



**Commonwealth Edison**

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AMS-94-023

August 10, 1994

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

SUBJECT: Quad Cities Nuclear Station Units 1 and 2  
Changes, Tests, and Experiments Completed  
NRC Docket Nos. 50-254 and 50-265

Enclosed please find a listing of those facility and procedure changes, tests, and experiments requiring safety evaluations completed during the month of July, 1994, for Quad-Cities Station Units 1 and 2, DPR-29 and DPR-30. A summary of the safety evaluations are being reported in compliance with 10CFR50.59 and 10CFR50.71(e).

Respectfully,

ComEd  
Quad-Cities Nuclear Power Station

Anthony M. Scott  
System Engineering Supervisor

AMS/dak

Enclosure

cc: J. Martin, Regional Administrator  
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SAFETY/NRC-LTR

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Vendor Recommended Upgrade on Drywell Personnel  
Hatch Interlock Door Shafts and Shaft Couplings

**DESCRIPTION:**

Per the Primary Containment Personnel Access Hatch Interlock Door vendor, Chicago Bridge & Iron (CBI), the current shaft couplings were replaced with a new style flexible coupling. The new couplings improve the overall performance of the doors and are easier to defeat in an emergency than the current style couplings, per the vendor. In order to install the new couplings, the interlock door shafts were machined down to a 1.5" dia. from the current 1.75" dia. This shaft change and new coupling installation does not affect the pressure integrity of the interlock doors and also improves the operating mechanism of the doors, making it less likely that the door opening mechanism will bind and personnel will be trapped inside the drywell or the interlocks. The 1.5" shaft dia. is more than sufficient to withstand the torque applied to them during door movement. This size shaft is used at other ComEd sites which also use this style coupling. Site Engineering reviewed and approved this vendor recommended upgrade per their response to SESR 4-2300.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

LOCA

UFSAR SECTION 15.6

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because since the pressure integrity of the doors will not be affected by this change, and the door operating and interlock mechanism will function as well or better than the current configuration, there is no possibility of an accident or malfunction of a type different from those evaluated in the UFSAR.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

Provided for more complete documentation when changing setpoint. Provided better direction for control of procedure while temperature setpoint is not set at 140° F.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because this procedure provides instruction and documentation of the setup and setdown of the Non-Regenerative heat exchanger outlet temperature isolation setpoint. This change allows the setpoint to be setup from 140 °F to perform Reactor Water Cleanup System activities other than just system fill, vent, and pump start, any of which could possibly cause Non-Regenerative heat exchanger outlet temperature to increase. The 140°F isolation closes MO 1201-2, -5, and -80 to protect the filter/demineralizer ion exchange resins from breaking down and subsequent intrusion into the Reactor Pressure Vessel. The filter/demineralizers are off-line and manually isolated prior to performing this procedure to ensure resin breakdown will not occur. The Group III isolation (+8" Reactor Water Level) and the Standby Liquid Control Injection Isolation are not affected by this procedure. After the related activity has been completed, the temperature setpoint is setdown to 140°F for normal system operation. The setpoint adjustments are

verified and documented in the procedure. Based on this information, this procedure will not create the possibility of an accident or malfunction not previously evaluated in the UFSAR.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

Required a Qualified Nuclear Engineer to be present for all Control Rod movements except those movements directed by abnormal operating procedures or when performing Control Rod exercising. Added steps and revised steps to make procedure more descriptive as to who could independently verify Control Rod movements and the function that person is to perform.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Control Rod Drop Accident                      UFSAR SECTION 15.4.10

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because plant operation remains unaffected by the changes to this procedure. The revision requires the QNEs to be present more often than previously and also requires those performing Control Rod independent verifications to be qualified as verifiers. Interactions with other structures, systems, or components remains unchanged.

This revision will not affect equipment failures. The changes being made do not alter the operation or status of any equipment used or referred to in this procedure. In addition, this procedure does not change actions to be taken in the event that any equipment failures do occur.

Therefore, this change does not adversely impact systems or functions so as to create the possibility of an accident or malfunction of a type different from those evaluated in the UFSAR.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

SE-94-059  
QCTS 310-1, QTS 110-1 Procedure Revisions

**DESCRIPTION:**

The change: 1) Writer's guide enhancements; 2) Addition of drawing references; 3) Addition of banana jack location for connection of chart recorders; 4) Addition of monitoring EDG 1 and 1/2 frequency; 5) Addition of equipment numbers; 6) Addition of EDG single load reject and synchronizing tests to meet requirements of QCAP 400-14, NOD TS.20 (Emergency Diesel Generator Reliability Program) and Reg Guide 1.9 (Selection, Design, Qualification and Testing of Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants); and 7) Added verification of 13-1 and 23-1 cross-tie breakers open prior to Division I portion of test.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Loss of Coolant Accident	UFSAR SECTION 15.6
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For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the changes made to this procedure do not create the possibility of an accident different from those evaluated in the UFSAR. The simulation of the ECCS signal and verified response of the ECCS systems will remain the same as in the original procedure. These changes only clarify the information to be verified, the order they are verified in, and minimize redundant testing performed in this surveillance.



SE-94-059 CONTD

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

The implemented change allowed the piping and valves of the Off-Gas System at Quad Cities to be inspected, maintained, and repaired in accordance with the original code of construction requirements of ANSI B31.1-1971 "Power Piping Code". The current classification for these components is Non-Safety-Related, ASME III, Subsection ND, Class 3.

The document change involved deleting reference to ASME III requirements for piping and valves as they appear in the following documents:

- a. Rebaseline UFSAR (Referenced attached preliminary FSAR submittal review forms QTP 200-56)
  - Section 3.2.9; Industry Code Applicability to Non-Reactor Coolant Pressure Boundary Components
  - Section 10.4.2.1; Design Bases - Main Condenser Evacuation System
  - Section 11.3.1.1; Off-Gas System
- b. Master Equipment List, Rev. 0 Tab 5400 (Off-Gas Components)
- c. Specification R-4411, Rev. 5, General Work  
Specification - Maintenance/Modification Work
- d. Off-Gas System P&IDs:
  - M-42 Shts. 1, 2, and 3
  - M-71 Sht. 3
  - M-84 Shts. 2 and 3

Vendor drawing 774E904, Rev. 2 for the Off-Gas Condenser was superseded by the latest supplied vendor drawing for this component (GE drawing 774E963, Rev. 3). The primary difference in these two drawings is that 774E904 included ASME Section III references.

The original Off-Gas System was modified in which a General Electric Recombiner/Carbon Bed Absorber System (RECHAR) was retrofit to the existing 30 minute hold-up Off-Gas System. Due to uncertainties in system design requirements the Atomic Energy Commission (AEC) would impose or accept, GE conservatively specified Quality Group C requirements be met as expressed in APED Design Specification N62-4020. This required the non-safety-related components to meet ASME B&PV Code Section III requirements. (Reference GE-NE-668-14-0493/April 1993).

This reclassification allowed a relaxation in the requirements for Off-Gas System piping and valves to Code Requirements consistent with guidelines as presented in Table 1 of Reg. Guide 1.143. These changes significantly reduce the maintenance and procurement requirements for the Off-Gas System.

Regulatory Guide 1.143, "Design Guidance for Radioactive Waste Management Systems, Structures and Components Installed in Light-Water-Cooled Nuclear Power Plants", later provided acceptable design practices and methodologies for radioactive waste processing systems. A comparison of Reg. Guide 1.143 accepted design codes vs. Quad Cities reclassified Off-Gas System for piping and valves is as follows.

	Design and Fabrication	Materials	Welder Qualification	Inspection and Testing
Reg. Guide 1.143	ANSI B31.1	ASTM & ASME Code Sec. II	ASME Code Sec. IX	ANSI B31.1
Quad Cities Off-Gas System	ANSI B31.1	ASTM & ASME Sec. II	ASME Code Sec. IX	ANSI B31.1

The reclassified Off-Gas System piping and valve code requirements is consistent with Reg. Guide 1.143 accepted codes.

A review of the original design requirements for the RECHAR System indicate the supplemental requirements of Reg. Guide 1.143 are satisfied as expressed in regulatory positions 2.1.1, 2.1.2, 2.1.3 and 4 of the guide.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Control Rod Drop Accident

UFSAR SECTION 15.4.10

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the change as described does not cause a functional change in the system or its interaction with other plant systems. It does not alter any physical parameters or process variables of the plant. Due to the nature of the change, there are no new inherent failure modes introduced to the system, and the change does not add any new components or process routes.

A failure analysis for the major Off-Gas System components has previously been performed and is presented in Special Report #1 to the Quad Cities UFSAR for Units 1 and 2. Based on this information, the reclassification of the Off-Gas System piping and valves does not create the possibility for an accident not previously reviewed in the SAR.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

NWR Q07145 replaced temperature transmitter TT 1/2-5795-8 because it was out of calibration and readings were not repeatable.

NWRs Q13547 and Q13548 replaced pressure indicators PI-001-2741-8 and PI-002-2741-8 with narrower range components to give improved indication of the system operating pressure.

NWRs Q14268, Q14269 and Q14291 replaced pressure indicators PI-001-1904-2-5A, PI-001-1904-2-5B and PI-001-1904-2-9 with wider range components to ensure indicator range is wider than pressure spikes which occur during system start up.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Control Room Dose Rates                      UFSAR SECTION 15.6.5.5.3

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because replacing the temperature transmitter for the Control Room HVAC "A" Train will not adversely impact systems or functions. The replacement transmitter has been evaluated and will perform the same function as the original transmitter. It will not increase the probability or consequences of an accident or malfunction of a type different from those evaluated in the SAR.

Replacing the HWC oxygen supply pressure indicators with narrow range indicators will not adversely impact systems or functions. The replacement indicators, which have a burst pressure higher than the system design pressure, do not add any new failure modes (same make/model) or revise operating modes. The smaller scale enhances oxygen injection system monitoring capabilities.

Replacing the Fuel Pool Cooling Pressure indicators with indicators with a higher range does not adversely impact systems or functions. The replacement indicators do not add any new failure modes (same make/model) or revise operating modes. The higher range scale will prevent indicator damage during pressure spikes, which will enhance system monitoring reliability while the decreased accuracy (due to larger scale increments) does not adversely affect system trending abilities.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

DCR 4-94-025 requested the update of several design documents to reflect the as-built condition of the plant. The following paragraphs describe the changes to these design documents.

Pressure Transmitter PT-1-1406A has a computer point associated with the Pressure Indicator PI-1-1450-1A for indication of the Core Spray 1A Pump Discharge. The computer point is A1108 per the Quad Cities Analog Point List, dated 5/25/93. Drawing CID-36 was revised to indicate the proper computer point (A1108).

On Drawing M-21, both drawing continuation arrows for the Service Water inlet to the Turbine Building Closed Cooling Water (TBCCW) system were shown going to the other area and no flow direction could be discerned. This is a Service Water inlet, thus the arrow at coordinate B-5 was reversed to agree with the arrow at coordinate B-9.

Pressure Indicators PI-1(2)-1001-70A/B/C/D are on the suction side of the Residual Heat Removal (RHR) pumps and are used for surveillance testing. The pressure indicators have insufficient range under normal operation and, therefore, their isolation valves are to be shown as normally closed.

Off-Gas system wiring diagram 4E-6266 was revised to correct a drawing reference associated with the Off-Gas System panel 2201-27.

The DCR also updated the component description title on the Key, Schematic, Wiring and Installation drawings (4E-1325, 4E-1659B, 4E-1659C, 4E-1659H, and 4E-1674) for Heater Control Center 17-6. The description was changed from "Waste Surge Tank 1/2, 480 VAC Heater Control Center 17-6" to "River Discharge Tank 1/2, 480 VAC Heater Control Center 17-6."

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.



- The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
- Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Decrease in Heat Removal by the Reactor Coolant System	UFSAR SECTION 15.2
Reactivity & Power Distribution Anomalies	UFSAR SECTION 15.4
Postulated Liquid Releases Due Liquid Tank Failures	UFSAR SECTION 15.7.1
Decrease in Reactor Coolant Inventory	UFSAR SECTION 15.6

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because this DCR does not document any physical changes to the plant structures, systems or components, so there is no potential affect on equipment failures.

The inclusion of the computer point reference, correct drawing references, proper flow direction, proper valve position, and revising the component titles are editorial enhancements to improve the usability of these drawings.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.



**DESCRIPTION:**

The Pressure Indicator PI-1/2-1741-201 on the Separate Particulate Iodine and Noble Gas (SPING) Monitor 1/2-1774A for the Main Stack Sampling System (Drawing M-461 Sht. 4) was replaced. The new indicator is an Ashcroft Model 1188 with a range of 0 to 10" Hg Vacuum.

No detailed vendor information was available on the old gauge. However, per QCCP 400-6 this gauge had a full calibrate range of 0 to 10" HG.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:

The change alters the initial conditions used in the UFSAR analysis.

- The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
- Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Control Rod Drop Accident	UFSAR SECTION 15.4.10
Steam System Line Break	UFSAR SECTION 15.6.4
Outside Containment	

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because replacing the SPING Monitor pressure indicator PI-1/2-1741-201 with a similar component will not adversely impact systems or functions. This component will perform the same function as the original indicator. The replacement PI has the same scale range as the previous component and does not add any new failure modes or revise operating modes.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

This DCR revised schematic diagrams 4E-1493 and 4E-2493 to reflect changes in Equipment Piece Numbers (EPNs) for instrumentation associated with Reactor Temperature Monitoring and Vessel Process Systems. The revised EPNs match the EPNs used in the plant.

Also, this DCR revised schematic diagrams 4E-7841R and 4E-7841T to show relay contacts and describe their function for existing relays associated with the Unit 2 High Radiation Sample System (HRSS). These existing contacts are part of the light indication circuits for HRSS panel 2-R-601.

Additionally, this DCR revised single line diagrams 4E-1811B and 4E-2811B and schematic diagrams 4E-1575BK and 4E-2575BX to provide clarification for the existing annunciator inputs associated with the operating status of Uninterruptable Power Supply (UPS) panels 901-63 and 902-63.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Increase in Heat Removal By the Reactor Coolant System	UFSAR SECTION 15.1
Decrease in Reactor Coolant System Flow Rate	UFSAR SECTION 15.3
Reactivity and Power Distribution Anomalies	UFSAR SECTION 15.4
Decrease in Reactor Coolant Inventory	UFSAR SECTION 15.6
Anticipated Transients Without SCRAM	UFSAR SECTION 15.8

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the revised drawings for the Reactor Temperature Monitoring and Vessel Instrumentation will reflect EPNs used in the plant. Information on the revised EPNs required to update station procedures is being coordinated by the station's drawing "as-built" program. The revised drawings will provide better assistance to operations and maintenance personnel and will not add any new accident scenarios.

The revised drawings for the HRSS System will reflect the existing relay contacts for light indication circuits on Unit 2 HRSS Panel 2-R-601. These drawings help clarify existing design and will not add any new accident scenarios.

The revised drawings for the UPS System will reflect the existing annunciator inputs for UPS Panels 901(2)-63. These drawings help clarify existing design and will not add any new accident scenarios.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

Wiring Diagrams 4E-1623A; 4E-1639B; and 4E-169C: These drawings revised the wiring diagrams on the Unit 1 Turbine Control Valve and EHC system to reflect actual field conditions. On drawings 4E-1639B and 4E-1623A; cable 16015 had the terminations for the red and white conductors reversed. For drawings 4E-1639C and 4E-1623A, two conductor cables were installed in lieu of a 4-conductor cable as specified for cable 16017.

Piping Diagram M-58, Sheet 1: The "A" and "B" designations for valves 1/2-1301-21A and B, 1/2-2301-12A and B and 1/2-2301-13A and B were reversed on the drawings. This DCR corrects the designations on the drawings to align the valves with the associated Contaminated Condensate Storage Tank (1/2-A-3303 and 1/2B-3303) and to match the actual field configuration.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Load rejection without bypass	UFSAR SECTION	15.2.2.1
Load rejection with bypass (Loss of electrical load)	UFSAR SECTION	15.2.2.2
Loss of Coolant	UFSAR SECTION	15.6.2, 15.6.5
Main Steam Line Break	UFSAR SECTION	15.6.4

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because no new accident scenarios are created by this DCR. The function of the Contaminated Condensate Storage, HPCI, RCIC and the Turbine Control Valves and their ability to operate are unchanged. This DCR will not adversely impact systems or functions nor will the possibility of an accidental malfunction be created that is different from those previously evaluated in the SAR.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

The aforementioned procedures have vibration limitation requirements of 5 mils and 13 mils placed in the "limitations and actions" portion of the surveillances. This requirement was based on the HPCI VETI manual recommendations for turbine operation. Based on past testing data for the HPCI turbine vibration probes, VD-1 and VD-2, a problem exists in the mounting of the probes such that the vibration readings are much higher than actual vibration readings. Therefore, the procedures were revised such that the vibration readings will be determined by qualified IST personnel only.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the probes are mounted incorrectly on the turbine shaft, the readings observed on the vibration recorder during a HPCI surveillance test are much higher than actual vibration readings. This has been verified by comparing the vibration readings from the vibration recorder with the vibration data recorded using hand accelerometers. Therefore, the procedure will be changed such that the IST personnel will evaluate vibration readings. This is consistent with industry standards.

SE-94-60 CONTD

Presently, the IST vibration program has more conservative acceptance criteria than the procedure. The procedure states the vibrations on the turbine should be below 5 mils (1.05 in/sec) during operation. Above 5 mils, notify SE and System Engineer and if the turbine exceeds 13 mils (2.72 in/sec), then the system should be declared inoperable. This is based on the vendor recommendations. The IST acceptance criteria is: below 1.55 mils (0.325 in/sec) is acceptable, 0.325-0.7 in/sec (1.55 mils 3.3 mils) is alert range, and above 0.7 in/sec HPCI is declared inoperable. Therefore, the system will be monitored for proper vibration trends and will allow for proper action to be taken if a vibration concern exists.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.



SE-94-061  
QCAP 215-1, Shift Orders

**DESCRIPTION:**

This new procedure implemented portions of INPO Guideline 85-017 related to Shift Orders.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because this procedure revision does not direct any actions which could adversely impact systems or functions so as to create the possibility of an accident or malfunction of a type different from those evaluated in the UFSAR. This procedure only states those guidelines suggested by INPO Guideline 85-017 for proper development and use of Shift Orders.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.



**DESCRIPTION:**

The new procedure delineates the requirements of the section of INPO Guideline 85-017 related to notifications.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:

- The change alters the initial conditions used in the UFSAR analysis.
- The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
- Operation or failure of the changed structure, system, or component could lead to the accident.

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the procedure deals only with the administrative makeup of notification procedures. As such, it does not create a new type of accident or malfunction.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

This change upgraded procedure to enhanced version and include several steps implementing INPO Guideline 85-017 regarding logkeeping.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because this procedure deals with the administrative aspects of logkeeping and record keeping. As such, it does not impact systems or functions in any manner that could create a new type of accident or malfunction.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

This is a new procedure which describes the administrative aspects of logkeeping in accordance with INPO Guideline 85-017.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the procedure deals only with the administrative aspects of logkeeping. As such, it does not create a new type of accident or malfunction.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

**DESCRIPTION:**

This new procedure implemented portions of INPO Guideline 85-017 related to training and qualification of Operations Personnel.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because this procedure revision does not direct any actions which could adversely impact systems or functions so as to create the possibility of an accident or malfunction of a type different from those evaluated in the UFSAR. This procedure only states those guidelines suggested by INPO Guideline 85-017 for proper training and qualification of Operations Personnel.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

M04-0-93-003B

Bus 18 to 1/2 Diesel Generator Cooling  
Water Pump Feed Breaker Control Logic Change

**DESCRIPTION:**

This Partial Modification moved the Switchgear 18, 1/2 DGCWP feed breaker closing circuit undervoltage interlock to prevent closing the breaker until there is adequate voltage at Bus 18. This was accomplished by rewiring the 5-6 "b" contact from relay 227B18X3 in the closing circuit of the breaker such that it can not be bypassed. This modification also removed contact 9-10 of relay 227B18X2 from the existing trip circuit and add an "a" contact from relay 227B18X3 in its place. This eliminates the possibility of having the 5-6 "b" contact from relay 227B18X2 enable the breaker to close prior to having the contact from relay 227B18X2 open (which would cause a breaker trip). This ensures that the signal to close the breaker is received simultaneously with the opening of the trip signal to the breaker. The Partial Modification was performed to ensure that the 1/2 DGCWP was fed from an adequate power supply.

**SAFETY EVALUATION SUMMARY:**

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

LOCA

UFSAR SECTION 15.6.5

of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the partial modification has no effect on the operating modes of the plant or on equipment functions. The installation of the new control circuit

logic configuration ensures that the 1/2 DGCWP feed breaker at Bus 18 does not close until there is adequate voltage at Bus 18, regardless of the position of the power supply selector switch (1/2-3903-SS1). This prevents the breaker from locking itself out and causing the 1/2 DGCWP to fail to start. Therefore, the Partial Modification would not create the possibility of an accident or malfunction of a type different from those evaluated in the FSAR/UFSAR.

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

## H5 Shroud Weld Reactor Vessel

### DESCRIPTION:

As a result of In Vessel Visual Inspections, Quad Cities has identified cracking at the shroud H5 weld location. Subsequent UT Investigation has identified the crack depth to be no deeper than 1.24 in. This Safety Evaluation was performed to evaluate operation of Quad Cities Unit 1 for at least one cycle.

### SAFETY EVALUATION SUMMARY:

1. The change described above has been analyzed to determine each accident or anticipated transient described in the UFSAR where any of the following is true:
  - The change alters the initial conditions used in the UFSAR analysis.
  - The changed structure, system or component is explicitly or implicitly assumed to function during or after the accident.
  - Operation or failure of the changed structure, system, or component could lead to the accident.

The accidents which meet these criteria are listed below:

Main Steam Line	UFSAR SECTION	3.9.5.3,
Break (Bounding)		(15.6)
Recirculation Line Break	UFSAR SECTION	3.9.5.3,
(Bounding)		(15.6)

For each of these accidents, it has been determined that the change described above will not increase the probability of an occurrence or the consequence of the accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the actual ligament is significantly larger than the required ligament for the loading combinations specified in the design basis, even conservatively considering a load combination of design basis accident plus design basis earthquake. The design basis performance of the shroud is not degraded as a result of the identified cracks at the H5 weld. Because the identified ligament is sufficiently larger than the required ligament, the accident scenarios described in the UFSAR do not change as a result of this issue. There are no new accident created not previously evaluated in the UFSAR.

H5 Shroud Weld Reactor Vessel CONTD

3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.