, 1982, the inspector witnessed an audit conducted by the licensee's offsite audit team and verified conformance with technical specifications and QA procedures.

c. rraining

The inspector reviewed the licensee's operator requalification lecture series and verified that lesson plan objectives were met and that training was in accordance with the approved operator requalification program schedule and objectives.

The inspector verified by direct questioning of one new, two existing, and one temporary employee that administrative controls and procedures, radiological health and safety, industrial safety, controlled access and security procedures, emergency plan, and quality assurance training were provided as required by the licensee's technical specifications; verified by direct questioning of one craftsmen and one technician that on-the-job training, formal technical training commensurate with job classification, and fire fighting training were provided.

d. Environmental Protection

The inspector verified the installation and operability of seven monitoring stations and associated equipment and reviewed records for completeness and accuracy.

e. Licensee Action Concerning Identified Problems

The inspector reviewed corrective actions taken by the licensee pertaining to recurring failures and resolution of identified discrepencies involving safety-related components.

No items of noncompliance were identified.

14. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection on February 22, 1982, and summarized the scope and findings of the inspection activities. The licensee acknowledged the inspectors comments.