Duquesne Light Company Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077-0004
(412) 393-5206
(412) 643-8069 FAX

GEORGE S. THOMAS
Division Vice President
Nuclear Services
Nuclear Power Division

May 5, 1995

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
Report of Facility Changes, Tests and Experiments

In accordance with 10 CFR 50.59, the Annual Report of Facility Changes, Tests, and Experiments for the Beaver Valley Power Station, Unit No. 2, is attached. This report provides a brief description of each facility and procedure change and a summary of the safety evaluations. The annual report covers the period of November 1, 1993, through October 31, 1994.

Each change was evaluated to determine (1) if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the Updated Final Safety Analysis Report may be increased, or (2) if a possibility for an accident or malfunction of a different type than any evaluated previously in the Updated Final Safety Analysis Report may be created, or (3) if the margin of safety as defined in the basis for any technical specification is reduced. In each case, it was determined that the change did not constitute an unreviewed safety question as defined in 10 CFR 50.59.

If you have any questions regarding this report, please contact Nelson R. Tonet, Manager, Nuclear Safety, at (412) 393-5210.

Sincerely,

George S. Thomas

Attachment

c: Mr. L. W. Rossbach, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. D. S. Brinkman, Sr. Project Manager

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Beaver Valley Power Station Unit 2
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CHANGE TITLE

Utilization/Designation of the Shippingport Atomic Power Station (SAPS) Warehouse for the Storage of Radioactive Tools, Materials, and Equipment While Not In Use At Either Unit.

CHANGE DESCRIPTION

This safety evaluation documented the utilization of the SAPS warehouse, which is located on the south west side of the Beaver Valley Power Station Site (as shown on UFSAR site layout drawings), for the storage of radioactive tools, materials, and equipment when not in use. The reason for this change is to provide additional "under shelter" storage capacity for the plant.

CHANGE TITLE

Waste Handling Building

CHANGE DESCRIPTION

The Waste Handling Building (WHB) is a shielded facility, constructed during the mid-1980's, for interim storage of compacted and solidified low-level radioactive waste (LLRW) from Beaver Valley Power Station (BVPS) Units 1 and 2. The building and associated equipment were designed to meet the applicable requirements of 10 CFR 50, 10 CFR 20, Regulatory Guides 1.21 and 8.8, Branch Technical Position ESTB 11-3, and Generic Letter 81-38.

The WHB design was not changed. However, since the date that the WHB was placed in service, there have been changes in procedures and practices regarding interim storage of LLRW. These changes are described below.

The first change affects the type of waste form that is to be stored in the facility. The WHB liner storage bay was designed primarily for the storage of carbon steel liners that contained evaporator bottoms solidified with cement. The present station practice of using demineralization, in lieu of evaporation, generates LLRW resins and filters which are transferred into liners and dewatered to meet the burial criteria.

The second change involved implementation of the revised 10 CFR 20, " Standards for Protection Against Radiation," at BVPS.

CHANGE TITLE

Use Of a Chemical and Flammable Material Storage Building for the Storage of Mixed Hazardous and Radioactive Material

CHANGE DESCRIPTION

The purpose of this safety evaluation was to document the designation of an acceptable storage facility for the storage of hazardous/radioactive materials referred to as "mixed waste." Mixed waste is Low-Level Radioactive Waste (LLRW) that also contains listed hazardous waste or exhibits one of the four hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity, or toxicity). Both the NRC and EPA regulate the management of mixed waste. Generators of mixed waste must comply with 40 CFR 262 - "Standards Applicable to Generators of Hazardous Waste." Treatment, storage, and disposal facilities must also comply with the applicable provisions of 40 CFR 264 - "Standards For Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," and 40 CFR 265 - "Interim Status Standards For Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities."

CHANGE TITLE

Service Water Valve Normal System Alignment Changes

CHANGE DESCRIPTION

This change affected the Normal System Alignment (NSA) of valves in the cooling water (Service Water System) lines for the main steam valve area cooling coils. The NSA of Service Water System (SWS) flow control valves (2SWS*FCV120A, and 120B), located downstream of the main steam valve area cooling coils, were changed from "Auto" to "Open." The NSA of the flow control valve discharge isolation valves (2SWS*620, and 672) was changed from both "open" to "one open and one closed."

These changes result in the inservice main steam valve area cooler being aligned to full flow and the standby main steam valve area cooler being manually isolated. These changes are designed to minimize tube fouling.

An engineering evaluation was performed and it was determined that the standby main steam valve area cooler may be manually isolated without impacting the ability to safely shutdown Unit 2. The performance of the SWS will be enhanced by maintaining clean standby and inservice coolers.

CHANGE TITLE

2TOP-93-10, Steam Generator Blowdown Hold Tank Cleanup

CHANGE DESCRIPTION

Temporary procedure 2TOP-93-10, Steam Generator Blowdown Hold Tank Cleanup, was written to remove contaminants from the steam generator blowdown hold tanks (2SGC-TK21A, and B). Under this procedure, a portion of the steam generator blowdown hold tank contents will be transferred to the Steam Generator Blowdown Test Tank (2SGC-TK23A) for a batch cleanup of the water. A temporary modification added sodium hydroxide to the Test Tank Pump (2SGC-P26A) recirculation flow path. The sodium hydroxide raised the pH of the test tank to > 9.5 as a pretreatment. The test tank was then discharged through Cleanup Ion Exchanger (2SGC-IOE21A) for removal of the contaminants. The temporary modification used by this procedure consisted of a temporary pump taking suction from a 55 gallon drum of sodium hydroxide solution, which discharges to the suction strainer of the Test Tank Pump (2SGC-P26A).

CHANGE TITLE

2OM-31.4.H, Condenser Tube Cleaning System Startup

CHANGE DESCRIPTION

This procedure change and temporary modification were made because the previous procedure for venting the reinjection pumps for the Condenser Tube Cleaning System was not effective in removing all entrapped air during the fill and vent process. This resulted in inefficient recirculation of the tube cleaning balls.

CHANGE TITLE

2TOP-94-01, Full Flow Test Through Each Inside Containment Auxiliary Feedwater System Check Valve

CHANGE DESCRIPTION

This temporary procedure was developed to provide instructions for fast startup of a motor driven Auxiliary Feedwater (AFW) pump while injecting AFW flow through each inside containment check valve (2FWE*99, 100, 101). The procedure subjects the inside containment AFW check valves to more realistic plant and AFW System initiation conditions. The procedure was used for post maintenance testing.

CHANGE TITLE

DCP-1255, Service Water System Pumps Local Seal Water Pressure Indication

CHANGE DESCRIPTION

This design change installed local pressure indicators 2SWS-PI122A and B for each train of safety related Service Water System (SWS) pump seal water supply. Temporary Modification 2-90-35 was previously installed to achieve the same end.

Design Change 1255 made this local indication permanent. Local indication is needed to assist the operator when adjusting filtered water/seal water pressure at the river water intake structure.

CHANGE TITLE

DCP-1274, Liquid Waste Disposal System, Reduction of Water Inventory

CHANGE DESCRIPTION

In order to reduce the amount of liquid being processed by the Liquid Waste System, this design change was installed to direct non-radioactive clean waste streams (which were previously collected and processed by the Liquid Radwaste System) to the Ohio River via the Roof Drain System. The waste streams are: (1) Condensate from Auxiliary Building Area Ventilation System air conditioning units 2HVP-ACU211A and B, which is now piped directly to the Roof Drain System; and (2) Condensate from Cable Vault and Rod Control Area air conditioning units 2HVR*ACU208A and B, from Pipe Tunnel Area air conditioning unit 2HVR-ACU209, and from the containment vacuum pump seal water discharge which is now collected in a newly fabricated sump.

The contents of the new clean sump are pumped to the Ohio River via the Roof Drain System, using a new pump. Diverter valves in the discharge line from 2HVP-ACU211A and B, and the vacuum pump seal water discharge allow these discharge paths to be directed to the Liquid Waste System or to the sump. These diverter valves are controlled by administrative actions to prevent a discharge at a time when activity is high.

CHANGE TITLE

DCP-1449, Replacement of Condensate Pump Seal Water Regulating Valve

CHANGE DESCRIPTION

The purpose of this design change is to improve the reliability of the seal water supply for condensate pumps 2CNM-P21A, B and C. Condensate Pump Seal Water Pressure Regulating Valve 2CNM-PRV120 was found to have valve seat and diaphragm damage. The damage resulted from a large differential pressure across the valve caused by cavitation and pressure fluctuations when the Hot Well Level Control Valve 2CNM-LCV101 opened or closed.

This design change replaces 2CNM-PRV120, with a heavier duty pressure regulating valve. The new valve can withstand the higher differential pressure.

CHANGE TITLE

DCP-1450, Ventilation Modification to Maintain the Control Room Envelope Pressure

CHANGE DESCRIPTION

In order for the Unit 1 and Unit 2 Control Building pressures to be properly balanced, modifications were made to various pieces of ventilation equipment. When properly balanced, the Control Room envelope pressure is maintained at 1/8 inch water gauge or greater with respect to atmosphere, and positive with respect to adjacent areas.

Air conditioning and filter unit in-leakage, damper bypass leakage, and in-leakage through closed return air registers had caused difficulties with the proper balancing of control room ventilation. Temporary modifications were performed in order to satisfy test acceptance criteria. This design change made permanent modifications to limit in-leakage through the ventilation equipment.

CHANGE TITLE

DCP-1508, Service Water System Drain Valve to Recirculation Spray Heat Exchangers

CHANGE DESCRIPTION

This design change installed a 2-inch diameter drain valve and associated piping at the low point of the Service Water System (SWS) "B" piping train. More specifically, the drain valve was installed on the 24 inch line which supplies Recirculation Spray System (RSS) heat exchangers 2RSS*E21B and E21D.

During normal operation, the SWS piping to the RSS heat exchangers (2RSS*E21A, B, C, and D) is maintained "dry." This design change eliminates the need to cross-connect the "B" train piping to the "A" train for draining.

CHANGE TITLE

DCP-1549, Condenser Tube Cleaning System Modification

CHANGE DESCRIPTION

This modification eliminated the entire lower screen assembly from the strainer sections (2CWA-STR21A, B, C and D) of the main condenser and replaced it with an extraction block which has no moving parts. The design of the extraction block makes it less susceptible to blockage from debris or mussel/clam growth than that of the lower screen assembly. This allows a higher rate of recovery of the tube cleaning balls and, therefore, enhances the system's tube cleaning ability. In addition, the reduction in the number of moving parts will reduce operating and maintenance expenses.

The Relay Logic Operated Control Panel 2CWA-PNL21D was replaced by a new factory wired control cabinet containing a programmable logic controller. The remaining Control Systems 2CWA-PNL21A, B and C required minor wiring changes to accommodate the mechanical hardware changes.

The Differential Pressure Indicating Switch 2CWA-PDIS101D was replaced with a transmitter to coordinate with the new Control System. Demineralized water was supplied to the transmitter sensing ports for periodic backflushing.

The manually operated cast iron system isolation valves 2CWA-1 through 2CWA-40, and the cast iron motor operated valves 2CWA-MOV100A, B, C, and D, were replaced with stainless steel full port ball valves.

These modifications are expected to improve maintenance of condenser tubes and eliminate repetitive repairs of tube cleaning components.

CHANGE TITLE

DCP-1596, Steam Flow Feed Flow Mismatch Coincident with Steam Generator Low Level Reactor Trip Elimination

CHANGE DESCRIPTION

As a follow-up to installation of the median signal selector in the Feedwater Control System and subsequent issuance of Technical Specification Amendment 27, this change eliminated the reactor trip on steam flow/feed flow mismatch coincident with low steam generator water level. The safety related steam pressure signal has been provided with isolation so that the signal can be used for non-safety related purposes such as calculating steam flow. Various annunciators associated with steam generator level and steam flow/feed flow were modified to receive their input signals from the Plant Computer System rather than the Reactor Protection System. Setpoints of some of these annunciators have also been changed.

CHANGE TITLE

DCP-1643, Condensate Polishing Sample Sink Control Panel

CHANGE DESCRIPTION

The Condensate Polishing System (CPS) removes dissolved and suspended impurities from the condensate which result from corrosion, Condenser tube leakage and primary-to-secondary system leakage. The CPS Sample Sink Control Panel (2CND-PNL21) measures and records conductivity and sodium levels at various points in the CPS to monitor the performance of the system.

The sample sink discharges to a Condensate Polishing Building floor drain which flows to sump 2DAS-TK220, which is collected by the Liquid Waste System. This design change reduced the amount of water sent to the Liquid Waste System, thus reducing processing costs.

This modification added approximately 100 feet of piping and pipe supports (all within the Condensate Polishing Building) from the sample sink drain to the Precoat Recirculation Tank (PRT). This design change also removed Temporary Modification 2-90-0011, which was a rubber hose that directed the sample sink drain to the PRT.

CHANGE TITLE

DCP-1718, Deposit Control for the Service Water System

CHANGE DESCRIPTION

Temporary Modification 2-90-34 was used to inject chemicals which control silt deposits in the Service Water System at Unit 2 and for seasonal treatment of macroinvertebrates. The design change upgraded the system installed by the temporary modification to provide a permanent method for chemical treatment of the Unit 2 Service Water System and eliminated Temporary Modification 2-90-34.

CHANGE TITLE

DCP-1913, Outage Communications Upgrade

CHANGE DESCRIPTION

This design change relocated phones and installed additional phones, facsimile machines, and printers in the Outage Complex; installed network equipment and personal computers in the South Office and Shops Building; installed a communication rack, network equipment and fiber optics in the Unit 1 Relay Room; installed network equipment and personal computers in the Control Room; connected Control Room equipment to the site computer network using under carpet cable with Polyvinyl Chloride (PVC) insulation; installed phone jacks outside Containment at both units; installed network equipment in the Unit 1 Computer Room; and connected the Unit 1 office area personal computers and printers to the site network computer. A communication link was also established between the Unit 1 Relay Room and Warehouse addition.

These changes were made to improve clearance coordination and the accuracy of information transferred between the Outage Complex and Control Room, and among the various site organizations.

CHANGE TITLE

DCP-1995, Communications for RadCon Trailers

CHANGE DESCRIPTION

This minor design change removed temporary Private Automatic Telephone Exchange (PAX) cables and a temporary Unit 1 Page Party System cable installed between the Guardhouse and the RadCon trailers, and installed a 25 pair telephone cable and Unit 1 and Unit 2 Page Party System cables between the outage trailer complex and a new terminal box located on the Unit 2 Service Water Valve Pit Structure. The terminal box will house terminal strips for the telephones and the Unit 1 and Unit 2 Page Party Systems used in the RadCon trailer.

The PAX telephone system and the Page Party Systems are designed for this type of expansion. The change provides a permanent communications link to the RadCon trailers and removes temporary cables.

CHANGE TITLE

DCP-2000, Turbine Driven Auxiliary Feedwater Pump Steam Drain System Modification

CHANGE DESCRIPTION

The steam supply line to the Auxiliary Feed Pump Turbine (2FWE*T22) has seven condensate receiver pots. These pots are sized to collect the initial condensate formed, due to heating up the cold pipe, in an effort to limit the condensate from passing through the turbine. This design change modified the drain lines to reduce the amount of condensate which passes through the Auxiliary Feed Pump Turbine during turbine startup, thereby minimizing the potential for turbine damage or malfunction due to excessive moisture.

CHANGE TITLE

DCP-2001, Seal Water Return Line Rerate

CHANGE DESCRIPTION

This design change increased the design pressure of the Seal Water Heat Exchanger (2CHS*E21) tube side, and a portion of the seal water return line. This change also increased the setpoint of the Seal Water Heat Exchanger Relief Valve 2CHS*RV382B commensurate with the new design pressure.

During a medium size break (2 to 8 inch) Loss of Coolant Accident (LOCA), a potential leakage path existed from the Containment Sump to the Auxiliary Building after transfer to recirculation mode has occurred. The medium size LOCA will require safety injection flow to transfer from the Refueling Water Storage Tank (RWST) to the Containment Sump as a source of water. When this occurs, the Recirculation Spray Pumps 2RSS*P21C and D are not pumping to the Reactor Coolant System (RCS) because RCS pressure is above their shutoff head, but the pumps are supplying sump water to the suction of the charging pumps. This flow is small compared to the overall capacity of the recirculation spray pumps and thus the resultant pressure will be at the high end of their pump curve, approximately 175 psig. This pressure is exerted upon the Seal Water Heat Exchanger 2CHS*E21 and its associated Relief Valve 2CHS*RV382B, which had a setpoint of 140 psig corresponding to the 150 psig design pressure of the heat exchanger. This would cause the relief valve to relieve containment sump water to the Volume Control Tank 2CHS*TK22 and beyond until RCS pressure decreased sufficiently to allow the relief valve to blowdown and reseat. (Reference Licensee Event Report 93-04.) This design change eliminated the potential leakage path.

CHANGE TITLE

DCP 2002, Auxiliary Feedwater System Modification

CHANGE DESCRIPTION

This design change relocated check valves away from the main feedwater header; replaced check valves; installed high point vent lines with isolation valves on auxiliary feedwater lines; installed a one inch bypass line around flow control valves in the auxiliary feedwater lines to permit gravity filling and a means of depressurizing upstream piping; and installed pressure gauges to monitor for circulation of water between the Main Feedwater and Auxiliary Feedwater Systems.

This design change provided a long term solution to alleviate the following Auxiliary Feedwater System (FWE) operational issues: (1) water from the Main Feedwater System recirculating through the FWE System, (2) steam pocket formation in FWE piping due to check valve leakage from Main Feedwater System, and (3) steam pocket formation in FWE piping and potential steam collapse water hammer.

CHANGE TITLE

DCP-2025, Steam Driven Auxiliary Feedwater Pump Safety Injection Start Signal

CHANGE DESCRIPTION

This design change modified the existing Auxiliary Feedwater Pump automatic start logic to include an automatic start on receipt of a safety injection signal.

The UFSAR Chapter 15, Small Break LOCA analysis assumes feedwater flow from one motor driven and from the turbine driven pump. The turbine driven pump received an automatic start signal on reactor coolant pump bus-undervoltage or low-low Steam Generator water level as indicated in UFSAR Figure 7.2-1, Sheet 14. The Westinghouse analysis to increase the Steam Generator tube plugging limit assumed turbine driven pump start on undervoltage which is not a qualified signal. This design change modified the start signal circuitry to provide a safety related start signal.

CHANGE TITLE

DCP-2040, Removal from Service of Alternate Minimum Flow Valves

CHANGE DESCRIPTION

This design change disconnected power and control wiring to the alternate minimum flow isolation valves 2CHS*MOV380A and B, and 2CHS*MOV383A and B. The interlocks from the alternate minimum flow isolation valves to the High-Head Safety Injection (HHSI)/charging pump suction isolation valves (2SIS*MOV863A and B) on lines from the LHSI header were removed. Inputs from the Volume Control Tank to HHSI/charging pump suction isolation valves (2CHS*LCV115C and E), and HHSI/charging pump suction isolation valves from the low head safety injection header (2SIS*MOV863A and B) were disconnected. Plant computer inputs were disconnected. All other wiring to the alternate minimum flow isolation valves was abandoned in place. The safety injection signal to close HHSI/charging pump minimum flow isolation valves (2CHS*MOV275A, B and C), and HHSI/charging pump minimum flow discharge header isolation valve (2CHS*MOV373) were removed and the valves left open. Valve 2CHS*MOV275B was deenergized open. Control switches and indicating lights on the main control board for the alternate minimum flow isolation valves were left in place.

The three HHSI/charging pumps are provided with a minimum flow recirculation line to protect the pumps from a low flow condition. Two alternate minimum flow paths were also provided to protect the two operable HHSI/charging pumps whenever a safety injection signal is present and the normal minimum flow path is isolated.

The alternate minimum flow paths are no longer required since the normal minimum flow recirculation line isolation valves were modified to prevent the valves from closing on a safety injection signal.

CHANGE TITLE

DCP-2052, Condensate Polishing System Relief Valve Discharge to the Recirculation Tank

CHANGE DESCRIPTION

This design change installed piping from the discharge of Condensate Polishing System Relief Valves 2CND-RV103 and 107 to Recirculation Tank 2CND-TK21.

Relief Valve 2CND-RV103 provides overpressure protection for the precoat supply header to Demineralizers 2CND-DEMN21A through E. Relief Valve 2CND-RV107 provides overpressure protection for the precoat return header from the Demineralizers to Recirculation Tank 2CND-TK21. Since the Condensate Polishing System is not normally used, there is no flow through these lines. However, condensate leaking by 8 inch butterfly valves 2CND-AOV152A-E and 153A-E pressurizes the headers and causes the relief valves to discharge.

To recover the clean condensate being discharged to a floor drain (and then to liquid waste), Temporary Modification 2-91-10 rerouted the discharge lines to Recirculation Tank 2CND-TK21 via rubber hoses. This design change installed hard pipes from the discharge of both relief valves to the Recirculation Tank and removed the temporary modification.

CHANGE TITLE

DCP-2056, Service Water System Check Valve Internals Removal

CHANGE DESCRIPTION

This design change removed internals from Service Water System check valves 2SWS*95, 96, 697 and 698. The purpose of this design change is to improve the flow of pump seal water and motor cooling water to service water pumps 2SWS*P21A, B and C.

CHANGE TITLE

DCP-2058, Elimination and Retiring in Place of Feedwater Injection Lines to Steam Generator Blowdown Lines

CHANGE DESCRIPTION

This design change eliminated feedwater injection to the Steam Generator Blowdown System by retiring the feedwater injection lines in place and closing steam generator blowdown subcooling isolation valves 2BDG-AOV103A and 103B, and hand control valves 2BDG-HCV102A, 102B and 102C.

Feedwater injection was designed to provide 12 gpm flow and result in 2°F subcooling in the steam generator blowdown lines. Field measurement and engineering calculations concluded that the blowdown lines are already subcooled, so no feedwater injection is needed.

CHANGE TITLE

DCP-2092, Main Transformer Replacement

CHANGE DESCRIPTION

This design change replaced the Unit 1 Main Transformer with a transformer having approximately one half the impedance. To accommodate this change, ties between Unit 1 and Unit 2 345kV electrical buses were isolated. This effectively reduced the contribution of the offsite power network to the short circuit current (faults) that Unit 1 or Unit 2 may experience.

CHANGE TITLE

DCP-2107, Removal of Reference Leg From Refueling Water Storage Tank Level Transmitters

CHANGE DESCRIPTION

This design change replaced the 0-150 inch (water column) range sensor modules on Refueling Water Storage Tank level transmitters (2QSS*LT104A through D) with a 0-750 inch range so that the reference leg is not needed. The reference legs were retired in place.

The root valves for the reference legs were closed and the lines drained. The heat trace on the lines was not removed since the lines still contain fluid up to and including part of the root valve.

CHANGE TITLE

TER-6724, Replacement of Snubbers

CHANGE DESCRIPTION

This design equivalent change replaced 19 pipe support snubbers, located inside the Reactor Containment Building, with snubbers from a different manufacturer. The snubbers are located in the following systems: Steam Generator Feedwater, Main Steam, and Residual Heat Removal.

CHANGE TITLE

TER-7931, Replacement of Snubbers

CHANGE DESCRIPTION

This design equivalent change involved the removal and/or replacement of 14 pipe support snubbers located outside of the Reactor Containment Building. Two nuclear safety related snubbers (2DAS-PSSP001A and 2DAS-PSSP001B) were eliminated. The snubbers are located in the following systems: Reactor Plant Vents and Drains, Safety Injection, Recirculation Spray, Quench Spray, Main Steam and Steam Generator Feedwater.

CHANGE TITLE

TER-8025, Quality Assurance Category Downgrade for Containment Atmosphere Recirculation System

CHANGE DESCRIPTION

This change downgraded piping, supports, valves and heat exchangers for the Containment Atmosphere Recirculation System from Quality Assurance (QA) Category I (ASME Class 3) to QA Category II (non-nuclear-safety-related). The basis for the change in QA classification is that the system performs no safety functions.

CHANGE TITLE

TER-8369, Deenergize Service Water System Motor Operated Valves

CHANGE DESCRIPTION

The Normal System Alignment (NSA) of containment isolation valves (2SWS-MOV153-1, 153-2, 154-1 and 154-2) in the Service Water System (SWS) supply and return lines for the containment atmosphere recirculation cooling coils was changed from open to closed, and the valves were deenergized. The NSA of chilled water supply and return line isolation valves (2SWS-MOV163 and 164) for the containment atmosphere recirculation cooling coils was changed from open to closed by placing the control switch for these valves (2SWS-MOV163 and 164) and the SWS supply and return line isolation valves (2SWS-MOV161 and 167) in the closed position and deenergizing the valves. The NSA of the containment atmosphere recirculation cooling coil header "A" manual inlet and outlet isolation valves (2SWS-781 and 807) was changed from closed to open.

SWS water flow to the containment atmosphere recirculation cooling coils is not required since it has been determined that in the event of a loss of offsite power, containment bulk temperatures will remain less than 135°F. The NSA of manual valves 2SWS-781 and 2SWS-807 was changed to open so that all three containment atmosphere recirculation cooling coils may be supplied service water by only one supply and return header.

CHANGE TITLE

TER-8408, Chemical Addition Tank Annunciation Discrepancies and Other Minor Updated Final Safety Analysis Report Corrections

CHANGE DESCRIPTION

This technical evaluation report involves two Updated Final Safety Analysis Report (UFSAR) changes. The changes are described below.

Design Change 987 removed the chemical addition pump motor thermal overload input to Annunciator A6-2B and its digital computer point, and changed the annunciator nomenclature from "Chemical Addition Tank/Pump Trouble" to "Chemical Addition Tank Trouble." The power supply breaker to the Chemical Addition Pump 2QSS-P23, is locked in the "Off" position except when the pump is being used for filling or recirculation of the Chemical Addition Tank. This caused Annunciator A6-2B to be in alarm most of the time, and did not support the "Dark Board Concept." UFSAR Section 6.2 will be revised to delete reference to the Chemical Addition Pump trouble annunciator in the main control room.

UFSAR Figure 9.1-4, " Piping: Spent Fuel Pool Cooling and Cleanup System," shows spent fuel pool Level Indicators 2FNC*LI102A and B, and Temperature Indicators 2FNC*TI103A and B as Post Accident Monitoring Indications (PAM). These indicators are not part of the Regulatory Guide 1.97 commitment made to the NRC, and are not listed among the PAM requirements given in UFSAR Section 7.5. The PAM designation will be removed from the spent fuel pool level and temperature indicators shown on UFSAR Figure 9.1-4.

CHANGE TITLE

TER-8553, Safeguards Fire Area Boundary Evaluation and Updated Final Safety Analysis Report Change

CHANGE DESCRIPTION

This change revised design documentation to agree with the as-built condition, and documented the acceptability of the existing design. The fire barrier between safeguards fire areas SG-1N and SG-1S at Elevation 690'-11" has a hatchway opening in it. This evaluation documented the acceptability of this opening and changed the Updated Final Safety Analysis Report, Safe Shutdown Fire Protection Report and RM-301 series drawings to delete the indicated barrier at the doorway opening, and to indicate that it is a fire boundary only. This is in accordance with Generic Letter 86-10.

CHANGE TITLE

TER-8579, Auxiliary Boiler Propane Bottle Pressure Indicators

CHANGE DESCRIPTION

This change involved installation of pressure indicators at each of two propane gas bottles. The indicators are located in the 1/4 inch propane lines after pressure regulating valves PRV-136A and 136B.

A pressure indicator will identify when a propane bottle is ready for change-out to ensure Auxiliary Boiler availability, and minimize personnel hazards involved with checking bottle pressure.

CHANGE TITLE

TER-8792, Normal System Alignment Change from Open to Shut for Auxiliary Steam System Valves

CHANGE DESCRIPTION

The normal system alignment for Auxiliary Steam System valves 2ASS-456 and 2ASS-457 was changed from open to shut. These valves are the inlet and outlet isolation valves, respectively, for the Auxiliary Steam Flash Tank pressure control valve 2ASS-PCV125.

The Auxiliary Steam Flash Tank (2ASS-TK27) is maintained at 0 psig by pressure control valve 2ASS-PCV125. Flash Tank drains flow by gravity to the Auxiliary Steam Condensate Receiver (2ASS-TK21). Pressure control valve 2ASS-PCV125 was found to be susceptible to inaccurate pressure readings due to a build-up of condensate in the instrument leg.

CHANGE TITLE

TER-8814, Unit 2 Updated Final Safety Analysis Report Change Involving the Reactor Protection and Engineered Safety Feature Setpoints

CHANGE DESCRIPTION

This change updates specific design information concerning the Reactor Trip and Engineered Safety Feature setpoints presented in the safety analysis report to reflect Reactor Protection and Engineered Safety Feature setpoint study results. It incorporates the current plant design analysis and is consistent with the technical specifications. The scope of this change is limited to the Updated Final Safety Analysis Report. No physical plant changes were made.

CHANGE TITLE

TER-8810, Supplemental Leak Collection System Air Flows for Equipment Qualification Cooling

CHANGE DESCRIPTION

This technical evaluation report revised the Updated Final Safety Analysis Report, Operating Manual, Design Basis Documents and drawings to clearly reflect the minimum required Supplemental Leak Collection and Release System (SLCRS) air flows necessary to remove heat in the Cable Vault Building, Elevations 735' (East and West Cable Vault) and 755' (Rod Control Area), as well as the Auxiliary Building (Elevation 735'). These flows were established since the SLCRS is considered the primary safety-related means of cooling in the Rod Control Area, and East and West Cable Vaults.

It was discovered that inadequate cooling capability was provided for the Unit 2 East and West Cable Vaults (Cable Vault Building Elevation 735'). This problem resulted from a combination of factors related to the interface between two systems.

The first system, SLCRS, was found to have inadequate flow to provide the necessary cooling. At the same time, the Cable Vault and Rod Control Area air conditioning units 2HVR*ACU208A and B, credited in the UFSAR and Operating Manual as being the primary means of safety-related cooling for the Cable Vaults, were found to have their Service Water supplies manually isolated since 1991. This configuration change placed primary responsibility for area cooling on the SLCRS.

In addition, a reassessment of the heat loads that may be generated under abnormally severe conditions by the charging pump (2CHS*P21A, B, C) motors necessitated a revision of the SLCRS flow needed to maintain the charging pump cubicles below 120°F, and the motor windings below their design temperature limit.

CHANGE TITLE

Revise Settings of Degraded Grid Relays

CHANGE DESCRIPTION

The setpoints for the 4160V and 480V Emergency Bus degraded grid (sustained undervoltage) relays were changed to account for voltage drop and setpoint inaccuracy. There are two types of relays involved: ITE-47H and ITE-27H. Each 4160V bus uses two three-phase ITE-47H relays that are fed from separate potential transformers. The 480V busses use one three-phase ITE-47H relay and one single-phase ITE-27H relay. Each relay is fed from separate potential transformers. For each bus, both relays must operate to cause a bus undervoltage trip. Only one relay has to reset to remove the undervoltage trip.

The setpoints for the ITE-47H relays were changed from 90 percent to 94.4 percent. This includes 92 percent for voltage drop, plus 2.4 percent for setpoint inaccuracy. The setpoints for the ITE-27H relays were changed from 90 percent to 93.6 percent. This includes 92 percent for voltage drop, plus 1.6 percent for setpoint inaccuracy. The relay reset value for the ITE-47H is 2 percent above the operate value, and was changed from 92 percent to 96.4 percent. The relay reset value for the ITE-27H is 3 percent above the operate value, and was changed from 93 percent to 96.6 percent.

CHANGE TITLE

Revise Operating Band of the Heat Trace for Refueling Water Storage Tank Level Transmitters 2QSS-LT104A, B, C and D

CHANGE DESCRIPTION

This change affects the operating band of the heat trace circuits for Refueling Water Storage Tank (RWST) Level Transmitters 2QSS-LT104A, B, C and D.

The eight heat trace circuits for the identified level transmitters will be manually operated. This is a performance enhancement to prevent severe cold weather from causing frozen instrument lines.

CHANGE TITLE

Revise Operating Band for Heat Trace Associated With Pipe Line 2SIS-008-346-2

CHANGE DESCRIPTION

This change affected the heat trace associated with pipe line 2SIS-008-346-2. The pipe line is located between the discharge of the low head safety injection pumps and the Refueling Water Storage Tank.

This change adjusted the operating band of the heat trace circuits to allow proper operation (by providing freeze protection) in extremely cold weather.

CHANGE TITLE

Provide Temporary Power for Service Water System Pump 2SWS-P26 and Disable Heat Tracing for Tank 2SWS-TK22 and Pipe Line 2SWS-500-B-29-4

CHANGE DESCRIPTION

A power source shorted to ground, disabling the Service Water System (SWS) Deposit Control Injection Pump 2SWS-P26 and heat traces associated with the SWS Deposit Control Supply Tank 2SWS-TK22 and SWS pipe line 2SWS-500-B-29-4. This temporary modification provides power to 2SWS-P26 until repairs are made. Disabling the heat traces keeps the loading on the temporary power source from overloading its 15 amp circuit breaker, and has no detrimental effect due to the minus 9°F freezing point of the contained deposit control fluid.

CHANGE TITLE

Temporary Modification to Refueling Water Storage Tank Heat Trace Circuits 1-47 and 1-69

CHANGE DESCRIPTION

The Refueling Water Storage Tank (RWST) level transmitter instrument loops 2QSS-LT104A, B, C and D were modified by lengthening the " On" cycle for the heat trace to provide steady heat input with less cycling, and by eliminating 2-foot long cold sections caused by localized heat trace failure.

CHANGE TITLE

Temporary Modification to Deadband of Heat Trace Circuits 1-47 and 1-69

CHANGE DESCRIPTION

Refueling Water Storage Tank level transmitter instrument loops 2QSS-LT104A, B, C and D were improved by changing the deadband of the heat trace circuits to dampen the temperature swing on the instrumentation loops.

CHANGE TITLE

Change Length of Plant Hose Rack Hoses From 75 Feet To Either 50 or 100 Feet

CHANGE DESCRIPTION

This change standardized fire hose lengths throughout the Station. There are no affects on the standpipe systems, or an appreciable decrease in nozzle pressure due to changed fire hose lengths.

CHANGE TITLE

Remove Internals of Excess Flow Check Valves 2EGA*125 and 2EGA*151

CHANGE DESCRIPTION

This change removed the internals of excess flow check valves in the emergency diesel generator control air supply lines downstream of the starting air tanks. The excess flow check valves would close when downstream relief valves opened.

If a relief valve opens with the check valve internals removed, starting air tank pressure will drop and control room operators will be made aware of such abnormal emergency diesel generator control air conditions via the starting air tank pressure alarm.

CHANGE TITLE

Temporary Discharge Flow Path for Cooling Tower Pump House Sump Pumps

CHANGE DESCRIPTION

Temporary piping/hose was installed from the discharge of the cooling tower pump house sump pumps to the suction of the cooling tower pumps as an alternative to discharging to the river from the sump pumps.

CHANGE TITLE

Change Setpoint for Low Seal Water Header Pressure Switch 2CWS-PS117 and Isolate the Backup Seal Water System

CHANGE DESCRIPTION

This temporary modification lowered the low seal water header pressure setpoint from 30 psig to 20 psig in order to extinguish Annunciator A6-3E. Prior to this change, the annunciator remained illuminated and was of no benefit to operators.

This temporary modification also changed the normal system alignment of controls for the backup seal water pumps from the "Auto" to the "Off" position. With the pumps off, the Seal Water System operates with filtered water. Use of the backup system was undesirable due to lower water quality.

CHANGE TITLE

Install a Gag on Relief Valve 2CNM-RV114 to Close and Maintain the Valve Closed During Normal Plant Operation

CHANGE DESCRIPTION

This temporary change involved installation of a gag on relief valve 2CNM-RV114. The relief valve was stuck open and plant conditions did not permit maintenance to be performed. Relief valve 2CNM-RV114 is a bonnet relief for gate valve 2CNM-22 when the gate valve is closed. Gate valve 2CNM-22 is the suction isolation valve to Main Feedwater Pump 21A (2FWS-P21A). This suction isolation valve must be open when the main feedwater pump (2FWS-P21A) is running during normal plant operation. The gag was subsequently removed and the relief valve was returned to service.

CHANGE TITLE

Temporary Modification to Lift Power Supply Lead to 2SSR*SOV129A2; and Remove Valve 2SSR-172 and Cap the Open Pipe Ends

CHANGE DESCRIPTION

Inside containment sample line isolation valve 2SSR*SOV129A1 was stuck open and inoperable. Technical Specification 3.6.3.1 requires the outside containment isolation valve to be closed. Therefore, the outside containment sample line isolation valve (2SSR*SOV129A2) was deenergized shut and the relief valve (2SSR*RV122) between valve 2SSR*SOV129A2 and the containment penetration was prevented from lifting by removing a manual valve (2SSR-172) and capping the lines.

CHANGE TITLE

Lift Leads on Main Feedwater Pump 2FWS-P21B Motor Thermal Protection Relay 49-VC201

CHANGE DESCRIPTION

It was suspected that the main feedwater pump motor resistance temperature detector (RTD) was defective and could cause a false trip of the motor on overtemperature. Therefore, leads were lifted on the motor thermal protection relay (49-VC201). Temperature can still be monitored by RTD via the computer.

CHANGE TITLE

Leak Repair of Valve 2ASS-861

CHANGE DESCRIPTION

A manual valve (2ASS-861) in the line from the Auxiliary Boiler System to the Auxiliary Steam System developed a steam leak at the body to bonnet gasket. To perform an on-line repair, the joint was wire wrapped, and 12 body to bonnet studs were removed and cap nuts were installed. Sealant was injected through the capnuts.

CHANGE TITLE

Change Normal System Alignment of Charging Pump Minimum Flow Discharge Header Isolation Valve 2CHS-MOV373 To Locked Open and Deenergized

CHANGE DESCRIPTION

This change addresses a licensing and design basis concern with the minimum flow arrangement not meeting single failure criteria described in NRC Branch Technical Position ICSB 18. The change added administrative controls to the normal system alignment change initiated by design change 2040 (refer to page 23).

CHANGE TITLE

Installation of Temporary Connections for Emergency Seal Water Supply To the Cooling Tower Pumps

CHANGE DESCRIPTION

This temporary modification installed isolation valves and connections to allow emergency seal water supply to the cooling tower pump seals and motor bearing coolers. As a result of this change, the effect of a loss of seal water due to a failure of the seal water header will be minimized.

CHANGE TITLE

Temporary Modification Associated With Heat Trace for Pressurizer Power Relief Valve 2RCS*PCV455D

CHANGE DESCRIPTION

Test results indicated that the control resistance temperature detector (RTD) for heat trace associated with Pressurizer Power Operated Relief Valve 2RCS*PCV455D was defective and that the test RTD was functional. This temporary modification utilized the test RTD in the control circuit to allow proper operation of the temperature control system for the heat trace circuit (3-135).

CHANGE TITLE

Leak Repair of Heater Drain Pumps Discharge Head Bases

CHANGE DESCRIPTION

A leak developed on the discharge head base gasket under the suction piping of the heater drain pumps. To repair the leaks, sealant was injected through injection capnuts and slotted studs.

CHANGE TITLE

Temporary Modification Associated With Troubleshooting Emergency Switchgear Supply Fan Control Circuit HV2BB

CHANGE DESCRIPTION

The emergency switchgear supply fans 2HVZ*FN261A and 2HVZ*FN261B are designed to have one fan running with the second fan in standby. If the running fan is automatically tripped, the standby fan will start on a loss of pressure signal from the fan which was tripped. The loss of pressure signal energizes a time delay relay which immediately opens the dampers of the standby fan and, after a 15 second delay, starts the standby fan.

A circuit was discovered through an indicating light which could, under some conditions, prevent the standby fan from starting. A blocking diode was temporarily installed in the indicating light circuit to verify that a proposed permanent change would eliminate this possibility.

CHANGE TITLE

Auxiliary Feedwater (AFW) Temporary Check Valves On AFW Header Vents

CHANGE DESCRIPTION

Temporary check valves used to repressurize the AFW header were previously installed. This evaluation permitted the valves to remain installed during the fifth operating cycle. The valves are used to minimize the time required for performance of the AFW header repressurization procedure.

CHANGE TITLE

Temporary Installation of a Recorder To Monitor Meteorological Instrumentation

CHANGE DESCRIPTION

A temporary recorder was installed to monitor primary and redundant Meteorological System instrumentation. The recorder was connected to only one system at a time. The installed recorders were sent to the vendor to be overhauled. The temporary recorder monitored the instruments while the permanent recorders were removed.