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402/636-2000

July 22, 1992
LIC-92-206R

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, DC 20555

References: 1. Docket No. 50-258
2. Letter from OPPD (W. G. Gates) to NRC (Document Control Desk) dated March 1, 1991 (LIC-91-070R)

Gentlemen:

SUBJECT: Annual 10 CFR 50.59 Report for Fort Calhoun Station

As required by 10 CFR 50.59(b)(2), please find attached Omaha Public Power District's annual report containing brief descriptions of changes, tests and experiments including summaries of the associated safety evaluations performed for the Fort Calhoun Station. This information is for the period of February 1, 1991 through January 22, 1992.

If you should have any questions, please contact me.

Sincerely,

W. G. Gates

W. G. Gates
Division Manager
Nuclear Operations

WGG/sel

Attachment

c: LeBoeuf, Lamb, Leiby & MacRae
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ATTACHMENT

As required by 10 CFR 50.59(b)(2), Omaha Public Power District is providing its annual report containing brief descriptions of changes in the facility, changes in the procedures, and changes in tests or experiments conducted including summaries of the associated safety evaluations performed for the Fort Calhoun Station. This information is for the period since the end of last year's report, February 1, 1991, through January 22, 1992.

Changes in the Facility

Package No.	Description/Analysis
MR-FC-80-104	Radwaste Building

Description:
This modification provided additional space for radwaste processing, packaging and temporary holdup. The new Radwaste Processing Building (RPB) also provides an office facility for the Radwaste Group.

Safety Analysis:
All changes to systems were non-CQE systems. Interface of new limited-CQE RPB and Auxiliary Building had been evaluated. There was no increase in accident probabilities. Piping penetrations installed in the Auxiliary Building shear wall did not cut reinforcing bars, therefore, the wall capacities were unchanged. The opening in column row U shear wall in the Auxiliary Building was filled with reinforced concrete to provide the wall with the same load carrying capacity as before the opening was made. No design basis of any barriers was affected. No increased radioactive release paths were created. A new discharge of HVAC exhaust for both the Radwaste Processing Building and CARP Building was created. This exhaust is HEPA filtered and monitored and will not significantly effect the total plant release. The Design Change Package (DCP) establishes that the requirements of 10 CFR 20 & 100 and 40 CFR 190 have been maintained. Failure of limited-CQE RPM would result in an accident that has been previously evaluated in the USAR, and would not result in an accident limiting ability to safely shutdown and maintain control of the reactor. The Technical Specifications were amended as noted in the DCP. None of the changes impacted a margin of safety as identified in the Technical Specifications. During construction, configuration of the plant was in accordance with Technical Specifications requirements. There was no reduction in the margin of safety. During testing of gaseous effluent monitors, systems unaffected by the modification were available to ensure no degradation of nuclear safety occurred. The plant remained in an analyzed condition. The modification did not change the primary pressure boundary or result in reduction of any barriers which prevent release of radioactivity.

MR-FC-80-121 Additional Nuclear Alarms

Description:
This modification was to improve coverage of the Emergency Alarm System (EAS). For this purpose a gai-tronics mult-tone generator was added to the gai-tronics system, and additional flashing lights were installed at various locations in the plant. The power feeds to the EAS from AI-42A were removed and replaced with a power feed from MPP-14 which is fed from the security diesel. This decreased the loading of inverter #1. The tone of the tone generator was changed from siren mode to steady tone due to the fact that plant personnel could not tell the difference between the nuclear alarm and the fire alarm.

Safety Analysis:
This modification involves only non-CQE equipment which has no adverse impact on other plant systems or components. The response of the EAS will be equal to or better than the response prior to the modification. There is no interface between this system and any system or component that could cause any previously analyzed malfunction to equipment important to safety or increase the consequences of a malfunction of equipment important to safety. Failure of any component of either the EAS or Gai-Tronics system would not result in an accident that could impact the ability to shutdown and maintain the reactor or control the release of radioactivity. During construction and post maintenance testing there were no Technical Specification requirements for any component or system in this modification. The test configuration is identical to the final configuration.

MR-FC-83-004A Remaining VA-66 Flow Problems - Part 1 (Mechanical)

Description:
This modification installed the VA-121 booster fan to increase flow to VA-66 with associated duct and dampers. This modification was abandoned in place and not hooked up electrically (under FC-83-004B) based on revised fuel handling accident for FCS. The duct work, fan, and dampers will be maintained in original configuration for flow, with dampers locked open.

Safety Analysis:
The ductwork, fan and dampers meet the design and construction standards of seismic installation and leak testing. The system performance was not changed nor were the characteristics changed by leaving the equipment in place and inoperable. Leaving VA-121 in place and inoperable does not increase radiological consequences because the analysis shows that conservatively ignoring VA-66 charcoal filter during a fuel handling accident keeps radiological consequences well within 10 CFR 100 limits. The three dampers will all be locked open to provide for least resistance flow and leaving the VA-121 fan components in place will not introduce a different possibility of an accident, or change safe shutdown systems or radiological

consequences. The vendor states that leaving the fan blades, motor and bearings to rotate is preferable to no rotation. No new failure modes have been introduced of a different type. No credit is taken for the system during a fuel handling accident. The system remains in its Technical Specification requirement configuration. The as-built system is surveillance tested on a monthly basis for VA-66 per Technical Specification 3.5 and the safety margins are not affected. Post modification testing on the installed duct and dampers was equivalent to original testing and has been successful since 1984. Flow testing is not to be performed because the VA-121 fan will not be made operable. The fan is not needed and does not impact the existing system. The initial leak test of the installed duct was successful. No testing will be performed so there will not be a configuration which would result in a change to the primary pressure boundary or the reduction in any barriers which prevent the release of radioactivity to the environment.

MR-FC-85-049 Security System Upgrade

Description:
This modification provided for 1) a security computer, 2) a security video switcher, 3) a security system simulator, 4) security consoles, 5) riverbank stabilization south of the Intake Structure, 6) expanded Protected Area fences/Jersey barriers, 7) a security diesel generator and power distribution system, 8) a security Uninterruptable Power Supply (UPS) system, 9) a manhole and duct bank network with cable trench system on the Protected Area perimeter, 10) Protected Area lighting (high mast & wall mounted), 11) a Protected Area access portal (Warehouse), 12) facility improvements for the new computer, video switcher and simulator, 13) halon fire protection systems in the Warehouse and Security Building for computer & console equipment, 14) closed circuit television towers and closed circuit televisions, 15) a microwave link detection system, 16) access control hardware for each access control door and alarm only door, 17) Very High Radiation Area door local alarm boxes (horns/lights), 18) radio communications equipment, antennas and tower, 19) remodeled Security Building Communications Room, 20) site drainage north of Warehouse, northeast of Maintenance Shop and the entire southeast corner of Protected Area.

Safety Analysis:
The security system and the modification do not involve CQE equipment. The modified system cannot initiate an accident. No adverse interactions with other plant systems were identified. The modified system does not form a portion of the primary pressure boundary or a portion of a system designed to assure fuel integrity or mitigate the consequences of an accident. The modification does not interface with safety systems.

MR-FC-86-116 Chemical and Radiation Protection (CARP) Building - Locker Facility, Office/Cafeteria Addition

Description:
This modification provided a new lab facility to replace a much smaller lab in the Auxiliary Building; a locker facility for both OPPD personnel and contractors; and office space for Chemistry and Radiation Protection personnel. An additional facility (office, cafeteria building) was added to the scope of the CARP facility. The office/cafeteria includes a 10,000 square foot building adjacent to the CARP Building. A large kitchen, cafeteria and several offices were built to provide additional cafeteria space and office space.

Safety Analysis:
The Limited-CQE structure met design functions for Limited-CQE structures listed in USAR. The modification did not increase the probability of an accident. Piping penetrations installed in the Auxiliary Building wall did not cut any reinforcing bars, therefore, wall capacities remained unchanged. An opening in column/row 9 shear wall in the Auxiliary Building was filled with reinforced concrete to provide the wall with the same load carrying as before the opening was made. The CARP Building is Limited-CQE but does not adversely affect the pressure boundary or a radiological barrier. No new release paths were created. Release of HVAC exhaust is through the Radwaste Processing Building. Interface with CQE structures (Auxiliary Building) has been evaluated in the Design Package. Failure of the Waste Disposal(WD) line between the CARP and the Auxiliary buildings would allow the contents of the line to flow to the Auxiliary Building. A liquid radwast spill in the Auxiliary Building has been previously analyzed in the USAR. Total volume of the water and contamination levels in the WD line is insignificant. No reduction in the margin of safety resulted. During construction, precautions were taken to ensure that any activities involving potential interface with CQE structures did not impact nuclear safety.

MR-FC-88-009 RM-065 VIAS Actuation

Description:
This modification eliminated the need for Operators to manually activate RM-065 in an accident situation. Also, this modification relocated RM-065 due to the changes in the Control Room per modification MR-FC-81-51.

Safety Evaluation:
Radiation monitor RM-065 does not have a safety-related function and its performance was not changed. All components were seismically analyzed to preclude "2 over 1" concerns and electrical separation is maintained. The new interface between RM-065 and the Ventilation Isolation Actuation Signal (VIAS) is electrically isolated to prevent challenges to the VIAS components. The modification has no direct or indirect interactions with the fuel, the pressure

boundary, or containment barriers which limit the consequences of an accident as defined in the USAR. Failure of RM-065 will not challenge CQE systems or components which interface with these barriers.

MR-FC-88-049 Instrument Air Dryer Installation

Description:
The installation of a new heaterless air dryer CA-12 along with prefilters CA-11A/B and CA-13A/B. This new air dryer will be utilized in parallel with the existing air dryer CA-4.

Safety Analysis:
The modification does not involve CQE equipment. Instrument air is not referenced in USAR Chapter 14 as an accident initiator. No adverse interactions with other plant systems were identified. The modification does not involve or impact any of the barriers which limit the consequences of an accident. CQE equipment which utilizes instrument air are designed to assume their 'fail safe' position upon losses of instrument air. Addition of new equipment will increase reliability of the instrument air system. Limited CQE pipe supports are seismically designed to maintain their integrity. The instrument air system is not addressed by the Technical Specifications, therefore, no technical specification margins of safety are reduced.

MR-FC-89-061 Normal and Emergency Lighting Upgrade

Description:
This modification provided for additional AC-DC emergency lighting with self contained battery supplies. Additional normal lighting fixtures were also added in the Diesel Generator Rooms (63 & 64).

Safety Analysis:
This modification only involves non-CQE equipment which has no adverse impact on other plant systems or components. There is no interface between this system and any safety-related system or component that could cause any previously analyzed malfunction to equipment important to safety. The response of this modification will provide adequate lighting to comply to the requirements of 10 CFR Appendix R. Also, it will provide adequate normal lighting in both diesel rooms. The Emergency Lighting System is non-CQE and there are no interactions between any equipment or systems that could increase the consequences of a malfunction of equipment important to safety. The failure of the system would not result in any accident limiting the ability to safely shutdown and maintain the reactor or control the release of radioactivity. This modification does not increase the margin of safety defined in the Technical Specifications.

MR FC-89-085 Diesel Generator (DG) Air Inlet Damper Control

Description:
This modification provided for the replacement of six(6) solenoid operated valves (SOVs) for DG-1 and DG-2 fresh air inlet dampers.

Safety Analysis:
The SOVs that were replaced have the same form, fit, and function as the originals. The new SOV's have a much wider temperature operating range, enhancing the availability of the Diesel Generators (DG). Fuel integrity was maintained by the assurance that the DGs would be available when called upon. The DGs remained in a condition allowed by the Technical Specifications. Redundant systems will be available during testing. Should the SOVs fail, the louvers fail open allowing combustion and cooling air flow to the DGs.

MR-FC-90-018 Waste Drain Line for "B" Steam Generator

Description:
This modification provided for the removal of a dead leg from a 4 inch drain header containing a 100 REM "HOT SPOT" and installation of a flanged flushing connection to facilitate removal of future waste collection in this line by flushing or removal of the flange and cleaning.

Safety Analysis:
This modification had no operational effect on Fort Calhoun Station. It was performed to reduce radiation exposure to plant personnel. Addition of the flush connection will not increase the probability of an accident. Any lines which were isolated during installation were isolated in accordance with approved tagout and Shift Supervisor approval. The installation did not put the plant in a condition which could degrade nuclear safety. No special post modification testing was done. A hydrostatic leak test of the affected piping was not required by B31.1-1986, Section 137.3.2, since the line is open to the atmosphere and drains downstream of the last shutoff valve.

MR-FC-90-027 RWP Building Room 29 Tie-ins

Description:
This modification provided for MR-FC-88-121 to install piping tie-ins for the Radwaste Building. This includes piping tie-ins which route through the Volume Control Tank Room, Room 29. Room 29 becomes uninhabitable when the Plant is on line. To make the Radwaste Building functional prior to the 1992 Outage, Room 29 needed to be completed.

Safety Analysis:
Seismically supporting the capped extension does not change probability of occurrence of a previously evaluated accident. The system interaction checklist looked into all interactions and found no new initiators. There is no contact with any equipment important to safety, except for

proximity, therefore no changes to the Technical Specifications are required.

MR-FC-90-035: TM-89-E-007 and TM-89-M-53 Closure

Description:
This modification provided for the closure of Temporary Modification 89-E-007 which was written to remove the dual setpoint switch on RM-061. This modification also provided for the close out of Temporary Modification 89-M-053 which was written to install an attenuator plate on RM-063H.

Safety Analysis:
RM-063H is non-CQE. Although RM-061 is CQE, removal of the setpoint switch returns the monitor to its original configuration. The modification also removed a potential missile hazard from RM-061. The installation of an attenuator plate on RM-063H provided the proper overlap with RM-063M. The modification does not affect containment boundaries or radioactive release paths. The system impacted by this modification are not covered by the Technical Specifications.

MR-FC-90-049 SIGMA Meter Replacement

Description:
This modification provided for replacement of existing variable power trip power margin indicating meters A/JI-007X,Y, B/JI-007X,Y, C/JI-007X,Y, and D/JI-007X,Y. Also this modification adds resistors in order to compensate for the impedance difference with the original meters.

Safety Analysis:
The modification did not change the purpose or function of the circuit. All work and testing was done during hot or cold shutdown. Testing was done in accordance to the PRC approved testing procedure and did not affect nuclear safety. The modification changed the output circuit of the APD calculator to facilitate proper impedance matching between the calculator and the new meters. The function of the calculator will not be affected.

MR-FC-90-074 CEDM #9 and #13 Modification

Description:
This modification provided for the removal of the upper housings of CEDMs #9 and #13. These housings were replaced with blind flanged joints, which included metal o-rings, bolts, nuts, and washers.

Safety Analysis:
The CEDM pressure housings that were removed were unused. These housing locations do not contain any mechanism or other active component. These spare locations were originally designed for possible future use. The unused CEDM housings consequently do not serve to mitigate the consequences of any accident or malfunction of equipment important to safety. The safety analysis report remains unchanged after removal of #9 and #13 CEDM. The integrity

of the joint is maintained by 8 studs, washers, and nuts. Removing #9 and #13 unused CEDMs and installing the CEDM blind flange did not reduce the margin of safety defined in the basis for the reactor coolant leakage limits. The leakage limits remained the same to provide the same degree of assurance that the chance of a crack or seal failure would not progress to an unsafe conditions without detection and proper evaluation. It is considered that the margin of safety will likely increase rather than decrease. The reactor coolant system remained in a mode as governed by the Technical Specifications resulting in a previously analyzed plant condition. There was no increase in the probability of an occurrence and no impact on other plant systems. There was no breach to the barriers for release of radioactivity and no affect on post accident modes to other CQE systems. The plant was in cold shutdown and the RCS was 'tagged out.' CEDMs #9 and #13 were leak tested under Reactor Coolant System operating conditions already described in the USAR. The modification did not have the credible potential for directly/indirectly damaging CQE systems or components.

MR-FC-91-027 HELB in Room 57 Part I

Description:
This modification provided for removal of the 2 inch tie-in-piping to the 8 inch Auxiliary Steam Header in Room 81. This removed the steam supply through Room 57 and AS-533 in Room 81.

Safety Analysis:
This modification effectively removed the existing capability to heat the diesel generator rooms. This is not a safety concern because engineering calculations (FC05765) indicated the diesel generator rooms will be maintained above 15°F (lower DES limit due to jelling of fuel oil). Elimination of the high energy line in Room 57 increases nuclear safety. The new tap in Room 82 has no effect on nuclear safety because equipment in that room has no safety function. The auxiliary steam piping was isolated and vented prior to cutting, the supply pipe was cut before the relief valve (AS-533) was removed and the remaining capped pipe in Rooms 57, 64, 63, 65 and 66 were left vented to prevent pressure fluctuations due to temperature changes. These precautionary steps addressed overpressure protection and flooding issues during installation.

Changes in Procedures/Temporary Modifications (TM)

Procedure/TM No.	Description/Analysis

AOP-22

Reactor Coolant Leak

Description:
The purpose of this procedure change was to:

- protect the charging pumps from air binding when switching from the Boric Acid Storage Tank (BAST) to the Safety Injection Refueling Water Tank (SIRWT)

- ensure that containment isolation criteria/requirements are met during a LOCA

- make steps 44 and 45 of AOP-22 consistent with similar steps in EOP-03 (Rev. 15 - Step 3.50 & 3.51)

- correct an incorrect reference in step 44.C.

Safety Analysis:
AOP changes apply only after an accident has already occurred. Operator actions in the AOP are not initiating events for any equipment malfunction or accident evaluated in the USAR. The AOP change ensures that penetration M-3 is operable and capable of preventing containment leakage once the charging pumps are stopped. Therefore, the consequences of an accident (LOCA) have not increased. Operator actions in the AOP change prevent containment leakage via penetration M-3. As concluded, containment integrity is maintained and penetration M-3 is operable. The margin of safety as defined in the basis for Technical Specification 2.6 is not reduced by the AOP change.

CH-SMP-MI-0011

Non-Routine Sampling

Description:
This is a new procedure for performing non-routine sampling while ensuring compliance with Standing Orders (SO) SO-O-1 and SO-O-44.

Safety Analysis:
The new procedure precludes the loss of containment integrity and ensures compliance with appropriate administrative controls (Standing Orders O-1 and O-44) as required in the USAR. Compliance with the procedure ensures proper conduct of operation of a valve for sampling to ensure no increased consequences of an accident. The procedure only allows valve operation for sampling, with appropriate approval, which could not cause a malfunction of any equipment. Operation of a sample valve could not cause an increase in the consequences of a malfunction or reduce the margin of safety.

CH-SMP-PR-0011 Safety Injection and Refueling Water Tank Sampling

Description:
Chemistry Manual Procedure (CMP) 2.1 has been upgraded by Project 1991 to comply with Fort Calhoun Station Writers Guide. CH-SMP-PR-0011 is 1 of 22 procedures that superseded CMP 2.1 Rev. 14.

Safety Analysis:
There is no accident evaluated in the USAR that is applicable to this evolution. The activity has no safety related functions. Even though the sampling valves described in the procedure are CQE the activity will not decrease the design specifications or the reliability of the sampled system. This is a sampling procedure manipulating CQE valves and will not affect the function of the sampled system. The sampling activity is not likely to cause SIRWT level to fall below minimum requirements as stated in the Basis of Technical Specification 2.3. The tank volume is routinely maintained at a level significantly above Technical Specifications requirements. A potential malfunction would be that the valves were left open. However, the change in level of the Safety Injection and Refueling Water Tank has been previously evaluated.

'OP-03 Loss of Coolant Accident

Description:
The purpose of this procedure change was to incorporate steps ensuring the charging header is kept pressurized by the High Pressure Safety Injection (HPSI) pumps during a Loss of Coolant Accident (LOCA).

Safety Analysis:
The procedure change applied to a procedure for dealing with an accident previously evaluated in the USAR. Since the accident has already occurred, the change cannot increase the probability of an occurrence of that accident. Critical post-LOCA parameters such as peak fuel clad temperature and containment peak pressure are still within limits with this change. Fuel integrity and containment integrity were not impacted, so the consequences of a LOCA were not increased. A single failure of safety-related equipment with the change will not impact containment integrity or fuel integrity. Therefore, this change will not increase the consequences of a malfunction of safety-related equipment. The alignment of HPSI to charging will not cause a different type of accident in addition to the LOCA, as component ratings would not be exceeded. Therefore, a different type of accident not previously analyzed in the USAR could not occur. Also, the possibility of a different type of equipment malfunction was not created by this change. HPSI and Chemical and Volume Control System will still be capable of performing their respective safety functions without a reduction in the margin of safety for fuel clad temperature or containment pressure.

EOP-20 & TBD — Functional Recovery Procedure
EOP-03 & TBD — Loss of Coolant Accident

Description:
The purpose of this procedure change was to protect the charging pumps from air binding by switching suction from the Boric Acid Storage Tank (BAST) to the Safety Injection Refueling Water Tank (SIRWT), and to ensure that containment isolation requirements are met during a LOCA.

Safety Analysis:
EOP changes apply only after an accident has already occurred. Operator actions are not initiating events for USAR evaluated equipment malfunctions or accidents. The EOP change ensures that penetration M-3 is operable and capable of preventing containment leakage once the charging pumps are stopped. Therefore, the consequences of an accident (LOCA) are not increased. As concluded, the containment integrity is maintained and penetration M-3 is operable. With containment integrity maintained, the margin of safety as defined in the basis of Technical Specification 2.6 is not reduced by the EOP change.

OI-CC-1 — Component Cooling System Normal Operation

Description:
This procedure was changed to eliminate the option of having only one heat exchanger in service. This ensured that a minimum of 2 heat exchangers have component cooling water (CCW) flow at all times during normal operation.

Safety Analysis:
The change to the operating instructions eliminates the less restrictive alternative in the operating mode, thereby increasing the conservatism of operation. The general operating philosophy was not changed. The required temperature range for the system was not changed. The consequences of an equipment malfunction did not change since the procedure change did not affect or change the number of components required to function during an accident. The fail safe mode of the CCW inlet/outlet valves to the heat exhangers is open. This ensures that at least 2 heat exchangers (4 valves), (3 heat exchangers when river water temperature meets or exceeds 70°F) are in their fail safe position during normal operation.

OI-RM-1 — Radiation Monitoring - Normal and Accident Operation

Description:
The purpose of this procedure change is to correct instructions and diagrams for loading filter paper for RM-050/051 and RM-061/062.

Safety Analysis:
Correct installation of filter paper in the process monitors will result in a reduction of accident consequences by raising the sensitivity of the monitor. The probability of an accident is unaffected. Correct installation of the filter paper will enhance the operation of equipment important to safety. It will also have no effect on the probability of equipment malfunction. Enhanced monitor sensitivity reduces the consequences of an accident by providing an earlier warning of the accident condition, and increases the margin of safety.

OI-WDG-1 Waste Gas Disposal System Normal Operation

Description:
The purpose of this procedure change was to upgrade for the Procedurd Upgrade Project, Project 1991, and to comply with the FCS Writers Guide and to enhance human performance.

Safety Analysis:
Although the Waste Gas Compressors (WGC) and Waste Gas Decay Tank (WGDT) are operated in the manual mode the pressure control valve will still automatically shut at 100 psig. Therefore, the probability of a WGDT rupture accident is not affected by operating the WGCs and WGDTs in manual. There is no effect on the consequences of a WGDT rupture accident, because operation of the WGCs and WGDTs in manual has no effect on the concentration of combustible or radioactive gases or maximum operating pressure in the WGDT. The revision does not affect any safety related equipment previously evaluated in the USAR. The revision limits the compressor's cycling on and off which reduces the possibility of a compressor failure. The Technical Specifications do not discuss required normal operation equipment lineup for the WGCs and WGDTs, and there are no margins of safety affected by operation of this equipment in manual.

SS-ST-CONT-0001 Surveillance of Containment Prestressing System

Description:
The purpose of this procedure change was to incorporate changes to Technical Specification 3.5(7) per Amendment 139.

Safety Analysis:
According to USAR 5.3.3 the containment is designed with enough margin to compensate the loss of 5 to 10 wall tendons and 2 to 3 dome tendons. Only one tendon was rendered inoperable at a time, therefore, containment integrity was maintained. Containment prestressing tendons do not interface with any other system. Since containment integrity was maintained, the consequences of a LOCA or Main Steamline Break were not increased. The probability of malfunction of equipment important to safety was also not increased. The testing of the prestressing tendons is considered in the USAR. This change did not change the methods used to test the tendons, only the number of tendons to be lift off tested and the number to be detensioned for

inspection. Therefore, this activity did not create an additional possibility of an accident of a different type. For the same reasons, this activity did not create a different type of malfunction of equipment important to safety than previously evaluated in the USAR. Testing the tendons per these changes increased the reliability of data obtained thus getting a better assessment of the remaining safety margin. The limits as defined in USAR Fig. 5.10-3, as referenced in Technical Specification 3.5(7) were not changed.

TDB-V.9 Shutdown Margin Worksheet

Description:
The purpose of this procedure change was to make format changes and to make the worksheets consistent with other TDB figures. It also increased the minimum required boron concentration from 1800 ppm to 1900 ppm and corrected misspellings.

Safety Analysis:
Increasing the boron concentration to 1900 ppm does not change the probability of occurrence of an accident as no new modes of operation occur. No new event initiators are created. 1900 ppm is conservative with respect to the current Technical Specification value of 1800 ppm. The use of the new boron concentration is conservative in the dilution event since it increases the time to critical resultant. No changes in equipment operation are required, thus, no increase in the probability of occurrence of a malfunction of equipment important to safety was realized as no new event initiators were created. In a boron dilution event, it is the operator of the equipment which is the initiating event, not the boron causing a piece of equipment (or system) to respond in a manner that has not been previously evaluated in the USAR. The boron dilution incident is analyzed in USAR Section 14.3 No other accidents are impacted by the refueling boron concentration. No different types of accidents are created and no new or different modes of operation are created. The margin of safety is maintained.

TDB-EOP 20 & EOP-20 Functional Recovery Procedure
AOP-22 Reactor Coolant Leak

Description:
The purpose of these procedure changes were to incorporate steps ensuring the charging header is kept pressurized by the HPSI pumps during a LOCA.

Safety Analysis:
The procedure change applies to a procedure for dealing with an accident previously evaluated in the USAR. If the accident has already occurred, the procedure change cannot increase the probability of an occurrence of that accident. Fuel integrity and containment integrity are not impacted, so the consequences of a LOCA are not increased. Affected

safety-related equipment (HPSI, Charging) will not be more likely to fail or malfunction. This change will not increase the consequences of a malfunction of safety-related equipment. When the changed steps are performed, a previously analyzed accident (LOCA) has already occurred. The alignment of HPSI to charging will not cause a different type of accident than any previously analyzed in the USAR. The alignment will also not cause the ratings of any component to be exceeded, as the lineup is much like that already used in the EOPs for Hot Leg Injection. Therefore, the possibility of a different type of equipment malfunction is not created by this change. HPSI and CVCS systems will still be capable of performing their respective safety functions without a reduction in the margin of safety for fuel clad temperature or containment pressure.

TDB-III.26.A Technical Data Procedure - DC Output Power vs. Ambient Temperature

Description:
The purpose of this procedure change was to revise the operability temperature limits of the diesel generators following the installation of exciter cabinet air conditioners and enhanced maintenance on the jacket water radiator.

Safety Analysis:
There is no affect on diesel generator safety function. The figures quantify the engine output as a function of outside air temperature. Engineering Analysis (EA) EA-90-062 R2 "Diesel Generator Upper Ambient Air Temperature Limit" demonstrates that the diesel generator output under the restrictions of the 2000 hour rating curve is greater than the demand due from the highest expected Post LOCA loads. The predictions on jacket water system performance and turbo air inlet temperatures contained in EA-90-062 R2 were supported by test data taken 06/26/91 with an outside ambient air temperature of 95°F for Diesel Generator DG-1. These parameters define the rating of the diesels.

Engineering Change Notices (ECN)

ECN 90-43 RE-055

Description:
The purpose of this ECN was to evaluate Temporary Modification TM-88-E-021 in order to implement it as a permanent change under the ECN process. TM-88-E-021 disconnected cable 8622 at RM-055. 8622 is the signal cable for RM-055 which has already been taken out of service. Although RM-055 has not been physically removed, RM-055A has been installed to replace the function.

Safety Analysis:
The equipment involved is not CQE. Monitoring of releases is still adequately performed by RM-055A and/or by grab sampler during releases. Since alternate methods of monitoring exist, the probability of releases in excess of the limits is not increased. Also, the consequences do not change. Radioactive effluent releases are accounted for in the USAR. No new type of accident has been identified that would result from this temporary modification. The Technical Specifications allow for several ways of monitoring releases. The margin of safety is not compromised.

ECN 90-088 Technical Support Center Radiation Monitor, RM-093

Description:
The radiation monitor currently in use, Victoreen Model No. 808D, is being deleted from the radiation protection inventory. The Dosimeter Model No. DCA-3090 has been chosen to replace the existing Victoreen Model.

Safety Analysis:
The new Dosimeter radiation monitor meets or exceeds the design, material, and construction standards of the existing Victoreen monitor. The Technical Support Area Radiation Monitor does not alter the radiological consequences of any of the accidents described in the USAR. It only measures area radiation and alarms at unacceptable levels. The Area Radiation Monitor does not interact with or have an impact on any other equipment. Replacing the existing Victoreen radiation monitor with a comparable Dosimeter model will not increase the radiological consequences of a malfunction of any safety-related equipment. The Area Radiation Monitor is non-CQE. There are no new possibilities of an accident created by changing the model of radiation monitor used in the Technical Support Center. There is no safety-related equipment associated with radiation monitor, RM-093. There are no applicable sections of the Technical Specifications associated with this change.

ECN-90-178 Tie-In to Existing Chemical Injection Point

Description:
The intent of this ECN was to install a new injection point for Direct Chemical Feed Injection. Concentrated Hydrazine will be pumped into this injection point at the Steam Packing Exhauster location. The new point is required at this time since the condensate system is depressurized. The work prescribed was to install a reducing sockolet, pipe stub, and an isolation valve with a cap. Installation of this configuration would allow for an on-line installation of a new chemical feed system. The materials to be used are in accordance with the design application of concentrated hydrazine feed.

Safety Analysis:
The USAR does not explicitly state that a breach in condensate is applicable. However, the USAR does state that if condenser shutdown is required, that the Auxiliary Feedwater System be available to remove decay heat. Thus, a breach in the Condensate System has been addressed as not being a safety issue. Failure of a weld or valve is bound within Condensate System reliability. The means of the availability of the Auxiliary Feedwater system was not impacted by the change. The tie-in is adjacent to the existing feed point. No existing safety systems are affected by adding the tie-in point. The tie-in point has no interface with equipment required for safety as stated in USAR Section 10.2. Therefore, the change does not increase probability of component failure. No equipment, which is safety related, is located near the tie-in point. Therefore, the consequences of a failure of the valve or tie-in piping have not been altered. Breach of the condensate piping is not a new accident type not previously evaluated in the USAR. The Technical Specifications do not take credit for the Condensate System in a margin of safety system.

ECN 90-189 Removal of Tubing from CW System

Description:
The purpose of this ECN was to remove the unused copper tubing from the downstream side of valve CW-120. This valve is located in the basement level of the intake structure on the inlet side of the screen wash strainer.

Safety Analysis:
The tubing is located in a non-CQE system in a non-CQE area. The CW system is not required for any accident recovery. The tubing to be removed is unused, has no purpose, will not impact any possible malfunction, and is not the basis for any Technical Specification.

ECN-90-266 Change to GE Drawing 145057I9 and 791E611

Description:

The bore on the upper guide bearing on the reactor coolant pump motors was opened by 5 mils via machining the soft babbit face on the bearing. The bearing's surface finish and length remained at the manufacturer's original dimensions. The manufacturer has been consulted on the tolerance change and agreed.

Safety Analysis:

Historical performance data for this motor and the three other reactor coolant pump motors indicates that repeated starts and operation with bearings worn to tolerances exceeding those used in this case had no identifiable deleterious effects on the reactor coolant pump motor reliability or operation. Rotor seisure is less likely with increased tolerance. Consequences of an accident would be the same as those given in USAR Section 14.6-2, "Seized Rotor Event." GE gave assurance that this machining is allowable. Historical performance of worn bearings with greater tolerances have shown acceptable bearing vibration and temperature parameters, even with repeated cycling. Motor reliability, function, and performance as a driver does not change, therefore its safety function does not change. Flywheel inertia does not change and coastdown may increase due to less friction from guide bearing which would increase the margin of safety.

Special Procedures

MWO 910625 — Replacement of the High Vibration Trip Time Delay Relay K3001 While the Plant is On-Line

Description:
The purpose of this change was to provide instructions for replacing the high vibration trip time delay relay K3001 in panel AI-55 while the plant is on-line.

Safety Analysis:
During the implementation of the procedure, the affected turbine trip circuits were disabled to prevent a sudden loss of load due to a turbine trip. The trip was disabled 4 ways; by placing the Turbine Supervisory Instrument (TSI) power switch to 'off', by placing the vibration trip switch to 'disable', lifting the trip circuit leads, and by removing the TSI power supply fuses. The potential severity of loss of load was not increased by the procedure change because the turbine power level was not affected by the procedure. None of the equipment affected by the procedure change was important to nuclear safety. The TSI system, including high vibration trips, is not safety related. All other turbine/generator trips functioned normally before, during, and after the implementation of this procedure. No credible new accident scenario could result from the procedure change. The ability of the turbine to trip as a result of a reactor scram or operator action would not be impaired. The main turbine/generator and TSI systems are not important to nuclear safety. No Technical Specification margins of safety are based on or involve the TSI system.

SP-BURNUP-1 — Burnup Determination for Storage of Spent Fuel

Description:
SP-BURNUP-1 was performed prior to refueling operations. This procedure verifies the acceptability of fuel storage in region 2 of the spent fuel pool in accordance with requirements in the Technical Specifications.

Safety Analysis:
This procedure uses a CECOR printout and compares the values with the limitations of Technical Specification Figure 2-10 and does not constitute an unreviewed safety question.

SP-CP-08-DEVAR-1A3, 1A4, T1A1, T1A2, T1A3, T1A4 — Calibration of the DEVAR Relay and Associated Timers

Description:
The purpose of this procedure change was to change the subject relay trip setpoints to reflect Design Engineering Calculation EA-FC-91-017.

Safety Analysis:
The resetting of the relay has the conservative effect of providing the safeguards loads with reliable power earlier in any accident. This ensures that all 480V loads continue to have sufficient voltage to prevent damage to the motor.

The safeguards loads will continue to perform all accident functions as described in the USAR analysis for each of those accidents. With all equipment functioning according to design, no increase in consequences will occur. This procedure change speeded-up the response time of the electrical system to a degraded system voltage. The Offsite Power Low Signal (OPLS) setpoints are detailed in the Technical Specifications. The setpoints installed in the relay moved conservatively from the described setpoints. This ensures proper voltage is maintained at the safeguards motors which is the basis for the OPLS setpoints. Thus, the margin of safety is increased.

SP-DEN-FP-0001 Fire Door Inspection
SP-DEN-FP-0002 Fire Damper Inspection
SP-DEN-FP-0003 Fire Barrier Penetration Seals Inspection

Description:
These procedures are new procedures to document fire barrier walkdown.

Safety Analysis:
These completed procedures do not constitute an Unreviewed Safety Question because they only provided for the inspection of fire barriers and no fire barriers were physically degraded due to these inspections.

SP-FAUD-1 Fuel Assembly Uplift Condition Detection

Description:
The purpose of this procedure is to prevent fuel assembly wear and fretting by detection of a fuel assembly uplift condition.

Safety Analysis:
The Monthly RCS Flowrate Test is a Technical Specification requirement, however, the Fuel Uplift Test is not. Performance of this test is simply a manual calculation using data obtained from the RCS Flowrate Determination. It does not constitute an unreviewed safety question.

SP-ISI-SURFPREP-1 Surface Preparation without any Detectable Change in Material Thickness for Class 1, 2, and 3 Components and Welds

Description:
The RCS pressurizer was inspected at certain weld locations. To perform that inspection, the insulation was removed and the surfaces of the welds were cleaned. SP-ISI-SURFPREP-1 was used to control this process.

Safety Analysis:
No unreviewed safety question was involved in this process; it was only an activity to clean up a weld area. The procedure followed the guidance of ASME Code for surface preparation.

SP-RP-1

Cold Shutdown Initial Radiological Survey Procedure

Description:
The purpose of this procedure is to provide a general procedure for performing the initial radiological surveys of containment and the balance of the plant after cold shutdown.

Safety Analysis:
The procedure is guidance for completion of the initial radiological survey of the plant after reactor shutdown. Special Procedure SP-RP-1 does not constitute an unreviewed safety question.

SP-SITFILL-1

Injection of Boric Acid into Safety Injection Tanks SI-6A, SI-6B, SI-6C and SI-6D

Description:
The purpose of this procedure is to provide written instructions for the injection of concentrated boric acid into the safety injection tanks in order to increase the concentration of boric acid for nitrogen sparging to ensure proper boric acid mixing.

Safety Analysis:
The performance of this procedure did not represent an unreviewed safety question because no safety-related equipment was removed from service and the tanks were maintained operable in accordance with Technical Specification 2.3(1)c.

SP-VA-TRACER

Tracer Gas Characterization Study of Spent Fuel Pool Area Ventilation - VA-66 Carbon Filter

Description:
The purpose of this procedure change was to incorporate electrical load considerations for the 480 volt systems necessary to complete tracer gas testing of VA-66.

Safety Analysis:
Operation of the additional 480 volt loads does not increase the probability of occurrence of any accident. Since the motors can continue to operate and perform their design function there is no increase in the consequences of any accident. No new accidents have been introduced. No additional component failures have been created. All equipment and systems will function as designed.

Temporary Modifications

TM 91-012 Removal from Service of the Welding Receptacle in Room 81

Description:
This temporary modification isolated the welding receptacle in Room 81 from the remaining welding receptacles powered from 480 Volt Breaker MCC-4A1-E06. The receptacle in Room 81 was isolated by disconnecting the cable (384H) at JB-448A which goes to the welding receptacle.

Safety Analysis:
Removing a potential load from MCC-4A1 would reduce the probability of an accident by reducing the probability that a non-EEQ load (Welding Receptacle in Room 81) would result in failure of CQE equipment. Removing the welding receptacle could reduce the consequences of accidents by ensuring the breaker to MCC-4A1 does not trip due to fault on the welding receptacle. No technical specifications are associated with the welding receptacle. No safety margin of the Technical Specifications is affected.

TM 91-024 Jumpering of Cells 15 and 16 in Battery No. 1

Description:
Cell 15 in Battery No. 1 (EE-8A) had developed a crack which initially allowed a significant amount of electrolyte to leak from the cell. The cell was temporarily repaired, but needed to be replaced. Had the temporary repair failed or the replacement process required that the battery been removed from service for greater than 8 hours, it would have been desirable to jumper out cells 15 and 16 and therefore minimize the amount of time the battery was out of service. Both of the cells required jumpering because cell 15 and 16 are contained within a single jar which cannot be separated. In performing the evaluation for jumpering out cells 15 and 16, it had been determined that:

1. Battery 1 had sufficient capacity to allow the removal of these two cells. This had been evaluated in memo PED-SYE-90-984J using the results of previous discharge tests.

2. The overall battery terminal FLOAT voltage remained at 130VDC and the EQUALIZE voltage at 135VDC. This was the recommendation of DEN-Electrical. The individual cell voltages would rise but not beyond manufacturer's established voltage limits.

3. The jumpers had sufficient capacity to conduct and carry the maximum load.

Safety Analysis:
The station batteries are designed to respond to postulated accidents. The battery was able to perform its required function in the altered configuration. All previous assumptions based upon battery capacity were still valid. The changed battery configuration did not provide another

means of creating any Section 14 accidents. Accident mitigation was not affected. No new failure modes were introduced. Battery current conductors installed were appropriately sized and utilized the same method of mechanical connection or better than the existing configuration. Even though the battery's capacity was reduced, it was not below design basis levels. The battery was still able to perform its required safety functions. The only credible failure associated with this temporary modification was the loss of either the battery or the DC bus. The loss of a DC bus, due to a battery failure or a different equipment malfunction, had been previously addressed. The Technical Specification basis states that the system is designed such that no single failure could cause enough engineered safeguards to become inoperable to prevent safe shutdown of the plant. This temporary modification does not introduce any failure mode which exceeds the single failure criteria of the original design.

TM 91-037 Temporary Battery to Support Battery Replacement

Description:
Battery No. 1 (EE-8A) was reloacted to the Turbine Deck to serve as a backup DC power source for DC Bus 1 (EE-8F) and DC Bus 2 (EE-8G) during replacement of Battery No. 1 and 2. The battery was connected to Disconnect Switches EE-8M and EE-8N which were to be open.

Safety Analysis:
The temporary battery was installed only while RCS temperature was less than 300°F. A permanent battery was always in service as a first-line of defense. The temporary battery was only to be used in the event of an emergency and would not have performed safety functions. The temporary battery was normally isolated from the 125VDC distribution system. No new malfunctions other than those previously/analyzed were introduced since the temporary battery was a station battery. Since this is a backup power source for the 125VDC system, its use was a last resort in the event of failure of the preferred safety related source. No new accidents were created by adding the temporary battery. The temporary battery was isolated by two disconnect switches from the DC distribution system.

TM 91-048 Leads to 63x-1/PIC-103 AC/DC-2 Aux. Relay Back-Up Heaters Control Circuit, CB-1/2/3, 736

Description:
TM 91-048 lifted leads to burned out HFA relay coil so that the other non-safety related instrumentation powered from the same circuit could be restored for the 36 hours that it took to replace the burned out relay. The relay provided automatic operation of pressurizer heater banks 3 and 4. Manual operation is unaffected.

Safety Analysis:
The loss of the automatic backup capability of the

Pressurizer Heater Banks 3 and 4 makes no difference in the probability of any accident previously evaluated. The subject HFA relay is non-safety related and it is wired out of the circuit by lifting the leads. This circuit does not affect the margin of safety required or defined in the basis of the Technical Specifications.