



Commonwealth Edison

Quad Cities Nuclear Power Station
22710 206 Avenue North
Cordova, Illinois 61242-9740
Telephone 309/654-2241

RAR-90-60

August 1, 1990

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 July, 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).

Thirty-nine copies are provided for your use.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

R. A. Robey

R. A. Robey
Technical Superintendent

RAR/LFD/nh

Enclosure

cc: A.B. Davis, Regional Administrator
T. Taylor, Senior Resident Inspector

0027H/0061Z

9008100107 900801
PDR ADOCK 05000254
R PDC

IE47
11

Modification M-4-2-88-045

Description

Due to a recent interpretation by the NRC of the definition of high/low pressure interfaces, the Auto Depressurization System (ADS) valves were evaluated for spurious operation due to electrical shorts. This evaluation discovered the possibility existed for spurious operation due to shorts within certain cables of the ADS logic. To prevent these shorts, new cable was routed to provide separation so shorts cannot occur.

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 modification is being implemented to reduce the potential for getting shorts in the proper sequence to cause spurious operation of the relief valves. ADS logic is not altered by this modification.
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 reduces short circuit susceptibility. All other potential failure modes and their effects from the modified configuration are the same as the existing ADS scheme. No new malfunction type is created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Tech Spec bases for ADS have been reviewed. The margin of safety is not reduced since the new cables will serve the same function as the cables they replace and the new cable routing will meet the stations separation criteria.

Safety Evaluations #90-286 and 90-287
Minor Design Change 4-2-90-019
Penetration Seals for Main Steamline and
Feedwater Lines

Description

This changes penetration seals details.

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 new design will not change from that which has already been analyzed in Section 5 of the UFSAR.
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 new design will still have the same function as the old design so an accident or malfunction of a different type will not be created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the new design will have the same Tech Spec requirements as the old design.

Safety Evaluation #90-467
Reactor Building Corner Room Floor Drain Discharge
Check Valves Stuck Open

Description

Plug ECCS pump room floor drain lines to provide flood protection for RHR and Core Spray pumps due to back leakage from the torus room area. Installation of these plugs is necessary since the check valves installed in the floor drain line were found in a corroded state such that they could not close, and thus prevent back leakage from the torus room area.

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 safety function of the ECCS pump room floor drain discharge check valve is to prevent back leakage flooding from the reactor building to the ECCS pump rooms and disabling the ECCS pumps. Although the check valves are not specifically addressed in the FSAR, the interpretation of the valve function is based on FSAR Section 6.6.2 which describes the submarine door addition to the compartments. The basis for this addition was to . . . "prevent water in the torus room area from leaking into the pump compartment and thus will assure the availability of the ECCS in the event of a passive failure." This passive failure is external to the compartments. By installing plugs in the floor drains the same function is being performed in that no water can leak into the compartment. As further support to the function interpretation, the Dresden FSAR, Amendment 11/12, identifies that the design basis for this flood prevention system (water tight doors and check valves) is to limit the consequences of passive failures during long term post accident cooling operation of the ECCS pumps.

In addition, during post accident long term core cooling, a postulated passive failure could result in a leak developing inside a compartment. Only the ECCS pump(s) located inside that room could potentially be lost due to a rising water level. The design basis accident is identified as a LOCA with a loss of offsite power with one additional failure. Flooding of any one compartment would, at worst, remove two RHR pumps from operation. The DBA LOCA analysis assumes the failure of a diesel generator which would eliminate two RHR pumps and one Core Spray pump from operation. Thus, the flooding of one corner room is less severe than the loss of a diesel. Therefore, the probability of an occurrence or the consequences of an accident of malfunction of equipment important to safety 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 installation of these plugs only related to long term core cooling capability and is similar to the previous installation. The worst case scenario could result in the internal flooding of a pump room; however, this possibility existed with the previous installation. Thus, the installation of these plugs does not create the possibility of an accident or malfunction different than any previously evaluated in the FSAR.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because while no margin of safety is specifically described in the Technical Specifications, long term core cooling requirements are defined. Technical Specification Section 3.5/4.5.A and B describe the RHR pump availability requirements. Only one RHR pump and one Core Spray pump are required to provide long term cooling requirements during post accident conditions. These plugs do not impact those long term cooling requirements. Plugging of the floor drains in the ECCS pump rooms will prevent the possibility of back leakage into all of the rooms due to flooding in the reactor building. A leak in any one compartment could potentially disable the pumps in that room, but long term core cooling capability would continue to be met. In addition, surveillance of the rooms during normal plant operation have been increased to once every two hours. This provides additional assurance that the ECCS pump room environment is maintained for proper system performance.

Safety Evaluation #90-468
Software Installation of Emergency Response Data System

Description

A program was installed that transmitted a set of plant data from the station Prime computer over a data link to the NRC. The data transmission is started and stopped from menu items in the GSEP login. The NRC will request when they want the link started and stopped.

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 link will have no effect on plant equipment. It will only transmit plant data from PTHSTY to the NRC. No evaluated safety issues are changed.
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 data link has been tested to provide accurate data. Decisions on actual actions to be taken will not be based only on data from this link.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because no Tech Spec basis are affected by this data link.

Safety Evaluation #90-469
Revision 0.4 of Point History

Description

The PTHSTY program has been enhanced by adding an automatic update mode. In this mode, the program will automatically update the current point value and time as new data is available.

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 data display is a secondary source of information used in the TSC and EOF. Accuracy of data and display of correct information has been checked by validation testing.
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 enhanced feature will make tracking post accident information easier in the TSC and EOF. This will enhance the ability of plant staff to diagnose accidents and malfunctions and take appropriate corrective action.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced, because the data acquisition system does not alter any of the basis of the Tech Specs.

Safety Evaluation #90-471
Potential Damage to HPCI Signal Converter When
Using MGU Manual Control Switch

Description

Using the HPCI turbine manual control switch has the potential to damage the turbine signal converter, 1(2)-2386A. When the switch is initially taken out of the neutral position, the output of the signal converter is momentarily lined up to 125 VDC. This causes a voltage spike which, over time, could result in failure of the electrical equipment.

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 MGU manual control switch is an alternate means of turbine control that would be used only after failure of all other turbine speed controls. The switch could only be used if the signal converter is isolated, therefore, the probability of malfunction of equipment 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 condition does not affect normal operation of the turbine controls. Therefore, no possibility for an accident or malfunction is created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this condition does not affect system operability as defined in Technical Specifications.

Safety Evaluation #90-482
Ground Alarms Due to Cycling Various
Motor Operated Valves

Description

A 250 VDC ground alarm occurs when cycling some motor operated valves on the HPCI and RCIC systems.

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 effects of the grounds on the electrical components has been evaluated by Engineering. No adverse effects were identified, therefore the probability of an occurrence or malfunction has not been 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 the occurrence of the ground does not prevent valve operation. The spurious grounds do not present a problem for the DC system. No possibility of an accident is created.
3. The margin of safety, as defined in the basis for any technical Specification, is not reduced because HPCI and RCIC still meet Tech Spec requirements for operability.

Safety Evaluation #90-494
OD-76 Computer Program Revision

Description

OD-76 has been revised to include an audible alarm when above 80% FCL and below 45% rated flow. Also, OD-76 was revised so that the eight hour average of core thermal power works properly for three minute intervals.

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 computer has no control over equipment and is used only to provide additional information to the operator.
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 will provide an audible alarm when the unit moves into a region of potential instability. This will further alert the NSO of a condition previously described in the FSAR. And, correcting the eight hour average power for three minute intervals will increase the level of detail going into the average power providing the NSO with a better number for the average core thermal power.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this program does no calculation regarding any safety limits or margin of safety as contained in the Technical Specifications.

Safety Evaluation #90-503
OD-78 Computer Program Revision

Description

This change modified the program so that when output is sent to the Unit 1 typer, the correct typer is flagged as being in use and the correct typer is reset when the printing is finished.

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 no changes are being made to the calculations so no effect on any plant performance.
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 will prevent the printer from hanging when the program is demanded.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this will only correct an error in the existing program.

Safety Evaluation #90-531
C-Model Rev 1.1

Description

The equation for containment activity was modified to remove a redundant correction factor. Currently, the time dependent response of the detectors is corrected by two separate factors and is thus being applied twice in the calculation. This redundant correction factor is eliminated by this revision.

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 will provide accurate information on actual containment radiation level for accident assessment.
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 none of the actual GSEP activation levels are being changed by this. Only the information calculation is being corrected to supply correct information.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because no setpoints or trips use the corrected valves. The information from C-Model is not referenced in the Technical Specifications.

Safety Evaluation #90-533
Slow Closure of the Core Spray Minimum Flow Valve

Description

The core spray minimum flow valve was found to slow close in a time greater than required. If the core spray is required to inject, a temporary flow would be diverted from the main injection flow.

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 required flow and pressure, as stated in the FSAR would be met while the minimum flow valve is not closed. Therefore, the consequences of an accident are 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 condition does not place the core spray system in an alignment contrary to evaluated in the FSAR. Therefore, the possibility of a malfunction is not created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the condition does not affect system operability as defined in Technical Specifications.