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**ComEd**

LWP-95-087

September 26, 1995

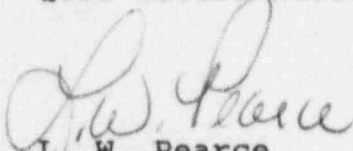
U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

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 months of July and August, 1995, 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

  
L. W. Pearce  
Station Manager

LWP/dak

Enclosure

cc: H. Miller, Regional Administrator  
C. Miller, Senior Resident Inspector

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C04-2-94-002  
2A Service Water Pump

**DESCRIPTION:**

Component Replacement C04-2-94-002 removed the existing Worthington 2A Service Water pump (2A-3901) located in the Crib House, and replaced it with an equivalent Johnson pump. These two pumps are identical in their operating parameters and dimensional configurations. Three Service Water pumps (1A, 1B, & 2B) have already been changed out from a Worthington to a Johnson pump. The first change out to the Johnson pump was completed in 1978. It has been proven through operational experience that the Johnson pump has less vibration and a more reliable history. In addition, a Rains-Flo packing configuration with an external reservoir was added to prevent external packing leaks and increase reliability of the Service Water Pump. This packing replacement has also been completed on the other three Service Water pumps mentioned above, with satisfactory results.

**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 Offsite Power    | UFSAR Section 8.3.1.6 & 9.2.2. |
| Loss of Coolant Accident | UFSAR 8.3.1.6, 9.2.2 AND 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 performance of the Johnson Pump will be equivalent or better than the Worthington Pump. Each pump is rated for 13,800 GPH and a total discharge head of 225 feet. There are no piping changes involved. The Johnson pump weighs slightly more than the Worthington pump but has a larger base which maintains the floor loading practically equivalent. The running motor current is expected to increase slightly but the motor full load current is not changed. Thus, an ELMS study or load ticket is not required for this change. The addition of Rains-Flo packing will prevent a packing leak from being external to the system but does not change the method of packing.

The loss of one Service Water pump does not impact any system because adequate cooling can be maintained with four Service Water Pumps as discussed in UFSAR Section 9.2.2. Both units are designed to be safely shutdown on a loss of Service Water. A Service Water pump can be picked up by the Emergency busses at the discretion of Operations in accordance to approved Stations procedures. The availability of Service Water to provide Standby Coolant is still maintained since the flow and head characteristics are met by the new pump. This change does not create a malfunction that is not bounded by those 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.

E04-0-92-053  
Emergency Diesel Generator

**DESCRIPTION:**

Installation of new fuel cut-off valve in each of the Emergency Diesel Generator (EDG) fuel oil day tank supply lines to EDGs. In addition to the cut-off valve, a gate valve was replaced by a threaded union on Unit 2.

**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 Auxiliary Power | UFSAR Section 8.3.1           |
| LOCA                    | UFSAR Sections 15.6.2, 15.6.5 |

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 by providing a reliable cut-off valve for the fuel oil day tank, which will provide an isolation means for preventive maintenance (with procedures in place for its operation) and inspections for installation welding, leak test performed during the monthly surveillance (QCOS 6600-1). This valve should perform as intended and will not create 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.



## Replacement of U2 Drywell Pneumatic Air Dryers

**DESCRIPTION:**

The Drywell Pneumatic System air dryers 1(2)-4769A & 1(2)-4769B were replaced because the existing equipment was obsolete and replacement parts could not be easily obtained. In addition, the dryers previously installed had extreme operating hours logged against them, which decreased their reliability. These dryers functioned to remove moisture from the atmosphere taken off the drywell, compressed, filtered and piped to a receiver tank utilized to supply pneumatically-controlled equipment inside the containment. Failure of the dryers to function could cause air with excessive moisture to be supplied to equipment required to support plant operation thus increasing their potential for failure. This system is required to operate the reactor.

**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:

Inadvertent Closure of the MSIVs                      UFSAR Section 15.2.4

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 failure of the new dryers could, in the worst case, cause only a loss of Drywell Pneumatic System air/nitrogen supply to the affected unit. This would cause a closure of the MSIVs and result in a reactor scram. This scenario has been previously analyzed in the UFSAR. No other system or component important to safety would be adversely affected in any manner not previously evaluated. Implementation of this design change will not increase the possibility of occurrence of an accident not previously postulated.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

## RHR Pump Discharge Pressure Switch Replacement

**DESCRIPTION:**

This exempt change replaced the eight RHR Pump Discharge Pressure Switches PS 2-1053-A, -B, -C, -D, -E, -F, -H, and -J to provide switches with a new adjustable range. In addition, for PS 2-1053-E & F and PS 2-1053-H & J, junction boxes are being added to accommodate installation of terminal blocks.

This Exempt Change was designed to meet safety related and seismic category I criteria.

The required setpoint (125 psig) was outside of the vendor's recommended adjustable setpoint range. The previous Static-O-Ring (SOR) pressure switches had an adjustable range of 12 to 100 psi, and were replaced with new SOR pressure switches which have an adjustable range of 20 to 180 psi. This allowed adjustment of the setpoint value with be within the instrument's qualified setpoint range.

**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 15.0

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 pressure switches are SOR model 6N-L3 and have a vendor's recommended setpoint range which is less than the required setpoint of 125 psig. The replacement switches are SOR model 6N6-B5-U8-C1A-JJTTNQ with an adjustable setpoint range which will allow the adjustment of the setpoint with an acceptable margin. This replacement will enhance system performance. Therefore, this Exempt Change does not create the possibility of an accident or malfunction of a type different from those 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.



E04-2-93-282  
4KV Safety Related Bus 23-1 and 24-1

**DESCRIPTION:**

This Exempt Change replaced the existing stationary auxiliary switch/linkage assemblies in the breaker cubicles of 4KV Buses 23-1 and 24-1 with new, more reliable assemblies.

**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 Offsite Power   | SAR SECTION | 15.2.6 |
| Loss of Normal AC Power | SAR SECTION | 15.8.2 |

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 UFSAR Section 8.3.1 remains as the bounding condition on the loss of auxiliary power. The design and operability of the 4KV Buses 23-1 and 24-1 is unaffected with this Exempt Change. The new stationary auxiliary switch/linkage assemblies enhance the switchgear to function as the design specifies.

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

E04-2-94-005  
Main Steam Line Snubbers

**DESCRIPTION:**

Snubbers are provided to ensure that the structural integrity of the Main Steam system and other safety-related systems is maintained during and following a seismic event or other event initiating dynamic loads. The purpose of this design change was to replace the existing Main Steam system mechanical snubbers with new hydraulic snubbers within the Unit 2 drywell. This replacement was performed to eliminate the adverse trend in snubber testing failures. Inspection frequency is based upon maintaining a constant level of snubber protection to the systems. Therefore, the required inspection interval varies with the number of unacceptable snubbers found during the previous inspection. A snubber is considered unacceptable if it fails to satisfy the acceptance criteria of the visual inspection. When a snubber is found to be inoperable, an engineering evaluation is performed in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. By replacing the existing snubbers, subsequent failure rates will decline ultimately reducing the inspection interval and associated engineering and maintenance support time.

**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 Steam Flow   | SAR SECTION: | 15.1.3 |
| Inadvertent Closure of<br>Main Steam Isolation Valves                            | SAR SECTION: | 15.2.4 |
| Inadvertent Opening of a Safety<br>Valve, Relief Valve or<br>Safety Relief Valve | SAR SECTION: | 15.6.1 |
| Small Break LOCA   | SAR SECTION: | 15.6.2 |
| Steam System Line Break Outside<br>Containment/MSIV Closure                      | SAR 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 the new hydraulic snubbers will replace the existing mechanical snubbers. Replacing these snubbers will not alter the operation of the Main Steam system in any way. The snubbers interact with the Main Steam system piping as shock suppressors to accommodate relative thermal movement of the piping during all modes of plant operation. Sargent & Lundy has evaluated the new hydraulic snubbers based on their breakaway drag force (5% of rated load), response velocity and bleed rate (evaluated in Sargent & Lundy calculations EMD-067945 and CMED-058528).

The surveillance requirement and schedule for functional testing of the snubbers provides a high confidence level that the new snubbers will operate within specified limits. The visual inspection schedule is separate from functional testing and adds to the confidence level that the installed snubbers will serve their design function and are being maintained operable. Accident analyses assume that snubbers are initially operable. Compliance with the Technical Specification Surveillance Requirements for functional testing in conjunction with the revised visual inspection schedule assures continued operability of the new snubbers. Therefore, no initial assumptions are being charged, and thus, neither the probability nor consequences of any accidents or malfunctions previously evaluated are significantly increased.

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



E04-2-94-088

Replace Cables between the Main Steam Line  
Radiation Detectors and the Log Radiation Monitors

**DESCRIPTION:**

The Main Steam Line Radiation monitoring system continuously monitors radiation levels from the main steam lines slightly downstream of the outboard MSIVs. Upon detection of high radiation, the monitoring system alarms and provides trip signals to the Reactor Protection System (RPS) and to the Primary Containment Isolation System (PCIS).

This Exempt Change replaced the "HI Voltage" and "Signal" instrument cables between the Main Steam Line Detectors (1734A, 1734B and 1734D) and the Log Radiation Monitors (MSLRM 1705-2A, 1705-2B and 1705-2D). The affected cables are 28127, 28128, 28310, 28131, 28136 and 28137. The previous cables were cracked and brittle, and are no longer being manufactured. The new cables will ensure integrity and reliability of the radiation monitor signal.

**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 | SAR SECTION: | 15.4.10 |
| Closure of MSIVs          | SAR SECTION: | 15.8.1  |

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 Main Steam Line Radiation Monitoring System continuously monitors for radiation and, upon detection of high radiation, alarms and provides trip signals to RPS and to PCIS. The existing instrument cables between the radiation detectors (1734A/B/D) and the log radiation monitors (MSLRM 1705-2A/B/D) are cracked and brittle. Replacing them with new Rockbestos (RSS 6-105/LE) will ensure the reliability of the radiation monitor signal.

Failure of the new instrument cables, as with the existing instrument cables, will result in a loss of signal from the detectors to the monitors. Replacing the existing instrument cables and adding conduit supports will not change the function of the Main Steam Line Monitoring System or plant operation. Therefore, this exempt change will not create any new accidents or failure modes.

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

## Moisture Separator Impingement Plate Support

**DESCRIPTION:**

Examination of the impingement plates in Moisture Separators 2-5605A, 2-5605B, 2-5605C, and 2-5605D has shown significant cracking. The driving mechanism of the cracking appears to be fatigue due to high velocity steam flow over the impingement plate structure. To reduce or eliminate stress concentration points and minimize vibration in the impingement plate, the plates were reinforced using internally mounted stiffener plates. The stiffener plates should eliminate fatigue of the impingement plates.

**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:

|                             |             |          |
|-----------------------------|-------------|----------|
| Turbine Trip without Bypass | SAR SECTION | 15.2.3.1 |
| Turbine Trip With Bypass    | SAR SECTION | 15.2.3.2 |

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 exempt 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. This design change meets or exceeds the original design and functional requirements of the impingement plates and Moisture Separators. The added structural bracing of the impingement plates will substantially reduce or eliminate any future damage due to fatigue. The installation will maintain the probability of a turbine trip transient within original design margins.

Because the design and functional requirements of the change are the same as the original design and functional requirements, an accident of a different type will not be created.

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



E04-2-94-110  
Construction Test VT Examination of Supports for  
MOV 2-1402-38A & B

**DESCRIPTION:**

This Exempt Change made the following changes to Quad Cities Unit Two.

MO 2-1402-38A

1. Replaced 2 ft-lb motor with a 5 ft-lb motor,
2. Changed circuit breaker setting for the larger motor
3. Changed thermal overload heater for the larger motor
4. Replaced spring pack in the Limitorque operator

MO 2-1402-38B

1. Replaced 2 ft-lb motor with a 5 ft-lb motor
2. Changed circuit breaker setting for the larger motor
3. Changed thermal overload heater for the larger motor
4. Replaced spring pack in the Limitorque operator.

Minimum Flow Piping (2-1407-1 1/2" and 2-1410-1 1/2")  
Supports

1. Removed an existing support found defective (broken U-bolt and not anchored down) and poorly designed (resting on torus exposing lines to Mark I torus-attached piping loads)
2. Adds 2 new supports for each loop's minimum flow line and modifies 1 support for the line 2-1407-1 1/2" line.

The purpose of this Exempt Change was to restore margin to the design of the MOV valves and operators using the Generic Letter (GL) 89-10 design methodologies. The re-support of the lines is corrective action outlined in PIF No. 94-1054 and is required to reduce the piping and valve stresses to UFSAR stress allowables.

**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 Due to Pipe Line Break                      UFSR SECTION: 15.6.5  
Inside 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 the pipe and valves have not been relocated so as to affect "2-over-1" concerns or vulnerability to missiles.

The vulnerability to a loss of primary containment has not been increased, because the Exempt Change restores required margin in the piping and valve seismic qualification analysis.

Since the analysis to qualify the changes to the system show that all design requirements have been met, there is an increase in system reliability expected. Interfaces between the new components and the existing system have been considered by the designer, so the potential of a system failure has not increased.

For example, the designer has processed PARs to address the changes to building analyzed loads, the Electrical Load Management System (ELMS), and the cable and cable routing system (SLICE). The PARs have all been returned and the control documents, databases, and analysis have been satisfactorily reconciled.

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

## Low Pressure Turbine Extraction Steam Nozzle Repairs

## DESCRIPTION:

Examination of the Unit 2 Low Pressure (LP) Turbine by the ultrasonic (UT) method has shown localized thinning of the extraction steam nozzles at regions of high turbulence. To ensure the integrity of the LP Turbine the nozzles upstream of lines 2-3110-12" and 2-3107-24" were repaired.

This exempt change welded stainless steel lined carbon steel sleeves over the existing extraction steam nozzles. The stainless steel liners are highly resistant to erosion/corrosion. The liners will halt the effects of erosion/corrosion on the new nozzle sleeves if the original nozzles erode through. The stainless steel liners are sized so that they sufficiently overlap the localized areas of erosion.

The addition of the new stainless steel lined sleeves is designed to meet or exceed the original design requirements of the extraction steam nozzles and is a permanent repair. The design has been qualified by Vectra calculation CWE027.0253, Rev. 4. The repair meets the requirements of General Electric (GE) design specifications and ANSI B31.1.

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:

None

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 LP Turbines are classified as non-safety related. As such, the LP Turbines are not used to perform any safety related functions. Failure of the LP Turbines will not create an accident scenario that is not bounded by the existing accident scenarios. The operation of the LP Turbines is independent of the Reactor Protection System and will not affect the operation of the Reactor Protection System. The repair of the LP Turbine's extraction steam nozzles will not change the function of the LP Turbine or the Extraction Steam system, nor will it violate the independence of the LP Turbines or Extraction Steam System from safety related equipment. Since the function and independence will not change, the possibility of an accident of a different type will not be created. The repair will return the LP Turbines to original design margins by replacing material that has eroded away. This in turn will reduce the probability of transient 15.1.1 "Decrease in Feedwater Temperature". The repair is in accordance with GE design specifications and ANSI B31.1, the Code of Construction of the connecting piping.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.



E04-2-94-237  
Test Tap for LLRT of 2-1001-26A/B Valves

**DESCRIPTION:**

This exempt change taps into the bonnet of the 2-1001-26A and 1-1001-26B with a 1/4" diameter by 1'- 0" (max) pipe and cap.

**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 Reactor Coolant Inventory      SAR 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 the containment cooling will continue to function as designed even if the pipe installed were to fail completely. This failure would not adversely impact any other equipment in the area based on the low volume and temperature of the leak and the direction of the installed taps.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

Drywell Cooling System Duct Repair and Removal

**DESCRIPTION:**

The branch duct from the 2A-5788 drywell cooler fan discharge duct was removed to the 2B-5788 drywell cooler branch duct including damper 2-5772-76.

**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:

None

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 drywell cooling system functions to provide recirculation and cooling of the drywell atmosphere during normal plant power operation and does not interface with any systems important to safety.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

E04-2-95-026  
Conduit Relocation for MO 2-1201-5

**DESCRIPTION:**

Physically relocated a section of conduit in RWCU room between junction box (JB) 2RB-291 and JB 2RB-292. This conduit contains cable that feed motor operated valve MO 2-1201-5. Relocation of the conduit did not affect any equipment and is only a physical change.

**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            SAR 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 the relocation of the conduit is a physical change only. Equipment operation, function and failure modes will not be affected by this change. No new accidents or malfunctions will be created and no existing accident evaluations will be affected.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

## Addition of Flanges on Stator Water Cooling Discharge Piping

**DESCRIPTION:**

This design change added flanges on the Generator Stator Cooling Water discharge piping and associated 1" siphon break line, located just outside of the Unit 2 main generator frame.

**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:

None

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 only failure mode associated with the addition of flanges on the stator cooling water discharge pipe is leakage of the flanges. Other flanges are currently installed on this piping. The materials used for the new flanges are compatible with the existing piping and the original code of construction. The new flanges will be designed and installed in accordance with the original code of construction. The potential for leakage of the new flanges will not be greater than for the existing flanges in the system. Potential leakage will not cause a flooding scenario that would create the possibility of an accident or malfunction of a different type than previously analyzed. Therefore, there is no possibility of creating an accident or malfunction of a type different than those 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.



## BWR Chemistry-Turbine Building Sample Panel Replacement

**DESCRIPTION:**

This modification installed a sample panel at the 611'-6" level of the Turbine Building. This panel will monitor Condensate Pump Discharge, Condensate Demineralizer Effluent and Reactor Feedwater. Individual modules connected to these streams allow for sensing conductivity, corrosion products and dissolved oxygen. Signal generated from the sensors are sent to the Control Room to recorders on the 901-4 panel and to the Hot Chemistry Lab Services supplied to the panel include instrument air, demineralized water and Turbine Building equipment drains. Power to the panel is supplied from MCC 17-1 (480VAC) and MCC 17-1-1 (120/208 VAC). Sample tubing was installed or modified as necessary to facilitate installation.

**SAFETY EVALUATION SUMMARY:**

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because this modification consists of installing non-safety related, seismic and non-seismic mounted equipment. The modification will not affect any design basis accident or single failure event scenarios previously analyzed in the FSAR or USAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because failure modes and effects analysis demonstrates no new accidents or malfunctions are created by this modification. Seismic mounting of the recorders will assure adjacent safety related equipment is protected from damage by the panels during a seismic event.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this modification presents no changes to the Tech Spec Basis. All conditions applicable to this modification have been previously addressed in the basis for the existing equipment to be replaced. The margin of safety is not reduced.

M04-1-88-037B

Replacement of the Existing RCIC Flow Controller  
on the 901-4 Panel with a new Yokogawa Programmable Controller

**DESCRIPTION:**

Replacement of the existing RCIC flow controllers on the 901(2)-4 panels with new Yokogawa programmable controllers. In addition, the existing square root extractor was deleted. However, its function was retained by replacing the existing flow transmitter with a Rosemount transmitter that includes an integral square root function. A jumper in the RCIC governor signal converter was rewired to allow it to accept a 4-20 ma input.

**SAFETY EVALUATION SUMMARY:**

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the replacement of the RCIC flow controller and transmitter does not affect any safety-related functions since it is not classified as a safety-related system. Therefore, the probability of occurrence of a DBA or SFE has not increased.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because all new components will be seismically mounted, with the new controller being seismically qualified. This will mitigate any component failures that could affect the operation of nearby safety-related equipment. No new accidents or malfunctions not previously analyzed in the FSAR are introduced by this partial modification.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the replacement of the RCIC flow controller and transmitter does not have any impact on the existing basis of the Quad Cities Technical Specifications since the RCIC system is not a safety-related system.

M04-2-91-027-A  
Reactor Water Clean-Up Piping, Instrumentation

**DESCRIPTION:**

The scope of this partial modification involved the removal of the RWCU non-safety related piping, valves, and the A & B regenerative heat exchanger trains downstream of outboard primary containment isolation valve, MO 2-1201-5, (not including the valve) through the Clean-Up Recirculation pumps, 2-1205A & B, (not including the pumps) to a point approximately 25 feet downstream of the tee joining the discharge lines of the two pumps. This also included the removal of the RWCU non-safety related return piping, valves and equipment upstream of valve 2-1201-149A & B (including the valves) through the shell side nozzles of the regenerative heat exchangers through valve 2-1201-80 (not including the valves) to the 2-1201-81 valve. The 2-1201-81 valve and the 2-1201-82 valve were removed and replaced along with the short section of carbon steel pipe located between the 2-1201-81 and 2-1201-82 valves.

Piping and valves associated with the Clean-Up Recirculation pump "hot suction" flow pather were permanently removed.

**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:

None

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 partial modification will temporarily remove the non-safety related RWCU piping and components that have been affected by Intergranular Stress Corrosion Cracking (IGSCC). Partial 'B' of this modification will re-instate new piping and components that are resistant to IGSCC.

The removal of the non-safety related RWCU piping will be performed only when the unit is in cold shutdown and the core is completely defueled. However, work may begin before fuel is totally unloaded, any potential flood paths would be eliminated with appropriate use of isolation valves. By performing these actions, all significant safety issues are upheld. Any loss of reactor coolant will not affect plant safety or will not increase off-site dose since all fuel is removed from the reactor. The removal of the non-safety related RWCU piping and components will in no way affect the safety function of the fuel pool system which maintains integrity of the fuel bundles. Removal will begin only when the operation of the RWCU system for reject of reactor vessel water is completed. Immediately after reject mode of operation is completed, RWCU return line check valves 2-1201-81 and manual gate valve 2-1201-82 will be removed and replaced. Any possible leak paths would be negated due to the fact that during construction there is adequate isolation. The 'A' loop of the feedwater system must be out-of-service. This will provide four valve isolation from the vessel with safety related feedwater maintenance gate valve 2-0220-57A closed along with safety related check valves 2-0220-58A and 2-0220-62A and finally the non-safety related RCIC manual isolation valve 2-1399-101, this valve line-up will provide isolation with four valves in series. Once the 2-1201-81 and 2-1021-82 valves are replaced, they will provide a double isolation from the reactor feedwater system, RCIC and vessel. RWCU will have a double isolation from the reactor recirculation system via the inboard and outboard containment isolation valves MO 2-1201-2 and MO 2-1201-5. These valves will not be affected from this partial modification. In addition, RWCU will have single valve isolation from the RBCCW system via the 2-3799-88, for the 'A' train and 2-3799-94, for the "B" train. The system will not have double isolation capability since the next valve is the MO 2-3701. This valve is used to supply the fuel pool cooling system and this system is in operation the duration

of the refuel outage. This single isolation should be of no concern since this is a low pressure and low temperature system. The single isolation should be of no concern since this is a low pressure and low temperature system. The single isolation should be adequate.

In closing, the temporary removal of the non-safety related RWCU piping and components will not create any new failure modes during the refueling outage. All UFSAR and Technical Specifications will be upheld with no reductions of safety to the plant.

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



M04-2-91-027B

Reactor Water Clean Up Installation of New Piping  
Regen Heat Exchangers Valves, Supports and Instrumentation

**DESCRIPTION:**

The existing dual train heat exchanger (HX) design was replaced with a single train HX design. The two existing stacks of RHXs were replaced with one stack of three shells connected in series. The new single HX stack is capable of the same heat removal capacity and flow rate of both existing RHX stacks running concurrently in parallel at full flow. The output from the RHX stack will connect in parallel to the existing NRHX stacks. A single isolation valve was provided upstream and downstream of each NRHX stack to provide isolation of the NRHX train.

This single train arrangement is designed for a total flow rate of 2% of Feedwater flow (410 pgm). The maximum flow rate capacity is the same as the current system when both trains are operated concurrently in parallel at full flow. The function of the RWCU system did not change. The station can operate the system from 1% to 2%, which is the same as the original system design.

The single train configuration has the advantage of reducing the amount of equipment in the system. Fifteen process valves and thirty eight RHX vent and drain valves were eliminated in addition to other vent and drain valves on the system. This will reduce future maintenance and radiation crud traps on the system.

A RHX bypass line was added so that the RWCU system can be used as an alternate shutdown cooling system when the reactor is in shutdown and the vessel temperature is less than 200 degrees Fahrenheit.

RWCU pump hot suction cross-connect piping 2-12123-4"-A, 2-12122-6"-A; and cross-connect valves 2-1299-9, 10, and 12 were permanently removed so that the RWCU pumps cannot be cross-connected to the high temperature side of the system. Experience has shown that operating the pumps on the high temperature side has caused a high failure rate of the pump mechanical seals. The cross-connect piping 2-12124-4"-A was maintained for use as a reverse flow path for system chemical decons. This piping has never seen high temperatures.

M04-2-91-027B CONTD

The instrumentation was replaced and modified to match the single train configuration. New flow indicators FI 2-1201-173A/B were added to provide local flow indication in gpm. Dp switches DPIS 2-1201-174A/B were relabeled as FS 2-1201-173A/B. The pump minimum trip setpoint for FS 2-1201-173A/B was increased from 30 pgm to 55 pgm. The setpoint increase is in the conservative direction.

TS 2-1291-8 which provides a high temperature alarm to the control room was eliminated. TIS 2-1291-13 was replaced with a thermocouple input indicators dual switch unit to provide the high temperature alarm to the control room that was supplied by TS 2-1291-8 and provided an isolation signal to the RWCU isolation valves which was the function of existing TIS 2-1291-13.

The thermocouple TE 2-1291-7B was permanently removed and the position select for reading the 'B' train RHX temperatures on TS 2-1290-28 in the control room was eliminated since the 'B' RHR train was removed.

Existing flow elements orifices FE 1-1279-74A/B were increased. The flow controller FC 2-1279-97A/B was replaced and an increase from 2" to 3" diameter valve seats for the Demin Inlet Isolation valves AO 2-1279-14A/B. The increased flow capability necessitates an increase in the range of the A and B Demin Flow indicators in the control room. The flow indicators FI 2-1290-30A/B scale were increased from 0-150 gpm to 0-250 gpm.

The reactor pressure vessel preheat system was permanently disconnected from the RWCU system since it has never been used to preheat the RWCU system.

The piping layout and valve locations were changed to accommodate the single train design, optimize pipe runs lengths, improve accessibility, and reduce radiation exposure for construction, operation, and maintenance. A gallery platform was added to the RWCU HX room and two penetrations #131 and #43 for secondary containment and fire protection were abandoned and relocated.

The shield wall plugs for the RHX were permanently removed since the tube bundles for the new HX are non-removable.

Three abandoned 3/8 inch O.D. copper tubing sample lines 2-8804A, B and C that were part of the Primary Containment Sample System that run through the RWCU HX room were removed. These lines are interferences and are no longer needed. They were to be removed under Modification M04-2-92-011.

The replacement RHX was designed and fabricated to ASME Section VIII, 1992 edition with the supplemental requirements of ASME Section III, 1965 edition and the requirements of the original General Electric RHX design specification.

Five control cables and two power cables to RWCU return line isolation valves MOV 2-1201-80 were re-classified as non-safety related. The valve is classified a non-safety related valve. These cables were re-routed and have been determined to have no adverse interaction with safety related electrical equipment.

A local leak rate test tap was added to the piping just downstream of the MOV 2-1201-5 valve to allow local leak rate testing of the RWCU Primary Containment Isolation valves.

#### 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:

|   |              |                            |
|---|--------------|----------------------------|
| Postulated Piping Failures in Fluid Systems Outside Primary Containment   | SAR SECTION: | 3.6.1                      |
| Loss of Coolant Accidents Resulting from Piping Breaks Inside Containment | SAR SECTION: | 15.6.5/<br>6.3.3/<br>6.2.1 |
| Anticipated Transients Without Scram                                      | SAR 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 non-safety related portions of the RWCU system is not a system that is used to mitigate any accident scenarios. The pipe and equipment replacement will not change the design basis of the system. The addition of the RHX bypass line will allow the RWCU system to be used as an alternate means to remove residual decay heat during shutdown conditions.

The use of this line during normal operation will increase thermal fatigue and reduce the fatigue life of the Feedwater pipe just downstream of the RWCU to RCIC inlet tee. However, thousands of hours of operation are required to cause cracking in this mode of operation. The temperature differential experienced in this mode of operation is less than the temperature difference experienced during normal startup. However, to limit fatigue, operation of the RWCU bypass line will be limited to shutdown conditions when the vessel water is less than 200 degrees Fahrenheit. In any case, if this line were to fail it would still be bounded by the HELB outside containment accident described in UFSAR Section 3.6.1.

This modification will not create any new interfaces with safety related equipment used to mitigate or control any of the accident scenarios discussed previously. The re-classification of the two power and five control cables as non-safety related that connect to and operate non-safety related valve MOV 2-1201-80 will not create an accident that has not been evaluated in the UFSAR. Breakage or failure of this cable due to a seismic event which in turn would cause the MOV 2-1201-80 to not operate, would not adversely affect the plants ability to control or mitigate the affects of the three accidents scenarios discussed above. This modification will not create the possibility of an accident or malfunction of a different type 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.



M04-2-92-028A  
Combustible Gas Control

**DESCRIPTION:**

Two capped off piping taps were added to two existing nitrogen inerting lines. One pipe tap was installed above the torus near location J8. The new pipe tap, Line No. 2-87104-1 1/2"-T, ties into existing Line No. 2-8708-3"-L. The second pipe tap was installed in the Reactor Building at the ground floor elevation along the 13 wall between rows K and L. The new pipe tap Line No. 2-87103-1 1/2"T, ties into existing Line No. 2-8716-1-T.

Two new pipe spool pieces, Line Nos. 2-87104-1 1/2"-T and 2-87103-1 1/2"-T, were routed through existing Secondary Containment/Fire Barrier Penetration No. "13". This pipe penetration provides a barrier between the Unit 2 Reactor Building and the 1/2 Diesel Generator Room. The penetration is located at Row N about 8' south of column 12 approximately 6 feet above ground elevation. The two new pipe spool pieces were capped off on each side of the penetration.

**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:

|                              |                     |
|------------------------------|---------------------|
| Break in Reactor Coolant     |                     |
| Pressure Boundary Instrument |                     |
| Line Outside Containment     | SAR SECTION: 15.6.2 |
| Loss of Coolant Accidents    |                     |
| Resulting From Piping        |                     |
| Breaks Inside Containment    | SAR SECTION: 15.6.5 |
| Design Basis Fuel Handling   |                     |
| Inside Containment and       |                     |
| Spent Fuel Storage Building  | SAR SECTION: 15.7.2 |



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 modification will be performed in accordance with all original design, material, and installation requirements of the equipment. The net result is that there will be approximately 30 feet of additional pipe that will be capped off and will be non-functional. The additional piping taps and affected penetration will be leak tested to assure no new leakage paths are created. No new interfaces with other equipment and systems will be created. The nitrogen inerting system and secondary containment/fire barrier penetration will perform in accordance with their original design requirements.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

## Addition of Square Root Converters to RHRSW Flow Indication

**DESCRIPTION:**

A square root converter was installed into the flow indication loop for each Residual Heat Removal Service Water (RHRSW) train. The existing configuration of these instrument loops uses logarithmic scales on main control room indicators FI-2-1040-1A and FI-2-1040-1B to convert from differential pressure to flow indication. As a result, the flow indication is condensed in the lower region of the flow indicators making it difficult to accurately read flow. In addition to installing the square root converters, the logarithmic flow indicator scales were replaced with linear scales. This will result in improved ability for the operator to accurately read flow throughout the entire flow range.

**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 | SAR 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 the square root converters are being installed to change the flow indication from logarithmic to linear. This is being done so that the indication will be over the entire scale range and not concentrated in one region of the scale. This design is consistent with failure modes of other instruments in flow loop (fail downscale on loss of power). The instrumentation loop itself provides only indication and does not provide any control function. Therefore, the installation of the square root converters does not create the possibility of an accident or malfunction of a type different from those previously evaluated.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.

## RHR Supply DW Penetration X-12 Bellows Installation

**DESCRIPTION:**

The bellows attaches on one end to the drywell (DW) nozzle and on the opposite end to a flued head anchor. The flued head, in turn, is attached to a guard pipe. The guard pipe surrounds the process pipe from the outside of the penetration to just outside the flued head. The existing bellows configuration consists of two two-ply 9.5" tandem bellows separated by a 4" center spool piece. This addendum removed the center spool piece and installed one bellows with an overall length of 23". In addition, installation of the outer bellows ply was removed from the scope of this minor plant change and the existing cover was reinstalled. A stanchion support attaches from the flued head anchor support frame to the DW wall. This addendum relocated the existing stanchion 2.5" in the horizontal direction.

**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

SAR SECTION: 15.6, 6.2.1.3

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 the new single-ply bellows is designed to the same requirements and will perform the same safety function in all plant operating modes as the existing two-ply bellows. Installation of the new bellows will reduce the leakage through penetration X-12 and restore primary containment integrity. Future leak rate testing can be accomplished by either a temporary or permanent test fixture. Modification to the stanchion support is necessary to provide clearance for possible future permanent test fixture installation. All design requirements will be satisfied and integrity of the flued head anchor support frame will not be compromised. Process parameters are not affected and there are no unreviewed system interactions. This design does not affect plant operation or create the possibility of any new accident or malfunction.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because modification to the stanchion support will satisfy all design requirements. Integrity of the flued head anchor support frame will not be compromised. The new single-ply bellows is designed to the same requirements as the existing two-ply bellows. Type B testing will be accomplished either by a temporary or permanent test apparatus. Therefore, the margin of safety will not be reduced.



**DESCRIPTION:**

Revised QCOS 1600-12 to add steps to remove test instruments after test completion.

**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:

None

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 test is performed while shutdown. The Interim Procedure contains no changes to intent or function of the surveillance. The change adds restoration steps to remove the manometer after completion of the test.
3. The margin of safety, is not defined in the basis for any Technical Specification, therefore, the safety margin is not reduced.