

RAR-91-1

January 3, 1991

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 changes, tests, and experiments completed during the month of December, 1990, 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,

COMMONWEALTH EDISON COMPANY  
QUAD-CITIES NUCLEAR POWER STATION

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Enclosure

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Minor Design Change 4-1-90-126  
Main Control Board (MCB), 901-2 Panel

Description

This minor design change fabricated a new cutout/opening in 901-2 panel in Control Room to prepare panel for new recorder addition for main steam line radiation level recorder. Work performed during Q1R11 Refuel Outage.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the fill plate hardware installed are seismically analyzed to withstand postulated seismic event without failure.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the panel rigidity is unaffected by the design, so no new variable is introduced to affect panel analysis.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because neither main steam radiation nor offgas systems are inoperable; seismic effects per section 5.6 are included in design, therefore margin of safety is unaffected.

Minor Design Change 4-0-90-157  
Reactor Building Vent Stack Transmitter

Description

This minor design change replaced flow transmitter 1/2-5741-504 on the reactor building vent stack. The current transmitter is a Taylor 1301 TD 1111 2(83). The transmitter cannot be replaced like for like. The replacement transmitter is a Rosemount 1151 DR 2F12.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the reactor building vent stack flow transmitter was not addressed in FSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because there has been no change in function with change in transmitter since this transmitter only increases range and not the signal.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because the reactor building vent stack flow transmitter was not addressed in Tech Specs.

Minor Design Change 4-1-90-124  
Source Range Monitor Recorder

Description

This minor design change replaced the existing GEMAC SRM chart recorder, EPN 1-0750-2, with a Johnson Yokogawa UR100T recorder on 901-5 panel in main control room. A toggle switch is also added close to the recorder to allow selecting of a high or low chart speed. This recorder is used for indication and trending only. It does not provide contacts for automatic actuations such as alarms or the SRM rod block.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the design does not adversely impact the design basis or change description in FSAR/UFSAR, Section 7.4.3. New recorder has been evaluated for compatibility with interfacing systems as found suitable for the application.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the recorder replacement installs only a slightly modified configuration from the existing configuration. All changes have been evaluated for their impact on adjacent or interfacing components/systems. Therefore this MDC does not increase the probability of an accident, different than described in FSAR/UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because MDC replaces a non-safety and non-seismic qualified chart recorder with a new class IE recorder procured safety related from a 10CFR50 appendix B supplier. By imposing highest quality standards, margin of safety is increased.

Safety Evaluation Checklist #90-376  
Minor Design Change 4-0-90-008  
Flow Indicator FI-1/2-7541-34A Isolation Valve

Description

This minor design change added an isolation valve and an additional test tee to FI 1/2-7541-34A, to add capabilities of calibrating FI.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because proper flow control required by FSAR par. 5.3.3.4 for SBGT system is not affected by FI 1/2-7541-34A.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because in the event of an accident, the SBGT system must be functional. FI 1/2-7541-34A has no effect on SBGT proper functioning.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because proper flow is a SBGT Tech Spec requirement. FI 1/2-7541-34A has no control on system flow.

Minor Design Change 4-0-90-077  
18" Crane Tilting Disc Check Valves

Description

This minor design change incorporated vendor recommended upgrade of pivot pin retention. This new method of retention incorporates a retaining pin which extends through the entire diameter of the pivot pin. The recommended method replaces the method previously used which was similar to a set screw arrangement.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the integrity of the valves is being increased with this recommended change. The valves function and failure mode are remaining unchanged with this new method of pivot pin retention.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the function of the valve is unchanged with this minor change. The possibility of an accident or malfunction is being decreased with this positive pivot pin retention method.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because Tech Specs address leakage through these valves. This minor design change will not affect the valves seating capabilities. The valves integrity is being increased through this minor design change.

Minor Design Change 4-2-90-155  
Flow Transmitter FI-2-1279-75A

Description

This minor design changed reactor water cleanup transmitter because it is not repeatable during calibration. Changing model numbers because installed model is no longer available. No changes in mounting detail or functions of transmitter. Will require retubing due to physical dimensional differences of transmitter body.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the transmitter operates identically and provides the same function (providing flow indications) as the previous transmitter. Transmitter is not safety related.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because function of the component has not changed. No functions added or deleted.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because the reactor clean-up system is not mentioned in the Technical Specifications.

Procedure Change QOS 1600-11  
PCI Simulated Automatic  
Closure Initiation Test, Group I

Description

Added sign-offs for performing the step and second verifications sign-offs.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the probability of an accident is decreased due to the additional verification to electrical alterations to ensure the correct alteration is being made.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the steps in the procedure are not being altered, just additional verification that the steps are being performed correctly.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because of the increase due to the addition of second verification to ensure the step is being performed correctly.



Procedure Change QFP 100-1  
Master Refueling Procedure

Description

This change allows the strongest rod subcriticality check to be performed after core verification is complete.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because this change does not affect or invalidate any analysis in the FSAR. Additionally this change does not alter the safety function of equipment listed in the FSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the function and normal operation of all equipment required to terminate a reactivity addition in this mode of operation will not be changed. Therefore no new accident or malfunction is created.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because this change ensures that the reactor configuration is consistent with the analyzed configuration so that the margin of safety required by the Technical specifications is maintained.

Procedure Change QAP 400-24  
Technical Staff Engineer Training Procedure  
Spray Parts/Materials Evaluation

Description

Ensures that the independent reviewer is qualified as a procurement/materials evaluator, and to allow sufficient time for new engineers to become qualified using the on the job training method.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the temporary change is not mentioned, nor does it affect the FSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because this change will not affect the operability, whatsoever as described in the FSAR.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because Tech Specs are not involved with this temporary change.

Safety Evaluation # 90-796  
Special Test #1-152  
A Model Getter Field Test

Description

The test functionally verified the operation of the Quad Cities Eberline Getter Software Subroutine and the link between the 1/2 Main Chimney SPING monitor.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the only equipment affected is the main chimney SPING effluent monitor. It will be OOS for a few days during the testing. The SPING does not have any automatic actions associated with it. It only provides indication of releases during an accident. Backup monitoring capabilities are available for this function.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the SPING does not provide any automatic actions.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the main chimney GE detectors will still be available to monitor gaseous effluent releases at the main chimney. Those monitors have alarms to signal control room personnel that high release rates are occurring.

Safety Evaluation #90-851  
Minor Design Change 4-0-90-149  
Canal Lift Station Feeder #3

Description

This minor design change performed tie-in of electrical feed supply to the service building addition from the feeder to canal lift station Bus #3.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because this change involves only non-safety related equipment and does not affect either directly or indirectly the design function of any safety related equipment.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because this change only involves non-safety related equipment. The bounding conditions in the FSAR Accident Analysis are not affected so no new accidents are introduced by this change.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the canal lift station equipment is not specifically identified as the basis for any Technical Specifications, so safety is not affected.

Safety Evaluation #90-592  
Minor Design 4-1(2)-90-003  
RHRSW Sump Pump Discharge Check Valves

Description

This minor design change replaced discharge check valves on the RHRSW vault sump pumps. Current lift check valves were replaced with wafer type check valves to improve system reliability.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the RHRSW vault sump ejector system is classified as non-safety related. Isolating one line at a time to perform this work will not affect the operability of the RHRSW system.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because replacing the existing lift check valves with wafer check valves does not affect the design function of the RHRSW sump pump system of providing flood protection for the RHRSW pump rooms.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the replacement of these lift check valves with wafer check valves inside the RHRSW sump pump vaults will not affect the condensate pump room flood protection required per Technical Specification Section 3.5.H.

valuation #90-1023  
So: Install Pb Shielding  
3d on Tech Staff PC

### Description

Impell upgraded their Pb Shielding program from version 2B to 3B. The new version runs on a PC unlike the other version which ran on the Prime. The new program also cracks lead shielding and includes more lines in its data base than version 2B.

### Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the program gives a conservative estimate of the allowed load based on piping stress calculations. There are also precautions and limitations given for the evaluations. Due to these 2 factors, no safety related equipment in the FSAR will be adversely affected.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because this takes into account many different factors in order to determine the maximum allowable lead shielding. These factors include: pipe material properties, pipe span, supports (type and number), valve and actuator (type and weights). By taking all of these into account as well as a safety factor, the evaluations are seen as safe and credible.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the lead that is approved is only for temporary shielding and will not impair the operation of any safety related equipment.

Safety Evaluation #90-1017  
Core Monitoring Code Update

Description

A revision of the core monitoring code was installed to correct the software problem report listed in GE FDI; RBGU Rev. 19.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because this installation involves correcting an output format error for a computer program and has no bearing on any equipment. Therefore, the probability of an occurrence or consequence of an accident as previously evaluated in the FSAR remains unchanged.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the change in format of output for the computer program has no functional control over any equipment and can therefore not create any different type of accident. The calculations of thermal limits are not affected.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the revision to the CMC program is for changing the format of an output for the program, and has no effect on the calculation of thermal limits.

Procedure Change QEP 400-1, Rev. 2  
Plant Assembly

Description

Allowed for changing designated assembly areas should emergency conditions warrant such a change.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the FSAR indicates that personnel should be assembled in safe locations with no specific areas designated, thus this revision, which allows for changing assembly areas if predetermined areas become unsafe does not increase the probability of an occurrence, consequence of an accident or malfunction of equipment important to safety. (Ref. FSAR 13.4.2.6)
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the assembly of personnel at designated areas does not form the basis for any accident/malfunction analysis and therefore does not create any new accident/malfunction possibility.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because there is no margin of safety defined for personnel assembly in the Technical Specifications, thus the margin of safety is not reduced.



Safety Evaluation #89-71  
Modification 4-1-87-074B  
A & B Feedwater Flush Line Restrictive Orifice

Description

This Partial Modification replaced restrictive orifice 1-3241-53B with a spectacle flange consisting of a blank plate and a large bore orifice. The blank plate will be used during normal unit operation and the large bore orifice will be used for flushing operations. The large bore orifice will have a diameter equal to the inside diameter of the flush line pipe. Flushing will be done using a condensate/condensate booster pump which will provide sufficient flushing flow at a pressure much less than feedwater pressure. A 3/4 inch drain line was installed between the spectacle flanges and valves 1-3212D to allow for drainage of the flush line. The drain line can also be used as a vent path when leak testing the 1-220-59B check valve.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the feedwater flush lines are not mentioned in section II of the FSAR which deals with the feedwater system. Since the original conditions and assumptions made in the FSAR have not been unchanged the probability of an occurrence of the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because this modification does not interface with any safety-related equipment and would not fall outside any single failure event or design basis accident which has already been analyzed in the FSAR.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because the feedwater flush lines do not interact with any systems described in the Technical Specifications. Therefore, the margin of safety is not reduced.

Safety Evaluation #90-1010  
Replacement of Unit Two  
Rod Movement Control Switch (RMCS)  
Sequence Timer and Relay 281-112  
During Unit Power Reduction

Description

The unit two RMCS timer and 281-112 relay will be replaced during unit power operation. The "Rod In", "Rod Out Notch", and "Notch Override" functions will be disabled during the replacement. However, the "Emergency Rod In" function and the scram function of all control rods will be available at all times.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the replacement does not affect any accidents analyzed in the FSAR. Rod withdrawal will not be possible during the replacement, and therefore the replacement is bounded with respect to accidents involving rod withdrawal errors. The "Emergency Rod In" and scram functions will be available at all times. The control rod drop accident is unaffected by the replacement.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the normal control rod movement functions which require the use of the timer ("Rod In", "Rod Out Notch", and "Notch Override") will not be possible during the replacement. Actuation of the control switches to attempt these rod movement functions will result in no rod movement. The "Emergency Rod In" function and the scram function of all control rods will be available at all times. The scram operation of all rods is completely independent of the circuitry involved in rod positioning during normal operation. The "Emergency Rod In" function will be unaffected as its operation does not depend on any action of the sequence timer. The work involved in disconnecting the old timer, connecting the new timer, and replacing the relay will not result in any new accident or malfunction type.

3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because all control rods will remain operable since the "Emergency Rod In" function and scram function will be unaffected during the replacement. The replacement does not reduce the margin of safety to any Tech Spec basis.

Safety Evaluation #90-961  
Modification 4-0-89-066  
Electrical Demolition for 1/2 IA System

Description

Replace the 1/2 instrument air system with higher capacity equipment. This evaluation is for the electrical demolition work and the temporary instrument air system configuration required for installation of this modification.

Evaluation

1. The probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because the electrical demolition will disable the 1/2 instrument air system which is not required for the design function of any equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because loss of both unit one and two due to loss of instrument air will not occur since unit one will be in a refueling outage. The 1B compressor will be tied to unit two during installation of this modification.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because instrument air does not affect any margin of safety defined in Technical Specifications.

Safety Evaluation #90-880  
Modification #4-1-90-021  
Install Temperature Control Valves in  
TBCCW Supply to RFP Oil Covers

Description

This modification installed temperature control valves in the turbine building closed cooling water discharge lines from the reactor feed pump oil coolers. The temperature control valves will regulate TBCCW flow to the coolers to ensure acceptable oil cooling takes place and thus acceptable oil viscosity.

Evaluation

1. The probability of an occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report is not increased because this mod will increase the reliability of the feed pump oil coolers and thus the feedwater system. The probability of an occurrence or the consequences of an accident, or malfunction of equipment important to safety as previously evaluated has been reduced for this reason.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report is not created because the worst case malfunction due to this modification would be the loss of feedwater which has been previously evaluated in the FSAR.
3. The margin of safety, as defined in the basis for any Technical Specification is not reduced because this modification does not affect any system which up the bases for any Technical Specification and thus does not reduce the margin of safety.