



Commonwealth Edison

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RAR-88-15

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Mr. J. H. Sniezek, Deputy Dir.
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Enclosed please find a listing of those changes, tests, and experiments completed during the month of March, 1988, for Quad-Cities Station Units 1 and 2, DFR-29 and DPR-30. A summary of the safety evaluation is being reported in compliance with 10 CFR 50.59.

Thirty-nine copies are provided for your use.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

R. A. Robey

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Services Superintendent

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Enclosure

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Modification M-4-1-85-36

Description

The purpose of this modification is to install pressure taps, including isolation valves, on the suction side of RHR Service Water Pumps (one pressure tap per pump) to accommodate future installation of pressure gages.

Installation of pressure gages is necessary to obtain accurate inlet pressure reading during pumps' operation. Pump inlet pressure reading is required by Section XI of the ASME Code for Inservice Testing.

Evaluation

The installation of the 3/4" piping would not alter any previous FSAR analysis. The worst case situation (with the valve in the open position) would not postulate a different type of accident. The valve in the open position would simulate a break or leak in the system which has already been previously analyzed in the FSAR.

Modification M-4-1-86-30

Description

This modification consisted of banding selected control room indicators for ranges of normality and abnormality, setpoints, alarms and operator action points. This modification was required by the detailed control room design review performed at Quad Cities Station.

Evaluation

The intent of this modification was to help recognize potential plant problems (hence improve plant safety) possibly faster than would be otherwise attainable by providing to the operator information as to when a parameter was outside its normal range of operation, or when an action or alarm point was close to occurring.

Modification M-4-1-86-16

Description

This modification installed access doors in the missile shields surrounding the 1A and 1B RPS MG sets. This mod provides easier and safer access to the RPS MG sets for routing inspections.

This mod was accomplished by installing two 9" x 10" wide openings per MG set, covered by sliding doors and fastened by lock pins.

Evaluation

The missile shields provide an additional margin of safety by acting as a protective barrier. Failure of the access panel modification will not increase or decrease the probability of an accident since the panels or shields do not affect FSAR evaluated, safety related, or Tech Spec systems or equipment. The margin of safety will not be reduced by this modification.

Modification M-4-1-86-36

Description

Modification M-4-1-86-36 was initiated to provide additional support to meet code stress allowables on specific Quad-Cities Control Room panels. Inspections and calculations indicated that several Control Room panels were not mounted in accordance with the original design configuration. Due to current physical restrictions, the original configuration could not be implemented. This modification conservatively restrains the panels for operating and accident loading in accordance with original plant design conditions.

This modification consisted of placing several fillet welds between the panel base and the actual panel on the following panels: 901-2, 901-10, 901-11, 901-37, 901-i3, 901-19. Also, four braces (total) were added to support the top of panels 912-8, 912-2 and 912-7 to the adjacent concrete wall.

Evaluation

This modification simply restores the plant to the condition assumed by the FSAR, and assures adequate Control Room panel monitoring during a seismic event. Although the final configuration of the plant may be different than shown on the original design drawings, load carrying adequacy will be confirmed by documented analysis. The modification restores the margin of safety assumed in the Technical Specifications.

Modification M-4-1-86-21

Description

The purpose of this modification consists of adding special separation to the analog trip system panels. The modification was required as a result of recommendations made in Sargent and Lundy report SL #4413 dated February 28, 1986, revised September 12, 1986. This being a consequence of ongoing NRC integrated outage inspections. Relocate relays within ATS cabinets to provide separation. Reassign segregation codes and route new cables to provide separation between divisions.

Evaluation

The intent of this modification is to prevent the possibilities that an energized cable from one division could short to the opposite division thus keeping the opposite division energized and preventing operation of the Reactor Protection System.

Modification M-4-1-85-47

Description

The purpose of this modification was to install reactor building ventilation damper control, indication, and reset capabilities in the control room on panel 912-1. This was the station's commitment to HED 1.1.1.A/V-4 that resulted from DCFDR. The control room controls parallel existing local damper control, indication and reset capabilities.

Evaluation

No safety concerns have been raised from the modification. The modification assures reactor building ventilation system damper isolation from a "safe" environment if needed from a failure to auto isolate upon the proper signal. Previous manual isolation was present only locally.

Modification M-4-1(2)-86-32

Description

Modification M-4-1(2)-86-32 updates the model of the 4-way valves used on the Automatic Valve Corporation (AVCO) air manifolds which operate the Main Steam Isolation Valves (MSIV's). Replacement of the elastomers on the 4-way valves was required by the Environmental Qualification (EQ) program. However, the model of the 4-way valves previously installed was obsolete. Consequently, new 4-way valves had to be installed. In addition, the Station decided to add 2-way valves to the air manifolds. The 2-way valves will add additional reliability to the safety-related function of the MSIV's by providing an additional path for air on the under side of the piston in the main valve to exhaust, allowing the springs to close the MSIV's. The exhaust path provided by the 2-way valves is in addition to the exhaust path provided by the 4-way valves under normal operation.

Evaluation

The only significant change to the air manifolds is the addition of the 2-way valves. This increases the reliability of the safety function of the MSIV's by helping to assure closure by providing redundancy to the 4-way valve operation. No additional failure mode is introduced. The refurbished air manifolds will comply with Quad Cities' EQ program and will be qualified to 10CFR50.49.

Modification M-4-1-87-07

Description

This modification consisted of two parts. The first part consisted of rerouting the Unit 1 Diesel Generator (DG) 125 VDC field flash circuit. The cable was routed through the Service Building creating an Appendix R problem since a fire in the Service Building could cause the Unit 1 DG to become inoperable. The new cable is routed in a more direct manner bypassing the Service Building.

The second part of the modification removed the CO₂ system interlock to the Unit 1 DG Room Vent Fan Alternate feed. A fire induced fault could disable both the normal and alternate power feeds to the vent fan. Rewiring the interlock contact allows the alternate feed to supply power to the vent fan in the event of a spurious signal affecting the CO₂ system.

Evaluation

The first part of the modification reduces the cable's vulnerability to be affected during a fire. The equipment's function remains unchanged.

The second part of the modification affect the circuit only during the special operating conditions of a specific fire situation. It makes the Diesel Generator able to function using the "alternate" feed for the vent fan decreasing the probability of an equipment malfunction.

Modification M-4-1/2-82-14

Description

Modification M-4-1/2-82-14 pertains to the replacement of the service water radiation monitors. The present liquid process monitoring system is composed of two (one per unit) General Electric on-line radiation monitors. These two monitors will be replaced with Eberline off-line liquid samplers (Model SA-5), shielded detectors (Model RDA-XX), a data acquisition module (DAM 4-3) and a check source mechanism.

The intent of this modification is twofold. First, the proposal replacement will result in an improved and more accurate sampling system. The existing GE liquid process sampling system is an "on-line" monitoring system versus the proposed Eberline "off-line" system. The GE monitors are mounted directly on the Radwaste and Service Water discharge lines and read the flow through the respective discharge pipes. However, through years of operation, the discharge lines themselves have become radioactive and contribute to the field that the detectors are reading. The current system does not have a background subtraction capability on the detector; hence, readings have not been very accurate and the chance for spurious hi-rad alarms is increased. The Eberline system uses a highly polished steel bowl which has exhibited a high resistance to radioactive contamination in shop testing. Both of these features will greatly add to system reliability.

Secondly, this modification has been initiated in anticipation of a future Appendix I Technical Specification Requirement for improved sampling of radioactive effluents by the Nuclear Regulatory Commission. Although there is no current requested in-service date by the Commission, this is nonetheless an NRC commitment and the station has elected to proceed with the proposed upgrade. There are currently no Technical Specification or Final Safety Analysis Report changes associated with the modifications. Any future changes will be addressed in the Nuclear Licensing Department Appendix I submittal to the NRC.

Evaluation

This modification is replacing the existing monitoring system with a more accurate and sensitive system. These monitors are more likely to mitigate the probability of an equipment malfunction because of their increased reliability and sensitivity to levels of radiation which are not easily detected by the existing monitors. Therefore, this modification in no way changes the characteristics of the effluents, and hence, in no way changes the margin of safety.