WOLF CREEK
NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

March 9, 1990

WM 90-0060

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Docket No. 50-482: Wolf Creek Generating Station Annual Safety Evaluation Report

Gentlemen:

Attached is the Annual Safety Evaluation Report for Wolf Creek Generating Station which is being submitted pursuant to 10 CFR 50.59(b)(2). This report covers the period of January 1, 1989, to December 31, 1989.

Very truly yours,

Bart D. Withers
President and
Chief Executive Officer

BDW/aem

Attachment

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WOLF CREEK NUCLEAR OPERATING CORPORATION

Wolf Creek Generating Station

Docket No: 50-482
Facility Operating License No: NPF-42

ANNUAL SAFETY EVALUATION REPORT

Report No: 5

Reporting Period: January 1, 1989 through December 31, 1989

Prepared by: Merlin G. Williams

Approved by: _____
G. D. Boyer
Plant Manager

EXECUTIVE SUMMARY

The purpose of this report is to provide a brief description of changes, tests and experiments performed at Wolf Creek Generating Station pursuant to 10CFR50.59(a)(1). This report includes summaries of the associated safety evaluations that were reviewed and found to be acceptable by the Plant Safety Review Committee for the period beginning on January 1, 1989, and ending on December 31, 1989. This report is submitted in accordance with the requirements of 10CFR50.59(b)(2).

Three major categories of safety evaluations are included in this report. Section I contains the Plant Modification Requests which are the primary vehicle used for permanent plant modifications and design drawing revisions. Section II contains the Safety Evaluations which are used primarily for temporary plant modifications, procedure revisions and temporary procedures. Section III contains the summaries of the remaining safety evaluations performed at Wolf Creek Generating Station utilizing various programs including Corrective Work Request Dispositions and Updated Safety Analysis Report (USAR) Change Requests. Section IV contains the summaries of safety evaluations that were reviewed and found acceptable by the Plant Safety Review Committee during 1988 but were inadvertently omitted from the 1988 Annual Safety Evaluation Report.

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SECTION 1

PLANT MODIFICATION REQUEST: 00354 Revision: 4

Title: New Service Drive To Reactor Building Equipment Hatch

Description: This modification revision allowed for the installation of a second concrete crane pad east of the Reactor Building.

Safety Evaluation: The installation of a second crane pad is a passive type of modification which will not interact with safety related systems or components. Therefore, the probability of an accident previously evaluated in the USAR will not be increased and the consequences of an accident previously evaluated in the USAR will not be increased.

Engineering has evaluated, through calculations, the effects of surcharge loads on Category I foundation and underground utilities and concluded that as long as the crane is operated within design limits, the original design envelopes the effect due to installation of a second crane pad. Therefore, the possibility that an accident of a different type from any evaluated previously in the USAR is not created.

Engineering calculations have confirmed that surcharge load coming from a second crane pad are enveloped by original design and this surcharge load does not affect the safety of underground utilities. Therefore, the probability of occurrence of malfunctions of equipment important to safety previously evaluated in the USAR will not be increased.

Engineering has evaluated the effects of this extra surcharge loads from a second crane pad on Category I foundations, bedrock and underground utilities and concluded that the original design envelopes these conditions. Therefore, the consequences of malfunction of equipment important to safety previously evaluated in the USAR will not be increased.

The possibility of malfunction of equipment important to safety will not be created because the installation of this modification is a passive type of plant modification.

Since the design change is passive in nature, margin of safety as defined in the basis of Technical Specification will not be reduced.

PLANT MODIFICATION REQUEST: 00947 Revision: 0

Title: Access Control Door For Boron Thermal Regeneration System Valve Room

Description: This modification provides for a lockable door to the Boron Thermal Regeneration System valve room, Room 1105 in the Auxiliary Building. Although this room has not yet reached radiation levels which would require a locked door by the Wolf Creek Generating Station (WCGS) Technical Specifications, Room 1105 has the potential to become exceedingly radioactive. The only proposed USAR changes are to show the addition of this door on Figures 1.2-9, 9.5.1-2, 12.3-2 and 18.2-2.

Safety Evaluation: Section 6.12.2 of the WCGS Technical Specifications states in part, "...areas accessible to personnel with radiation levels greater than 1000 millirems per hour at 45 centimeters (18 inches) from the radiation source or from any surface which the radiation penetrates shall be provided with locked doors to prevent unauthorized entry ...." As a result of this modification, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any WCGS Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: 01189 Revision: 0 and 1

Title: Diesel Generators Starting Air Compressors Condensate Drainage

Description: The subject modification provides for independent condensate drains for the Diesel Generator starting air compressors (CKJ01A, B, C and D) automatic condensate dump valves to preclude water back-up to the compressors from the common drain header to which these drains are presently connected. This modification is in the non-safety related portion of the Diesel Generator starting air system since the starting air compressors (reference USAR 9.5.6.2.2) and associated drains are non-safety related. The modification revision was issued to upgrade the safety classification of the modification from non-safety related to safety related. This safety classification upgrade is due an installation requirement which calls for driving concrete expansion anchor bolts in the safety related base slab of the Diesel Generator Building.

Safety Evaluation: This modification provides for more reliable drainage of the starting air compressors. This modification does not affect the ability of the Diesel Generator starting air system to perform its design and safety functions nor does it impact any other safety related system. The modification does not impact any Wolf Creek Generating Station Technical Specification or associated bases. The only revision to the USAR is to Figure 9.5.6-1 to reflect the revised drain lines for the starting air compressors.

The drain tubing support anchors must be installed in the floor slab of a Category I structure. The drain line supports thus require this modification to be classified as safety related. The loads induced due to the unistrut supports are very small in magnitude compared with the designed capacity of the floor slab. The floor slab is designed as a Seismic Category 1 structure. Rebar cutting (if necessary) for anchor bolts and documentation of such will be per the appropriate specification. Therefore, no safety concern is created by the installation of these anchor bolts.

PLANT MODIFICATION REQUEST: 01377 Revision: 4

Title: Service Water Pump Impeller Replacement

Description: This modification replaces the Service Water System pump impeller with a larger diameter impeller to increase the net flow capacity of the Service Water System. This revision to the modification package adds USAR Figure 9.2-1, Sheet 3, as an affected document.

Safety Evaluation: Increasing the Service Water System pump impeller diameter increases the net flow capacity of the Service Water System thus reducing the probability of failure of safety related components due to microbiologically induced corrosion. Increasing the capacity of the Service Water System pumps will provide additional flow to standby components to control the growth of microbiologically induced corrosion and shorten startup time for standby components (from time delay in establishing flow to standby components) thus reducing the probability of occurrence of malfunctions of equipment important to safety previously evaluated in the USAR. The consequences of a malfunction of equipment important to safety previously evaluated in the USAR are not increased by the additional flow capacity of the Service Water System. The new impellers should increase the reliability of the Service Water System by meeting the flow requirements of the station with two Service Water System pumps where three were required before.

The scope of this modification will in no way adversely affect the safe shut-down of Wolf Creek Generating Station (WCGS). The Service Water System serves no safety design basis. Therefore, there is no possibility that an accident of a different type from any evaluated previously in the USAR will be created. The new impeller provides more flexibility to the operator for the day to day operation of the plant; failure of the Service Water System will not increase the consequences of an accident previously evaluated in the USAR. The subject modification will not create a malfunction of equipment important to safety of a different type than any evaluated previously in the USAR. The subject modification will not result in a reduction in the margin of safety as defined in the basis for any WCGS Technical Specification.

PLANT MODIFICATION REQUEST: 01391 Revision: 0

Title: Sample Hood Drain Header Modification

Description: The scope of the modification is to replace the existing galvanized drain line to Clean Radwaste (CRW) in the Auxiliary Building sample station SJ 143 with stainless steel piping. The existing union-ended bronze swing check valve will be replaced by a flanged stainless steel wafer check valve. The subject modification will minimize corrosion and the formation of radioactive hot spots.

Safety Evaluation: The portion of the Nuclear Sampling System in which the subject modification is being made serves no safety function and has no safety design bases. The only affect is to USAR Figure 9.3.2 which will be revised to reflect the new piping arrangement. Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the basis for any Wolf Creek Generating Station (WCGS) Technical Specification is not reduced. There is no impact on any WCGS Technical Specification or associated bases.

PLANT MODIFICATION REQUEST: 01582 Revision: 0

Title: Fuel Building Filtration Fan Modification

Description: This modification installs 10-inch by 12-inch access doors in the scroll housings of Fuel Building emergency exhaust fans CGG02A and CGG02B. The access door installation is necessary in order to provide access to fan internals for balance weight maintenance and corrections and for the performance of visual inspections.

Safety Evaluation: The design form, fit, function and performance of the emergency exhaust fans are not affected by this design change, nor is the seismic or environmental qualification of the fans and associated components and interfacing ductwork impacted. The new access doors are to be designed and installed to the same specifications as those access doors which had been originally installed on all miscellaneous safety related ductwork and fans. Furthermore, the new doors are to be supplied by the original fan manufacturer due to the safety related nature of the emergency exhaust fans.

The retrofit which installs such fan housing access doors will not increase the probability of occurrence or consequences of an accident previously evaluated in the USAR. Nor is there a possibility of creating an accident or malfunction of equipment important to safety of different types than those previously evaluated in the USAR. Further, the probabilities of occurrence or consequences thereof of malfunctions of equipment important to safety previously evaluated in the USAR are not increased by this modification. Ultimately, the design change will not result in a reduction in the margin of safety as defined in the bases for the pertinent Technical Specifications.

PLANT MODIFICATION REQUEST: 01655 Revision: 0

Title: Steam Generator Drain Pump Pressure Indication

Description: The subject modification adds pressure gauges to Steam Generator drain pumps, PHM03A and PHM03B. One gauge is to be located at the suction of each pump and one at the combined discharge of both pumps. The new gauges are added to provide local pump pressure indication to allow the operator to monitor performance during pump operation. The non-safety related Steam Generator drain pumps are utilized only during shutdown when the Steam Generator is depressurized.

Safety Evaluation: The addition of the subject pressure indicators will have no affect on the ability of the Steam Generator Blowdown System from fulfilling its design bases as described in USAR Section 10.4.8.1. The modification has no impact on any Wolf Creek Generating Station Technical Specification or associated bases.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any Wolf Creek Generating Station Specification is not reduced.

PLANT MODIFICATION REQUEST: 01665 Revision: 0

Title: Permanent Access To Emergency Diesel Generators

Description: This modification provides for the installation of two small platforms in the Diesel Generator Building to allow access to the maintenance platform on the east side of the Emergency Diesel Generators. The addition of these platforms provide a permanent seismically designed structure that will eliminate the need for personnel to utilize the conduit and piping as steps in order to access the existing walkways.

Safety Evaluation: The added platforms have been seismically designed II/I, thereby ensuring the integrity of any safety related equipment in the vicinity of the platforms. The addition of the platforms will not have an impact on any flooding or fire evaluations, but will improve accessibility to the Emergency Diesel Generators.

PLANT MODIFICATION REQUEST: 01719 Revision: 0

Title: Drain Valves On Service Water System Strainers

Description: This modification allowed for the installation of three-inch gate valves for permanent use as drain valves on the Service Water System strainers 1WS01FA and 1WS01FB in place of the temporarily installed drain valves.

Safety Evaluation: The design change provides a drain assembly with a valve in place of a drain cap originally provided by the vendor on 1WS01FA and 1WS01FB. The original drain cap was temporarily replaced by a drain connection with a valve to obtain a source of Service Water for cleaning the floor in the Circulating Water Screen House.

The components that were modified serve no safety related function or impact other systems or components necessary for safe shutdown of the plant. Therefore, the possibility or consequence of a previously evaluated accident is not increased, the possibility of a new or different type of accident is not created and the probability or undesirable consequences of malfunctions of any equipment will not result.

PLANT MODIFICATION REQUEST: 01772 Revision: 1

Title: Replacement Of Steam Generator Blowdown Flash Tank Drain Valve

Description: This modification replaces the existing seal-welded packless Steam Generator Blowdown flash tank drain valve BM V-058 with a 600 pounds pressure rated, bolted bonnett, back-seated one inch globe valve to improve maintainability. This valve suffers frequent seat damage due to debris from the blowdown flash tank settling in the drain line. Valve rework has been frequent and difficult due to seal-welded globe valve design. Revision 1 to this modification corrected a word omission in the safety evaluation.

Safety Evaluation: This modification is expected to reduce the probability of occurrence of valve failure. An accident of a different type from any already evaluated is not created. The consequences of an accident caused by failure of the valve are not changed. The probability of occurrence of malfunctions of equipment important to safety because of the failure of this valve are reduced by this modification. This valve improvement will not contribute to the consequence of a malfunction of equipment important to safety. This modification improves the design of a non-safety related valve; therefore, the creation of a different type of malfunction of equipment important to safety is not anticipated. The design change does not affect the margin of safety as defined in the Technical Specifications.

PLANT MODIFICATION REQUEST: 01791 Revision: 1

Title: Incorporation Of Vendor Drawings

Description: This modification revision expands the changes in plant drawings to include remote 7300 process protection racks 2A and 4A power supply changes. Westinghouse discovered that lightly loaded 7300 series process racks (load less than 18 amps) had their power supplies drive the DC output beyond the design specification for the powered equipment when the power supply input voltage varied excessively. This modification lowers the normal supply voltage from 26 volts to 24 volts DC and achieved the required DC voltage stability to maintain reliable process control. This revision also includes incorporation of Reactor Vessel Level Indication System (RVLIS) technical manual changes.

Safety Evaluation: The incorporation of the drawing and technical manual changes does not increase the accident and safety related equipment malfunction probabilities or consequences previously evaluated in the USAR, does not create accident and safety related equipment malfunction possibilities of a different type than those evaluated in the USAR, and does not affect Technical Specification safety margins.

PLANT MODIFICATION REQUEST: 01829 Revision: 0

Title: Ammonia Hydroxide Storage

Description: This modification provides for the storage of ammonium hydroxide in the Turbine Building. A permanent, air conditioned, storage room is provided to store unopened leak-tight ammonium hydroxide drums. The purpose of the storage room inside the Turbine Building is to provide an environment cool enough for the ammonium hydroxide so that off-gassing does not occur. Off-gassing is required to be minimized to eliminate a potential personnel hazard. The proposed changes to the USAR are included to reflect the addition of a room air conditioning unit to the subject Ammonium Hydroxide Storage Room.

Safety Evaluation: There are no changes to any safety design bases for any system. The addition of the room air conditioning unit does create a new power generation design bases, however the Turbine Building Heating, Ventilation and Air Conditioning (HVAC) System as described in USAR Section 9.4.4 is non-safety related in its entirety. In addition the new structure will be non-Category I and will be located in a non-Category I building. The subject modification will not affect the operation or function of the Turbine Building HVAC System, the condensate and feedwater chemical addition system or any other interfacing systems. The consequences of or probability of an accident occurring that would adversely effect Control Room habitability have not been increased. No new accident shall be created.

PLANT MODIFICATION REQUEST: 01844 Revision: 3

Title: Valcor Valve Spring Replacement

Description: This modification changes the spring material of the Valcor solenoid valves to a type not susceptible to hydrogen embrittlement. The operability of the valves will be unchanged by this modification; however, the reliability of the valves will be improved. Due to the high failure rate on the initial nine valves inspected (seven out of nine), the modification revision delineates a mandatory design requirement to replace all the type 17-7PH springs in the 36 Valcor valves identified in high temperature applications.

Safety Evaluation: The probability of accidents will actually be reduced because the valves will be more reliable as a result of this modification. Changing the valve spring material will have no effect on the consequences of accidents. Changing the spring material does not make the valve susceptible to other types of failure. There is no possibility that the modification can create an accident of a different type. Since valve reliability is improved by the change of the spring material, the probability of equipment malfunction will be decreased. Changing the valve spring material will have no effect on the consequences of malfunctions of equipment. There is no possibility that equipment malfunction of a different type can be created by this modification. The modification has no effect on the Technical Specification margin of safety.

PLANT MODIFICATION REQUEST: 01889 Revision: 0

Title: Floor Drains

Description: This modification allows for use-as-is of 1/4-inch wire mesh installed in the floor drains. The modification also requires replacement of any wire mesh finer than 1/4-inch installed in Radiological Controlled Area (RCA) floor drains so that they conform to ASTM E-437-85. The modification requires all floor drains to be inspected and cleaned if more than 50 percent of the mesh open area is clogged. The inspection and cleaning shall be performed on a regular basis as part of a formal program to ensure floor drain strainer cleanliness.

Safety Evaluation: The probability of occurrence of an accident (for example, Loss of Coolant Accident in the Auxiliary Building) previously evaluated in the USAR is not increased. A calculation has been performed to assure that the addition of screens in the floor drains on the 1974 foot elevation of the Auxiliary Building will not increase the consequences of an accident previously evaluated in the USAR. There is not a possibility that an accident of a different type from any evaluated previously in the USAR may be created by the addition of these screens to the basement floor drains. The probability of occurrence of malfunctions of equipment important to safety previously evaluated in the USAR will not be increased. The probability of flooding the Auxiliary Building basement has not increased; thus the probability of safety related equipment malfunctions due to flooding has not increased. There is not a possibility that a malfunction of equipment important to safety may be created of a different type than any evaluated previously in the USAR. Since the probability of flooding the Auxiliary Building has not increased, the creation of a different type of malfunction to safety related equipment has not been generated. The consequences of a malfunction of equipment important to safety previously evaluated in the USAR will not be increased. A calculation has been performed to assure that the consequences of flooding has not been increased; thus the consequences of flooding safety related equipment has not increased. The design change does not result in reduction in the margin of safety as defined in the Technical Specification bases.

PLANT MODIFICATION REQUEST: 01938 Revision: 6

Title: Second Post-Tensioning System Inspection

Description: This modification was issued for administrative purposes only to provide administrative controls for the performance of the second Containment Post-Tensioning System inspection. This inspection is required by Technical Specification 4.6.1.6.1. This revision to the modification is to release Revision 5 of Specification 16577-C-158Q, "Containment Tendon Surveillance for the Wolf Creek Generating Station (WCGS)". Specification 16577-C-158Q has been revised to select a different set of tendons for the future performance of the surveillance program at WCGS. The change deletes high elevation tendons on the "C" buttress from the surveillance sample, for the fifth year and beyond, for tendon surveillance programs at WCGS. This revision also prevents drilling holes into the Containment Building, deletes two references and corrects some minor typographical errors in Specification 16577-C-158Q.

Safety Evaluation: Wolf Creek Nuclear Operating Corporation (WCNOC) is committed to proposed Revision 3 to Regulatory Guide 1.35, which states, "Regulatory position C.2.4 recommends the selection of tendons in a random but representative manner to include the tendons from typical areas, areas of structural discontinuances, and areas around hot penetrations." No exceptions are being taken to this position. Although the population of tendons will be reduced, the selection process will still be in a random but representative manner, including tendons from typical areas, areas of structural discontinuances and areas around hot penetrations. Since the requirements of Regulatory Guide 1.35 are being satisfied, the reduction of the tendon surveillance population has been determined to be acceptable. Possible degradation of the high elevation tendons will still be detected through surveillance of similar tendons on buttresses "A" and "B".

Probability of occurrence of an accident will not be increased with a revised set of tendons, as no exceptions are being taken to the current commitment to Regulatory Guide 1.35. The prevention of drilling holes into the Containment Building will reduce the probability of occurrence of an accident. The deletion of the two references, ANSI N45.2 and a draft of ASME Section XI, does not increase the probability of occurrence of an accident because ANSI N45.2 is referenced by WCNOC Quality Procurement Specification KQA-001 which is included in the Specification and the Draft ASME Section XI has not been officially issued and is not required to perform the affected specification test procedure.

Selection of a different set of tendons for the surveillance program, prevention of drilling holes and deletion of reference will not cause degradation of the Post-Tensioning System so it has no effect on any previously evaluated accident.

PLANT MODIFICATION REQUEST: 01947 Revision: 0

Title: Protected Area Boundary Perimeter Microwave Change

Description: This modification involved the change out of the microwave detection equipment from Shorrock to Racon. New cable is to be installed in the interior isolation zone around the Protected Area Boundary (PAB) between the microwave units and the multiplexers. Additional sidewalks will be added as a result of this modification.

Safety Evaluation: The change out of microwave detection equipment from Shorrock to Racon does not affect any safety related systems or components and the additional sidewalk will not affect the flood hazards analysis. New cable is to be routed in existing Security System duct banks. This installation does not affect any system which was previously evaluated in the USAR. This modification does not affect any safety related system or components. The installation of the aforementioned equipment must meet all applicable installation requirement for electrical and civil/structural codes. Therefore, since the system is not safety related and the installation must meet all applicable codes the probability of an accident of a different type from any previously evaluated in the USAR will not be created.

PLANT MODIFICATION REQUEST: 01970 Revision: 0

Title: Central Alarm Station And Control Room Humidity Control Modification

Description: This modification installs an automatic humidification system which will inject moisture into the outside air supply duct for the Control Room. This humidity will spread into the Central Alarm Station (CAS) due to the lack of vapor barrier between the two areas, thereby eliminating the low humidity condition that has been identified as a contributing factor in security computer problems. The humidifier is equipped with an overfill drain that will accommodate the full flow of a failed open fill valve which may result from the failure of the level control switch or the fill valve.

During normal operation of the humidification system, condensation of the steam on safety related equipment is prevented by: 1) distributing the steam in ducts that enter the Control Room in a location away from safety related equipment; 2) the use of high efficiency dispersion nozzles that are also designed to prevent carry over of any condensate in the steam dispersion tubes; 3) the use of insulation on the distribution piping to reduce condensation in the piping; and 4) the use of sloped piping with drains to collect any condensation that forms in the distribution piping on steam dispersion tubes.

Safety Evaluation: This Control Room humidification system addition is a non-safety related, non-Class 1E system which injects steam in the Control Building supply air to the Control Room in order to maintain room relative humidity (RH) above a minimum level of 30 percent and at a nominal level of 50 percent for satisfactory computer system operation. Equipment qualification for Control Room equipment is 70 percent RH maximum during normal or emergency operation per the USAR. References in Section 18.1.16 of the USAR indicate that relative humidity levels can reach as high as 60 percent without exceeding human factors engineering design limits.

The Control Room air conditioning system operates continuously to provide a suitable environment for equipment including limiting humidity to 70 percent RH maximum. Further, the Control Room air conditioning equipment has enough excess capacity to dehumidify moisture conditions generated by the humidifier and limit Control Room humidity to the human factors maximum level of 60 percent RH.

The humidification system including the humidifier, domestic water supply piping, distribution piping, and dispersion tubes, are located in an area which does not contain safety related equipment. Therefore, the humidification system does not require II/I supports.

The atmospheric steam distribution piping is classified as high energy per USAR, Section 3.6.2.2.a. However, based on the maximum steam generation rate and the purpose of the system (i.e., humidification of the Control Room and the CAS), a break anywhere in the distribution piping will not cause condensation problems because the distribution piping is located in the space that provides makeup air for the CAS and thus the steam would still be distributed and not condense on safety related equipment and structures.

PLANT MODIFICATION REQUEST: 01970 Revision: 0

Safety Evaluation: Continued

Installation of the above components or their failure or malfunction does not increase the occurrence and/or consequences of accidents previously evaluated in the USAR or create the possibility of an accident occurring which is different from that previously evaluated in the USAR. In addition, the installation of the above components or their failure or malfunction does not increase the probability of malfunction or the consequences thereof of any equipment important to safety similar to or different from any previously evaluated in the USAR.

The addition of the humidification system has no impact to safety, thus it does not result in a reduction in the margin of safety as defined in the bases for any Technical Specification.

PLANT MODIFICATION REQUEST: 02063 Revision: 2

Title: Valve Throttled Indication On Design Drawings

Description: This modification adds a note to the applicable drawings to indicate that the Essential Service Water (ESW) Train "A" return from Component Cooling Water (CCW) heat exchanger A valve, EF HV-59, the ESW Train "B" return from CCW heat exchanger B valve, EF HV-60, the ESW Trains "A" and "B" from Containment air coolers bypass valves, EF HV-47 and EF HV-48, the ESW Trains "A" and "B" from Containment air coolers valves, EF HV-49 and EF HV-50, and the ESW to CCW Trains "A" and "B" pump suction isolation valves, EG HV-11 and EG HV-12, are maintained in a throttled position to assure the components' required flow and to clarify the definition of fully open on the limit switch development diagrams.

Safety Evaluation: Revision of the Essential Service Water System drawings (reference USAR Figure 9.2-2) reflects the throttled use of valves EF HV-47, EF HV-48, EF HV-49, EF HV-50, EF HV-59 and EF HV-60. The function of valves EF HV-59 and EF HV-60 is to help maintain the required flow to the CCW heat exchangers during normal operation. EF HV-59 and EF HV-60, which are opened to a previously established throttled position, together with the CCW heat exchanger 1A ESW Train "A" return EF HV-59 bypass isolation valve, EF V-058, and the CCW heat exchanger 1B ESW Train "B" return EF HV-60 bypass isolation valve, EF V-090, provide the total normal design flow of 13,500 gallons per minute (gpm) to each train. During accident conditions (upon receipt of a Safety Injection Signal or loss of off-site power), EF HV-59 and EF HV-60 automatically close and EF V-058 and EF V-090 remain in their locked throttled positions to provide 7,350 gpm flow to the CCW heat exchanger in each train. The safety position of EF HV-59 and EF HV-60 is closed. The function of valves EF HV-47, EF HV-48, EF HV-49 and EF HV-50 is to maintain the required flow to the Containment air coolers (SGN01A, B, C, D) during both normal and accident conditions. EF HV-47 and EF HV-48, which are opened to a previously established throttled position, provide the normal design flow of 2,200 gpm to each train, while EF HV-49 and EF HV-50 remain closed. During accident conditions (upon receipt of a Safety Injection Signal), EF HV-49 and EF HV-50 automatically open to the pre-established throttled position to provide 4,000 gpm total flow to the Containment air coolers in each train. EF HV-47 and EF HV-48 remain in the same throttled position as before. The design function of these valves remains unchanged. The drawing changes are made to reflect the throttled positions previously established during pre-operational testing. There are no other changes to USAR Section 9.2.1.

Revision of the Component Cooling Water System drawings (reference USAR Figure 9.2-15) reflects the throttled use of valves EG HV-11 and EG HV-12. The function of these valves is to isolate the safety related, seismically designed, emergency source of makeup water to the CCW system. The normal source of makeup water to the CCW surge tanks is the Demineralized Water Storage and Transfer System, which is not seismically designed. Upon receipt of a CCW surge tank low-low level alarm, the demineralized water makeup control valve closes. Following this action, EG HV-11 and EG HV-12 may be opened to a previously established throttled position from the Control Room, as needed to maintain surge tank level in the respective train. The design function of these valves remains unchanged. The P&ID change is made to reflect the throttled positions previously established during preoperational testing. There are no other changes to USAR Section 9.2.2.

PLANT MODIFICATION REQUEST: 02063 Revision: 2

Safety Evaluation: Continued

As no physical or functional change is being made to any component or system, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the basis for any Wolf Creek Generating Station (WCGS) Technical Specification is not reduced. There is no impact on any WCGS Technical Specification or associated bases.

PLANT MODIFICATION REQUEST: 02068 Revision: 5

Title: Replacement Of Chlorine Monitors

Description: This revision to the modification provides a Seismic II/I nitrogen bottle rack in the Auxiliary Building. The nitrogen bottle rack is designed to hold one 2000 pound nitrogen bottle. The location of the rack is six inches north of the old chlorine detector GK AITS-3 location, which avoids interferance with existing concrete blockout provided for future penetration.

Safety Evaluation: This design change provides for a seismically designed support for holding a nitrogen bottle in the Auxiliary Building which is a Seismic Category I structure. The seismic nitrogen bottle support prevents the bottle from becoming a missile in Room 1513 of the Auxiliary Building which houses safety related components. The probability of occurrence of a malfunction of equipment important to safety previously evaluated in the USAR is not created, the possibility of an accident of a different type from any evaluated previously in the USAR is not created, the consequences of malfunction of equipment important to safety previously evaluated in the USAR is not increased, and the possibility of malfunction of equipment important to safety of a different type than any previously evaluated in the USAR will not be created because the nitrogen bottle support is Seismic II/I design and prevents the bottle from becoming a missile.

PLANT MODIFICATION REQUEST: 02071 Revision: 1

Title: Removal Of Limitorque Motor Operated Valve Heaters

Description: A generic problem with burnt wiring of Limitorque motor operator limit switch compartments has been identified. Plant Modification Request (PMR) 02071, Revision 0, was scoped for limit switch heater removal in 23 safety related Limitorque motor operated valves. Revision 1 to PMR 02071 is issued to include rotor reconfiguration for one valve.

Safety Evaluation: This design change will not result in an increase in the probability of the occurrence of an accident or the possibility that an accident of a different type will be created. The purpose of the modification is to reduce the occurrence of malfunctions of equipment important to safety since the limit switch compartment heater removal will result in longer life and greater integrity for the control wiring in the limit switch compartment. The rotor reconfiguration will result in increased accuracy for indication and greater assurance that the bypass switches can be properly adjusted without adverse consequences to other functions which would have been located on the bypass rotor. Implementation of this design will not reduce the margin of safety as defined in the bases for the plant Technical Specifications.

PLANT MODIFICATION REQUEST: 02073 Revision: 1

Title: Limitorque Motor Operated Valve Heater Removal

Description: This modification addresses the changes necessary to certain safety related motor operated valves in response to generic problems identified in NRC Information Notice 86-71 and NRC Information Notice 86-29. Revision 0 of this modification addresses the removal of the limit switch compartment heaters in certain safety related motor operated valves as recommended in NRC Information Notice 86-71. Revision 1 to this modification addresses rotor reconfiguration for those valves in response to NRC Information Notice 86-29.

Safety Evaluation: This modification will not result in an increase in the probability of the occurrence of an accident or the possibility that an accident of a different type will be created. The probability of the occurrence of malfunctions of equipment important to safety should be reduced since the limit switch compartment heater removal will result in longer life and greater integrity for the control wiring in the limit switch compartment. The rotor reconfiguration will result in increased accuracy for indication and greater assurance that the bypass switches can be properly adjusted without adverse consequences to other functions which would have been located on the bypass rotor. Implementation of this design will not reduce the margin of safety as defined in the bases for the plant Technical Specifications.

PLANT MODIFICATION REQUEST: 02121 Revision: 0

Title: Flow Element Replacement

Description: This modification replaces mechanical flow indicators with electronic flow transmitters and an electronic flow indicator to eliminate the necessity to vent the entrapped air between the High Pressure Coolant Injection flow element EM FE-928 and the transmitter EM FT-928. The current arrangement encourages gas collection in the differential pressure (DP) cells resulting in erroneous readings. Experience has shown that repeated ventings of the DP cells during the conduct of surveillance testing has been necessary, which has presented ALARA concerns of increased potential of personnel and area contamination.

Safety Evaluation: Instrument loop EM-928 serves no safety function and has no safety design basis. The purpose of this instrument loop is for indication only during testing. The subject modification has no effect on the function and operation of the High Pressure Coolant Injection System and the overall reliability of the system is improved. Additionally, EM FE-928 is supported II/I and therefore has no adverse impact on any other component, system or structure.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any Wolf Creek Generating Station Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: 02134 Revision: 2 through 5

Title: Radiation Monitor Sediment Deposits

Description: This modification installs a drain line at the low point in Essential Service Water System (ESW) line EF-215-HBC-1" and a strainer with blow-off immediately downstream of the drain. This modification is being implemented because ESW Train "A" Radiation Monitor EF RE-35 Isolation Valve EF HV-087 cannot operate properly due to sediment deposits. Revision 2 expanded the scope of the modification to include Service Water System Radiation Monitors EA RE-04A and EA RE-04B. Revisions 3 and 4 provided specification to facilitate the procurement of strainers for the modification. Revision 5 expanded the scope of the modification to include ESW Train "B" Radiation Monitor EF RE-36 Isolation Valve EF HV-088.

Safety Evaluation: The addition of low point drains and Y-strainers upstream of Isolation Valves EF HV-87 and EF HV-88 and downstream of valves EA V-041 and EA V-042 will minimize sediment accumulation in these valves or in Radiation Monitors EF RE-35, EF RE-36, EA RE-04A and EA RE-04B.

The ESW does not directly interface with radioactive systems. The interfacing systems are normally operating at a lower pressure than the ESW; however, radiation monitors are installed to monitor the water in each ESW train to assure that radioactivity has not leaked into the system. Alerted to radioactive in-leakage, the operator may identify the leaking component by selective isolation of heat exchangers and determination of the rate of decrease of ESW radioactivity while the suspect component remains isolated. Once the source is determined, the component is isolated and repaired.

The Service Water System is a non-safety related system which provides a source of heat rejection for plant auxiliaries which require cooling during normal plant operation and normal plant shutdown. During normal plant operation the Service Water System also supplies cooling water to the ESW and returns the water to the Circulating Water System. The Service Water System serves no safety related function and is not required for safe shutdown of the plant.

The Service Water System does not directly interface with any radioactive systems; however, radiation monitors are provided to monitor discharges in case of in-leakage from any of the interfacing systems. High radiation will cause an alarm to sound in the Control Room. A downscale alarm is also provided to indicate instrument trouble.

This modification does not change the safety related function of the ESW and does not affect the function, operation, structural integrity or reliability of the ESW or any other system. The design of the subject modification is in accordance with ASME Code Section III, Class 3 and will have no affect on the ability of the ESW to fulfill its associated Safety Design Bases as described in USAR Section 9.2.1.2.1.1. This modification does not affect the ability of the Service Water System to fulfill its design function and has no impact on any Wolf Creek Generating Station Technical Specification or associated bases. In addition, this modification does not affect the operability or function of any other system, component, or structure. The probability or consequences of a previously evaluated accident is not increased, the possibility of a new or different type of accident is not created and the probability or consequence of malfunctions of any equipment will not result.

PLANT MODIFICATION REQUEST: 02149 Revision: 0

Title: Station Service Water System Modifications

Description: The Service Water System (SW) normal operation total flow requirements are being increased. This increase is necessary to establish flow to components that were initially on standby (receiving no cooling water flow) to minimize Microbiologically Influenced Corrosion (MIC). To facilitate this increase in flow, operating component flows are being reduced/optimized where possible. The flow reductions are possible because the SW flow rates were conservatively established assuming a 95-degree Fahrenheit lake inlet temperature versus the maximum 90-degree Fahrenheit lake inlet temperature for normal operation. The heat removal capability of the components in the SW/Essential Service Water System (ESW) will not be reduced. The basis for the SW/ESW flows, as described above, is utilization of the 90-degree Fahrenheit lake inlet temperature. Components served by the ESW were designed for the 95-degree Fahrenheit lake inlet condition. During normal power operation when the maximum lake inlet temperature is 90 degrees Fahrenheit, the same heat removal capacity is achieved with less cooling water flow.

A total of eight new and two existing orifices are utilized to induce backpressure on the systems. The two existing orifices are renamed EF FE-3 and EF FE-4 to indicate their new flow indicating function. The ESW design basis is being modified to specify returning a portion of the cooling water from each ESW train to the Ultimate Heat Sink (UHS) during normal operation. This will be achieved by throttling the ESW to UHS valves, EF HV-37 and EF HV-38. Previously, all water supplied to the ESW was returned to the SW. Provision of continual flow to the UHS will allow for MIC control flows in the underground ESW return lines. Two new orifices (EF FE-31 and EF FE-36) are installed in the ESW return lines to the SW. These two orifices are sized to return approximately one-half the flow to the SW. The ESW to SW isolation valves, EF HV-39, EF HV-40, EF HV-41 and EF HV-42, in the same lines, will also be throttled to increase the amount of flow being returned to the UHS.

The remaining six orifices are installed downstream of SW supplied components. Two orifices (EA FE-32 and EA FE-33) are for individual components (Central chiller condensers and Chemical and Volume Control System chiller, respectively) due to piping configurations. The other four orifices serve the two main Turbine Building return headers. Valves EA FE-34 and EA FE-37 will serve the components located in the south end of the Turbine Building. Valves EA FE-35 and EA FE-38 will serve the components located in the north end of the Turbine Building. In each of the two main headers, a main orifice will be in service during normal operation, while the bypass orifice will be in service during cold lake water conditions and long-term normal shutdowns when lower flow requirements exist. This allows comparable backpressures to be provided during ranges of different flow requirements.

Piping geometry modifications are being made in the portion of the ESW return lines to the UHS located in the ESW Valve Pit. With the new normal design flow through these lines, several elbows are being eliminated to minimize possible erosion from continuous use. Additionally, with the reduction in ESW flow requirements for the normal and

PLANT MODIFICATION REQUEST: 02149 Revision: 0

Description: Continued

shutdown modes, the existing bypass around the accident backpressure orifice is no longer required. The ESW discharge isolation valves, EF HV-85 and EF HV-86, in the bypass lines are being deleted.

Due to the 90-degree Fahrenheit maximum lake temperature (non-accident conditions), the ESW safe shutdown flow rate required is now reduced below that of the accident flow. This is because the higher flowrate to the Containment air coolers required during accident conditions is now greater than the reduction in flow to the Component Cooling Water (CCW) heat exchanger that occurs when switching the CCW heat exchanger from "non-accident" to emergency condition, i.e., Loss Of Coolant Accident (LOCA), Safe Shutdown. The heat removal capability for the Penetration Room coolers (SGL15A/B) is changed to reflect the actual heat loads within the rooms.

The heat removal capabilities for several components served by the CCW are being changed to reflect more detailed or accurate information on the equipment.

Chemical injection taps are provided for those components which have normally low or stagnant flows. The tap consists of a capped one-inch connection with a normally closed gate valve. A temporary chemical injection assembly is intended to be inserted through the open valve after installation on the tap.

Flow instrumentation (differential pressure detectors) is installed across each flow orifice described above.

Safety Evaluation: This safety evaluation is intended to address the physical modifications described above and the subsequent operation of the SW and ESW.

The change in Spent Fuel Pool heat input to the ESW due to the new 18-month fuel cycle was evaluated. The primary reason for the heat load change is the projected number of fuel assemblies requiring off-load changed to accommodate the additional burnup.

As described in USAR Section 9.2.1.1, the SW has no safety design bases. The SW will continue to provide sufficient cooling water for heat removal from nonessential auxiliary plant components and from the ESW components over the full range of normal plant operation and normal plant shutdowns. This function will not be affected by the modification.

As described in USAR Section 9.2.1.2, the ESW serves several safety design bases. The ESW provides sufficient cooling water for heat removal from essential plant equipment and is also a sufficient source of emergency makeup water. Protection from long term organic fouling and corrosion problems is improved with the implementation of this design package.

Wolf Creek Generating Station (WCGS) Technical Specification 3/4.7.5 Limiting Condition For Operation 3.7.5 b. requires the plant inlet water temperature to remain less than or

PLANT MODIFICATION REQUEST: 02149 Revision: 0

Safety Evaluation: Continued

equal to 90 degrees Fahrenheit for normal operation. The WCGS accident analysis assume that UHS temperature shall not exceed 95 degrees Fahrenheit following a design basis accident. To this end, an analysis was performed to determine the impact (increase in temperature) in plant inlet water temperature due to the establishment of a continuous discharge of heated water to the UHS during normal operation.

The results of this analysis demonstrated a circulating water temperature rise of 0.71 degrees Fahrenheit (during startup conditions) and 0.69 degrees Fahrenheit (during normal conditions). This will yield a maximum temperature of 88.5 degrees Fahrenheit when operating at 100 percent annual average load factor. This analysis also demonstrated that the thermal plume conservatively predicted a temperature rise of 2.7 degrees Fahrenheit , 890 feet away from the discharge point in the UHS. Thus, conservatively using a starting temperature of 91.1 degrees Fahrenheit during LOCA shutdown conditions, the maximum temperature in the UHS based on the guidelines provided in Regulatory Guide 1.27, Revision 2 will not exceed the design basis temperature of 95 degrees Fahrenheit. Based on maximum evaporation in the UHS, it was concluded that sufficient water would be available to supply cooling water for 30 days. Hence the safety design basis of the ESW has not been modified.

Because the ESW accident design basis flow rates are not reduced, the same heat removal capacities are achieved. Therefore, the cooling of components, systems and spaces will be maintained within limits during normal operation and adequate heat removal capacity is ensured during post-LOCA conditions.

The heat removal capabilities for several components served by the CCW are being changed to reflect more detailed or accurate information on the equipment. All revised information is taken from existing design documents.

The indicated increase in heat removal capability for the Penetration Room coolers (SGL15A/B) is to reflect the actual heat loads within the rooms. The room cooler capacity was verified to exceed the revised room design heat loads for both normal operation (90 degrees Fahrenheit inlet cooling water) and for post-LOCA conditions (95 degrees Fahrenheit maximum inlet cooling water). The increased heat load on the UHS is considered insignificant. Sufficient margins already exist in the UHS design to more than compensate for the nominal increase in heat rejection from the Penetration Room coolers.

Elimination of motor-operated valves EF HV-85 and EF HV-86 does not impact safe shutdown capability of the ESW. Previously, these valves were opened to allow the total system flow to be returned to the UHS for normal or safe shutdown using the ESW. However, by acknowledging the 90 degrees Fahrenheit maximum lake temperature (non-accident conditions), the normal and safe shutdown flow is now reduced below that of the accident flow. Thus, the backpressure orifices EF FE-3 and EF FE-4 can serve the ESW during accident and safe shutdown conditions without the need for additional bypass flow.

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Safety Evaluation: Continued

The deletion of valves EF HV-85 and EF HV-86 has no impact on any design bases of the interfacing safety systems, which are the Class 1E Low Voltage Power System, the Load Shed and Emergency Load Sequencer System, the Reactor Protection System, and the Status Indication System.

The installation of backpressure orifices does not alter the SW's design structural and functional integrity. Each orifice will be installed between two flanges. The piping modifications meet the same piping code as the existing SW. Two of the orifices are installed in stress analyzed piping (extension of ESW return lines). A revised stress analysis has been performed to assure that the stresses within the Code portion of the ESW are within the Code Allowables.

Flow Transmitters EF FT-03 and EF FT-04 are two new differential pressure transmitters installed across EF FE-03 and EF FE-04. These transmitters, because they are installed in an ASME, Section III system, are seismically qualified and installed in order to maintain the system functional and structural integrity. They are used strictly to provide remote flow monitoring at Panel EF157 and do not serve any other function.

Flow indicators EA FI-31 through EA FI-38 are differential pressure indicators installed in the non-safety related SW. These indicators provide local indication only and serve no safety related function.

The installation of temporary chemical injection connections does not alter the SW and ESW Systems's design structural and functional integrity. The normally capped one-inch connections include a normally closed gate valve. The connections are designed to the same piping codes as the systems to which they are being added.

A II/I Hazards review has been performed for the addition of orifices, pipe supports, chemical taps, instruments, instrument tubing, tubing supports, electrical cable, cable raceway and raceway supports. It has been determined that no II/I hazard is present. The II/I Hazards Report has been updated to reflect the new equipment.

High energy line break and missile analyses are not required for this modification since only moderate energy pipes are involved. This modification does not add any high energy lines to the plant. The existing lines which are being modified do not create the need for any additional analyses. No safety related systems or components are adversely affected.

A seismic stress analysis has been performed to determine any effect the newly added and modified equipment may have on any seismically stress analyzed equipment. The principle codes of the piping systems being modified are ASME Section III, Class 3, and ANSI B31.1. All stresses were found to be within the Code Allowables.

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Safety Evaluation: Continued

The fire hazards analysis is updated to reflect the deletion of EF HV-85 and EF HV-86. The fire rating of two walls is maintained following the addition of two penetrations for conduits serving the ESW Valve Pit orifice flow indicators.

In the Turbine Building, some piping in three other systems required modification to support the installation of the orifices for the south SW header. The Fire Protection System changes have been verified not to create excessive additional pressure drop or any other concerns. This is also true of the Turbine Building Closed Cooling Water and Liquid Radwaste Systems. Minor pipe rerouting was required to obtain clearance over the new orifice and bypass line piping. The Fire Protection and Liquid Radwaste Systems are designated as Special Scope. A support also had to be modified in the Demineralized Water Makeup Storage and Transfer System. The above systems' original design structural and functional integrity will be maintained.

In consideration of the above evaluation and since accident cooling water flow rates to safety related components are not reduced and the same accident and safe shutdown heat removal capacities are achieved, the proposed change does not involve an increase in the probability or consequences of any accident previously evaluated. Additionally, no malfunctions of equipment important to safety are affected or created, no new or different kinds of accident are created, and no change in the margin of safety exists.

PLANT MODIFICATION REQUEST: 02183 Revision: 1

Title: Relocation Of Diesel Generator Instrumentation

Description: The subject modification relocates instrumentation from the instrument panels of Emergency Diesel Generators (D/G) KKJ01A and KKJ01B to wall-mounted instrument racks located on the east wall of the D/G rooms. The instruments are being relocated to provide a more accessible location for maintenance and calibration.

The subject modification also adds process isolation valves to the associated D/G jacket water sensing lines of the Emergency Diesel Engine Cooling Water System (EDECWS). The EDECWS is a safety related, closed cycle system that serves as an intermediate system between the diesel engines and the Essential Service Water System. These valves are added to facilitate instrument maintenance.

USAR Table 3.11.(B)-3, Identification of Safety Related Equipment and Components, will be revised to reflect the addition of the described valves. The valves, located in the D/G rooms, are in a mild environment post-accident. In addition, USAR Figures 9.5.5-1, Sheets 1 and 2, and 9.5.6-1, Sheets 1 and 2, will be revised to reflect the addition of the described valves and instrument tubing reconfiguration.

Safety Evaluation: The wall-mounted racks, relocated instruments and associated tubing and valves are Seismic Category I and therefore pose no hazards to any adjacent equipment. New Class 1E, Seismic Category I conduit, cables and termination boxes are also added to facilitate the instrument relocation.

The function of the relocated instrumentation is to provide annunciation and indication for the intercooler water and jacket water systems, annunciation for the starting air system, and to provide a back-up pressure switch to the electric diesel speed control switch KJ SS-66. The subject instruments remain functionally identical to the original design. The added process isolation valves are ASME III, Class 3, Seismic Category I and in conjunction with the relocated instrument tubing design ensure that the structural integrity and pressure boundary of the EDECWS is maintained. A walkdown of the subject modifications has determined that no items, not supported II/I, can adversely affect any safety related equipment added by this modification. Additionally, this modification adds no items which are not supported II/I.

The ability of the D/G and their associated EDECWS to fulfill their design functions as described in USAR Sections 8.1.4.2 and 9.5.5 are not affected by the subject modifications. In addition, upon review of the Wolf Creek Generating Station (WCGS) Technical Specifications, the modifications were found to have no impact on any specification or associated bases.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any WCGS Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: 02206 Revision: 2

Title: Increased Combustion Loading

Description: The modification established a new fire area, A-33, and provided the associated proposed USAR changes which described the new fire area for increased storage of combustible material. This modification revision provides for the installation of three-hour rated fire dampers in the Heating, Ventilating, and Air Conditioning ductwork for both supply and return air to support the three-hour integrity of fire area A-33.

Safety Evaluation: The fire dampers will isolate fire area A-1 from the newly established fire area A-33, and isolate the Heating, Ventilating and Air Conditioning ductwork from other areas of the Auxiliary Building in the event of a fire. The fire dampers are consistent with 10CFR50, Appendix R requirements.

PLANT MODIFICATION REQUEST: 02272 Revision: 0

Title: Emergency Diesel Generator Startup Air Strainer

Description: This modification revises the procurement documentation for the bonnet assembly adapter for the Emergency Diesel Generator's 1.5-inch and 2-inch starting air strainers to an ASME Class 3 part. Since the bonnet assembly adapter is permanently attached (by weld) to a pressure boundary part, the adapter must be made from traceable material.

Safety Evaluation: This modification entails revising the bonnet assembly adapter for the Emergency Diesel Generator's 1.5-inch and 2-inch starting air strainers to an ASME Class 3 part for conformance to the ASME pressure boundary material requirements. No safety feature of the plant is impacted. The probability or consequence of a previously evaluated accident is not increased, the possibility of a new or different type of accident is not created and the probability or consequence of malfunctions of any equipment will not result.

PLANT MODIFICATION REQUEST: 02365 Revision: 0

Title: Main Turbine Vibration Recorder Replacement

Description: Due to unavailability of replacement parts and poor reliability, this modification has been issued for the replacement of the Main Turbine Vibration and Eccentricity Recorder, AC YR-0141, with an upgraded, more reliable and maintainable model.

Safety Evaluation: The function of the Main Turbine Vibration and Eccentricity Recorder is non-safety related; however, the recorder is mounted in safety related Main Control Board (MCB) RL028. The new recorder is smaller in size than the recorder it replaced. Therefore, the MCB cutout was modified to accommodate the new recorder's dimensions. A review of this modification has determined that the seismic integrity of the MCB has not been adversely affected.

PLANT MODIFICATION REQUEST: 02386 Revision: 1

Title: Valve Weight And Center Of Gravity Verification

Description: This modification revises the applicable drawings to reflect actual valve weight and center of gravity of various Westinghouse swing check valves. No modification to these valves in the field is required. The Westinghouse specification required physical verification of valve weight and center of gravity for each valve design within this particular specification. The actual weight of the sample valve shall be plus or minus ten percent of the weight shown on the drawing. The center of gravity shall be verified within plus or minus ten percent of valve's extended structure measure from the valve run centerline. Valves associated with drawings M-724-00352, M-724-00354 and M-724-00402 were outside this acceptance limit.

The affected isometric drawings will be revised to reflect the center of gravity and valve weight change at modification package close-out.

Revision 1 of this modification was issued to provide additional details to the evaluation.

Safety Evaluation: Valves manufactured to drawings M-724-00352, -00354 and -00402 are outside the original specification limits on center of gravity and weight. Valves manufactured to drawing M-724-00352 have no deviations in terms of mass but do have an alteration in the center of gravity upward by 1.3 inches for a total of 4.7 inches above piping centerline. This change of the six inch check valves, which have a mass weight of 400 pounds each, were reviewed for impact to the piping stress levels for normal, upset and faulted loading and were found to be of little or no consequence. Valves manufactured to drawing M-724-00354 have no deviation in terms of center of gravity but do have a mass decrease of 370 pounds. This change to the 10 inch check valves which had an original weight of 1,860 pounds were reviewed for impact to the piping stress levels for normal, upset and faulted loading and were found to be of little or no consequence. Valves manufactured to drawing M-724-00402 have deviated in weight by an increase of 175 pounds and center of gravity upward by 1.1 inch. This change to the 14 inch check valves, which had an original weight of 1400 pounds each, were reviewed for impact to the piping stress levels for normal, upset and faulted conditions. The increase in weight is 12.5 percent, which is less than the 17 percent SNUPPS criteria for determination of reanalysis requirement. The center of gravity remains low (4.5 inches above pipe centerline) and is judged to be of little or no consequence. In addition, review of the piping stress levels indicates that nozzle and stresses are well below the allowable values. Therefore, the revised valve weights and center of gravity changes have no adverse impact to the system design.

The probability of occurrence or consequences of an accident previously evaluated has not been increased; the probability of an accident different from any previously evaluated has not been increased; the probability of occurrence or the consequences of malfunction of equipment important to safety has not been increased; the possibility of a malfunction of equipment important to safety of a different type than previously evaluated has not been increased as a result of this modification.

PLANT MODIFICATION REQUEST: 02426 Revision: 0

Title: Removal Of Distribution Panel Breaker

Description: This modification removes an existing spare breaker, NG02ACR141, and installs a cover plate in the empty slot.

Safety Evaluation: Since the breaker was a spare no safety related equipment other than the panelboard is affected. It should be noted that by removing the breaker no adverse seismic effects on the panel have been created. In addition, any inadvertent contact (by personnel) with the energized panelboard internals will be prevented by the installation of the cover plate.

PLANT MODIFICATION REQUEST: 02440 Revision: 1

Title: Visual Weld Acceptance Criteria

Description: This modification allows the option of applying additional visual weld acceptance criteria for the performance of structural weld inspections. A uniform training program will be provided to Quality Control (QC) inspectors in the implementation of the additional criteria to assure consistency of application. The applicable USAR changes will be incorporated at package close-out. Revision 1 to this modification incorporates applicable specifications.

Safety Evaluation: The visual weld acceptance criteria was developed to address some of the difficulties associated with the inspection of structural welds. The AISC "Quality Criteria and Inspection Standards" states that there are times when repair work creates higher residual stresses and does more harm than good. The use of this criteria will help to minimize unnecessary repairs without lowering quality standards.

The structural effect of each discontinuity for which acceptance criteria are provided has been subjected to critical engineering evaluation and has been reviewed by the NRC. Engineering analysis and calculations have been performed to confirm the acceptability of the criteria. In addition to calculations, the justification for the acceptance criteria considers past experience and a number of conservatisms inherent in engineering design of structural welds.

The NRC will be given the opportunity to review the QC Inspector training program and observe training in progress.

PLANT MODIFICATION REQUEST: 02483 Revision: 0

Title: Temporary Fire Protection Equipment Upgraded To Permanent

Description: This modification accepts the temporary Fire Protection System equipment for upgrade to permanent classification. The Fire Protection System equipment of concern includes the underground piping, hydrants and valves located north of the Materials Management Building, east of the Construction Administration Building (including the Fire Protection training grounds), and west of the Main Warehouse. This equipment is not safety related except for 1FP087, fire hydrant, and 1FP593, fire hydrant isolation valve, which are special scope. The equipment now meets all USAR commitments and was installed and tested per Specification A-3824, Section 305.

Safety Evaluation: This modification has no impact on the structural integrity, function and/or operability of the Fire Protection System or any other system and does not affect the ability to fulfill any safety related function as described in the safety design bases in USAR Section 9.5.1. The upgrade of the Fire Protection System equipment has no impact on the Wolf Creek Generating Station Technical Specifications or associated bases. The drawing revisions being made to reflect the as-built configuration associated with this modification will not increase the probability or consequences of occurrence of an accident previously evaluated in the USAR nor the possibility that an accident of a different type from any evaluated previously in the USAR. Likewise, these changes will not increase the probability or consequences of occurrence of a malfunction of equipment important to safety previously evaluated in the USAR, nor the possibility that a malfunction of equipment important to safety may be created of a different type than any previously evaluated in the USAR. There is no margin of safety as defined in the bases for any Technical Specification applicable to these changes. Finally, an unreviewed safety question does not exist as a result of these changes.

PLANT MODIFICATION REQUEST: 02526 Revision: 3

Title: Undervoltage Power Supply

Description: This modification revision allows the use of either a 5.0k-ohm resistor or a 4.99k-ohm resistor for Resistor R6 in the undervoltage power supplies located in Cabinets NF039A and NF039B. The power supplies monitor the 4160-volt Class 1E bus voltages and initiate load shedding when an undervoltage condition occurs.

Safety Evaluation: A current proportional to the 4160-volt Class 1E bus voltage flows through the subject resistor and develops a proportional voltage. This voltage is compared to a reference voltage to determine when an undervoltage condition occurs. If the value of the resistor is changed, the reference voltage can be changed accordingly during calibration to achieve the correct undervoltage setpoint. Therefore, the value of the resistor can be chosen arbitrarily and, after calibration, there will be no adverse effect on the ability of the undervoltage power supplies to perform their safety related function.

PLANT MODIFICATION REQUEST: 02532 Revision: 1

Title: Body-To-Bonnet Torque Value

Description: This modification was issued to allow increasing the torque of the body-to-bonnet bolts on the Reactor Coolant System (RCS) Loop 1 Pressurizer Spray Valve due to leakage. Revision 1 to this modification replaces the existing gasket between the valve body and packing box with a spiral wound gasket, which is an Inconel 600 with grafoil filler. This replacement gasket will provide better sealing than the present gasket which is a 316L stainless steel gasket with asbestos filler. The gasket replacement is applicable for both Loop 1 and Loop 2 Pressurizer Spray Valves and the applicable drawings will be revised to reflect the gasket change.

Safety Evaluation: Changing the body-to-packing box gasket material from an asbestos filler with stainless steel ring to a grafoil filler with Inconel ring will provide a better seal of the mechanical joint and will not increase the probability or consequences of occurrence of an accident previously evaluated. Increasing the sealing of the mechanical joint by changing gasket material will not create an accident of a different type than previously evaluated. The probability or consequences of malfunction of equipment important to safety has not been increased by changing the gasket material on the body-to-packing box connection. The material change of the gasket will not create a malfunction of equipment important to safety that has not been previously evaluated. The margin of safety of equipment has not been reduced as defined in the Technical Specifications by the material change of the gasket.

PLANT MODIFICATION REQUEST: 02563 Revision: 0

Title: Reclassification Of Area Housing Security System Secondary Power Supply

Description: This modification accomplishes the physical modifications necessary to locate the Security System Secondary Power Supply (SSSPS) within an area administratively controlled as vital. The physical modifications consist of creating a newly enclosed space around existing equipment in the Turbine Building and the addition of barriers to the Heating, Ventilation, and Air Conditioning System (HVAC) diffusers. This modification is the result of a commitment made to the Nuclear Regulatory Commission (NRC) to locate the SSSPS for alarm annunciator equipment and non-portable communications equipment within a vital area. USAR Section 13.6, "Wolf Creek Generating Station (WCGS) Physical Security Plan", has been revised to reflect these changes. (The revision was submitted to the NRC via letter WM 88-044.)

Safety Evaluation: The new loads imposed on the existing structural floor of the Turbine Building as a result of this modification are negligible and are well within the allowable superimposed design loads. This modification affects USAR Figures 1.2-32, 1.2-36 and 12.3-2. Further USAR changes, involving Section 13.6, Figures 5.1-1 and 5.1-10, have already been revised to reflect these changes. No safety related systems or components are added, altered, or present in the new room. The Turbine Building and Communications Corridor are non-safety related structures, therefore an evaluation of II/I hazards is not necessary. The additions made as a result of this modification have no impact on existing fire protection features of the area. The addition of the barriers to the Turbine Building HVAC diffusers will have no adverse affects on the operability or function of the associated HVAC. The USAR text and WCGS Technical Specifications are not affected by these changes.

PLANT MODIFICATION REQUEST: 02568 Revision: 2

Title: Emergency Exhaust Fans Inlet Vane Modification

Description: This modification revision deletes the originally specified Phase II work which required the procurement and installation of variable inlet vanes for emergency exhaust fans, CGG02A and CGG02B. This revision also conditionally accepts as installed Temporary Modification Orders (TMO) 88-139-GG and 88-140-GG which adjusted the close travel limit switches on dampers GGD018 and GGD025 to allow both dampers to remain partially open during a Safety Injection System (SIS) lineup of the Emergency Exhaust System. The close limit auxiliary cams in the damper operator may need to be adjusted to be in synchronism with the close limit travel cams readjusted in the TMO.

The new configuration provides supplemental flow from the Fuel Building to the Emergency Exhaust System to help decrease the negative pressure in the Auxiliary Building to an acceptable level. This decrease in excessive vacuum in the Auxiliary Building allows the Control Room to meet its pressure requirements of 0.25-inch water gauge, as required by Technical Specification (T/S) 3.7.6. Since only the close limits were adjusted in the TMO, the dampers may still be opened 100 percent. Thus, Fuel Building Ventilation Isolation Signal (FBVIS) actuation of the dampers is unaffected.

Revision 1 of this modification installed new sheaves on fans DCGG02A and DCGG02B which lowered the fans' revolutions per minute. Consequently, the brake horsepower (BHP) required for operation in the new configuration has also been reduced. The maximum BHP required by the fans at their reduced speed is well below the motor BHP nameplate rating for each motor.

Safety Evaluation: The safety evaluations for the unaffected bases contained in USAR Section 9.4.3 have been reviewed and have been determined to be valid with the implementation of the modification. Means are provided to assure both the control and monitoring of gaseous radioactive releases following a Loss Of Coolant Accident (LOCA).

The Emergency Exhaust System maintains a negative pressure in the Auxiliary Building of not less than 0.25-inch water gauge, following a LOCA. The system collects and processes potential Emergency Core Cooling System (ECCS) leakage and the effluent purged from the Containment via the Hydrogen Purge System. The system is monitored for radioactivity upstream of the filter adsorber unit prior to release through the unit vent.

Testing of the Emergency Exhaust System with a SIS line-up has been performed during both Refuel 2 and Refuel 3. Refuel 2 testing demonstrated that a lower flow rate through the system produced no more than 0.25-inch water gauge negative pressure in the Auxiliary Building. Thus, the Refuel 2 testing provided the support for the Technical Specification change noted in Revision 0 of this modification. The Technical Specification change was approved in 1988 and has been incorporated into NUREG-1136 as Amendment 22. Refuel 3 testing demonstrated the feasibility of the modification under consideration (note that the required 0.25-inch water gauge negative pressure was again achieved in the Auxiliary Building during this testing). Since testing will confirm periodically (i.e. in accordance with Technical Specifications 3/4.7.7 and 3/4.9.13) that the Emergency Exhaust System maintains adequate negative pressure in the Auxiliary Building, any leakage between the Auxiliary and Fuel Buildings is not a concern provided that both buildings remain negative relative to the outside atmosphere.

PLANT MODIFICATION REQUEST: 02568 Revision: 2

Safety Evaluation: Continued

The operation of Fuel Building process radiation monitors GG RE-27 and GG RE-28 are unaffected by this modification. They are still available for the operator if he should want to know the activity of the flow being processed through the emergency exhaust filter adsorber train. Therefore, the criteria for preventing unprocessed exfiltration is still met.

Also, the reduced flow through the emergency exhaust filter adsorber provides for longer residence time in the filter and thus for improved removal efficiency. Therefore, the radiological consequences would not be increased as a result of the modification.

The modification has been reviewed from the standpoint of human factors and also is found acceptable. The hand indicating switch close button, lights and related computer point for the dampers will still operate as originally designed except for repositioning the damper close limit discussed above. The Engineered Safety Features SIS Status panel indication for both dampers will also actuate in this manner. FBVIS indication on the Engineered Safety Features Status panel will remain unchanged.

PLANT MODIFICATION REQUEST: 02632 Revision: 3

Title: Preaction Sprinkler System Modification

Description: This modification installs a pipe support in the Preaction Sprinkler System located in the Diesel Generator Room "B" to improve the structural stability of the sprinkler system. This modification eliminates the interference of the Preaction Sprinkler System hangers with the safety related Heating, Ventilation and Air Conditioning System ductwork by relocating the interfering hangers six inches east of their present location. By rerouting the interfering piping, this modification also eliminates the interference of a Sprinkler System drain valve with the safety related Diesel Generator fuel day tank.

Safety Evaluation: The function and operating characteristics of the Preaction Sprinkler System are not affected in any manner by this modification. Therefore, the probability of occurrence and consequences of an accident previously evaluated in the USAR will not be increased. The possibility of an accident of a different type from any previously evaluated is not created. The probability of occurrence and consequences of malfunctions of equipment important to safety previously evaluated is not increased. There is no possibility that a malfunction of equipment important to safety may be created of a different type than any previously evaluated. This design change will not result in a reduction in the margin of safety as defined in the basis for any Technical Specification.

PLANT MODIFICATION REQUEST: 02634 Revision: 0

Title: Concrete Expansion Anchor Design Criteria Change

Description: This modification is being issued to release the revised design documents to allow use of recently improved concrete expansion anchor designs (undercut-type) which are expected to provide cost savings and improve ALARA results during the life of the plant. Specifications have also been revised to modify the design allowables, installation criteria, etc., based on the latest published data supplied by the new permitted vendors. The scope of this modification package is to add Sections B7.1 through B7.5 of Appendix B, Steel Embedments, to the American Concrete Institutes, Code Requirements for Nuclear Safety Related Concrete Structures, ACI 349-80 with the 1984 Supplement, to the list of applicable codes utilized in the design of Category I structures. ACI 349-80 Appendix B specifies the design requirements for ductile designed expansion anchors.

Safety Evaluation: ACI 349-80 Appendix B allows ductile design of expansion anchors. The load factor for ductile designed expansion anchors is 1.7 per Section 9.2 of ACI 318.77. This is lower than load factors required for non-ductile expansion anchor designs (load factor of 4). However, the use of ACI 349-80 Appendix B for ductile design meets all previous design criteria requirements, complies with other USAR commitments, and has been approved by the NRC on other projects. Therefore, this modification has no impact on the Wolf Creek Generating Station Technical Specification or on the Safety Design Basis for any system which would utilize ductile designed expansion anchors.

PLANT MODIFICATION REQUEST: 02651 Revision: 0

Title: Increase Of Feeder Cable Size And Revision Of Low Voltage System Drawings

Description: The subject modification involves upsizing the motor feeder cable and revising the relevant documents (e.g., motor and fan data sheets, vendor prints, etc.) to reflect the existing, as-built, operating conditions for penetration cooling units SGL15A and SGL15B and to reflect the latest information received from the motor manufacturer.

Safety Evaluation: This information clarifies the operating horsepower capability of motors DSGL15A and DSGL15B as 30 horsepower (HP) with a service factor of 1.15 with no impact on the original environmental and seismic qualifications.

The cable currently installed will adequately carry the motor current corresponding to the as-built 25 HP. Increasing the feeder cable size will have no adverse affect on the performance of fan units and provides ampacity derating margin for future raceway fill increases and motor full load currents up to motor full load currents corresponding to 30 HP and service factor 1.15. Thus, increasing the feeder cable size provides additional margin over the actual design load on the cable.

Each cooler is safety related and required to function post-accident and to achieve and maintain the plant in a safe shutdown condition. The subject changes will not affect the ability of the penetration room coolers to fulfill their safety design bases as described in USAR Section 9.4.3.1.

USAR Table 9.4-8 is being revised to indicate that the penetration room cooler motors each have a 30 HP capability. In addition, the list of loads supplied by the Emergency Diesel Generators (D/G) is being revised to indicate that the subject motors are 30 HP, the peak brake HP is 25, and to reflect the respective increase in the D/G loss of coolant accident and blackout loads. The identified increase in D/G loading, 6 kilowatt (kw) per D/G, results in a cold shutdown load of 5647 kw and is well below the D/G continuous rated load of 6201 kw, therefore, adequate design margin remains. Since there are no physical changes being made to the penetration room coolers or associated motors, there is no change to the actual D/G loading as previously demonstrated during preoperational testing or during the surveillance testing associated with Wolf Creek Generating Station (WCGS) Technical Specification 4.8.1.1.2. Therefore, the subject changes have no affect on the operation or function of the D/G. The as-built fan configuration, including an operating speed of 2200 revolutions per minute, was evaluated and determined to be bound by the existing missile analyses calculation, therefore no missile hazards are of concern. The subject modifications have no impact on any WCGS Technical Specification or associated bases.

PLANT MODIFICATION REQUEST: 02674 Revision: 0

Title: Update To The Westinghouse Precautions, Limitations And Setpoints

Description: This modification updates the Westinghouse Precautions, Limitations and Setpoints (PLS) to agree with the actual plant setpoints in the Wolf Creek Generating Station Technical Specifications (T/S). It also clarifies one page that was unreadable and includes some data marked "later" on our present PLS.

The following describes each change:

1) Low Pressurizer pressure Reactor trip setpoint will be lowered from 1900 psig to the correct value of 1875 psig presently in T/S (PLS page 0021).

2) Delta-Q function has been changed to agree with that shown in T/S (PLS page 0020).

3) Various over-temperature delta-T and over-pressure delt-T trip setpoint constants have been changed to agree with T/S (PLS pages 0017 and 0018).

4) Nuclear Instrumentation System power range high rate trip setpoint time constant has been adjusted to agree with that listed in the T/S (PLS page 0015).

5) Page 0049 of the PLS showing Nuclear Instrumentation System setpoints has been enlarged for clarity.

6) Westinghouse letter SAP (PIP)-107 provided many PLS changes but only a few were not addressed elsewhere in this modification package or already incorporated in the PLS. The changes not addressed elsewhere include removing a note on PLS page 0023 showing initial plant startup Nuclear Instrumentation System calibration points. The pressure setpoint and lead/lag time constants for the power operated relief valves (PLS page 0035) were provided. Also, steam generator in wet layup level sensing calibration data was provided.

7) Proposed T/S change TS032 that incorporates the 18-month fuel cycle changes has been approved by the Nuclear Regulatory Commission and included in the T/S as Operating License Amendment 23. These changes are being made to the PLS on page 0020 (delta-I function), and page 0022 (Reactor Coolant low flow setpoint).

Safety Evaluation: Accident and safety related equipment malfunction probabilities previously evaluated in the USAR will not be increased. Accident and safety related equipment malfunction consequences previously evaluated in the USAR will not be increased. Accident and safety related equipment malfunction possibilities of a different type than those evaluated in the USAR will not be created. Technical Specification safety margins will remain unaffected.

PLANT MODIFICATION REQUEST: 02716 Revision: 1

Title: As-Built Location Of Temporary Structures

Description: This modification revision incorporates a more recent site plan drawing showing the locations of various permanent and temporary site structures. Also, USAR Figure 1.2-44 and Section 1.2.2 will be revised to reflect the more up-to-date information to show the principal structures located on the Wolf Creek Generating Station site.

Safety Evaluation: The subject revision involves incorporation of a more up-to-date drawing. This incorporation does not involve or change the probability of occurrence of an accident previously evaluated in the USAR; does not increase the consequences of an accident previously evaluated in the USAR; does not create an accident of a different type from any evaluated previously in the USAR; does not involve any equipment so the probability of occurrence or the consequences of a malfunction of any equipment is not affected; does not create a malfunction of a different type than any previously evaluated in the USAR; does not result in a reduction in the margin of safety as defined in the bases for any Technical Specification.

PLANT MODIFICATION REQUEST: 02752 Revision: 0

Title: Essential Service Water System Piping Replacement

Description: The scope of the modification is to replace existing carbon steel piping, fittings and valves in the Essential Service Water (ESW) Chlorination System with materials more suited to long-term chlorine service. Materials selected for minimal corrosion properties when subjected to chlorine gas and chlorinated water are Kynar (Polyvinylidene fluoride resin) lined carbon steel and Alloy 20. Since plastic lined piping is not available in ASME materials, Alloy 20 is selected for the ASME Class 3 portion of the Chlorination System. The specific scope of the piping modification is downstream of ESW supply valve KT V-001 and downstream of chlorinator FKT 01 to the 30 inch ESW warming lines. An injection nozzle has been designed to ensure adequate dispersion of chlorinated water into the warming lines.

Safety Evaluation: The ESW Chlorination System (KT) serves no safety function and has no safety design bases. The portion of the ESW System being modified is approximately 16 feet of 2 inch line for each train. Except for minor physical changes, only the pipe material is being changed (carbon steel to Alloy 20). The new material is adequate for the service pressure and temperature. Therefore, the safety function and safety design bases of the ESW System are not affected by the modification. As described in USAR Sections 2.2.1.2.4.1, 2.2.3.1.3 and 2.2.3.1.7, an accidental chlorine release from the ESW pumphouse area is less severe than one from the Circulating Water Screen House (CWSH) area. This is based on more chlorine storage vessels at the CWSH. The modification does not change the amount of chlorine stored at the Wolf Creek site or change the number or size of vessels in service at one time. Therefore, the results of the existing chlorine analysis still apply. An accidental release of chlorine will not affect the Control Room habitability. The only USAR change is to Figures 9.2-2 and 9.2-3 which will be revised to reflect the new piping arrangement and equipment location. There is no impact on any Wolf Creek Generating Station Technical Specification or associated bases.

PLANT MODIFICATION REQUEST: 02764 Revision: 0

Title: Replacement Of Bulb And Wedge Seals On Damper Blades

Description: This modification provides a change in material of the bulb and wedge seals on the following miscellaneous Heating, Ventilation and Air Conditioning System dampers: GF D-022, 023, 024, 025, 062, 063, 064, 065, and 066. The seals in these dampers are degrading because the presence of Fyrquel from the Main Steam Isolation Valves (MSIV) and Feedwater Isolation Valves (FWIV). The replacement seals resist Fyrquel degradation. The replacement seals are silicon rubber and will meet the existing leakage requirements. The replacement seals are considered a product enhancement over the old seals in the presence of Fyrquel.

Safety Evaluation: The probability of occurrence of the consequences of an accident previously evaluated has not been increased; the possibility of an accident different from any previously evaluated has not been increased; the probability of occurrence or the consequences of malfunction of equipment important to safety has not been increased; the possibility of a malfunction of equipment important to safety of a different type than previously evaluated has not been increased; nor does the modification result in a reduction in the margin of safety as defined in the bases for any Technical Specification.

PLANT MODIFICATION REQUEST: 02767 Revision: 0

Title: Refueling Water Storage Tank Level Nuisance Alarm

Description: The affected Refueling Water Storage Tank (RWST) level instrumentation loops 930 and 931 provide level indication and alarms to assure the required tank water level for injection is maintained, and provides an alarm and interlock for automatic switchover of the Residual Heat Removal (RHR) pumps to the Containment recirculation sump to ensure RHR pump net positive suction head requirements are met. The loops also provide indication and alarms to advise the operator when other switchovers must be manually accomplished.

Currently, a level transmitter signal is sent to a Control Room indicator, a bistable for "LO-LO-1" level alarm/interlock, and an isolator. The isolator output goes to a level recorder, two dual bistables for "HI", "LO", "LO-LO-2" and "EMPTY" alarms, and a computer input. The "HI" alarm setpoint is 1.5 percent above the nominal normal water level. The bistable deadband is 1 percent, which results in the "HI" alarm resetting 0.5 percent above the nominal normal water level.

When removing/inserting the level recorder from/to its case, voltage spikes are induced in the recorder input signal leads. Since these leads are common to the alarm bistable inputs, an "RWST LEVEL Hi" alarm occurs. Furthermore, if actual RWST is slightly high (between 0.5 and 1.5 percent above nominal), the normal signal level is not low enough to reset the bistable and the annunciator stays locked in.

This modification installs additional isolators which allow the recorder input signal leads to be disconnected from the bistable inputs and to be connected to the new isolator outputs, eliminating the path for voltage spikes to reach the alarm bistables. To help prevent the annunciator from locking in, the bistable deadband for the "HI" level alarm has been changed from 1 percent to 0.5 percent.

Safety Evaluation: This modification does not adversely affect the ability of instrument loops 930 and 931 to provide their required indication, control (interlock) and alarm functions. The level recorder inputs remain isolated from the control portion of the circuit, and the level circuitry is not degraded or overloaded by the additional isolators.

PLANT MODIFICATION REQUEST: 02772 Revision: 0

Title: Addition Of Lighting Panel And Transformer

Description: Lighting panel QA59 and transformer XQA59 are being added between the Turbine Building and Communications Corridor to provide additional margin for future lighting loads. The subject panel can serve the Turbine, Auxiliary, and Control Buildings.

Safety Evaluation: The subject addition has no impact on the ability of the lighting system to fulfill its design basis as described in USAR Section 9.5.3. The only change to the USAR is to Figure 9.5.3-1 to show the addition of the subject lighting panel and transformer.

The addition of QA59 and XQA59 have no impact on the Technical Specifications.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any Wolf Creek Generating Station Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: 02780 Revision: 0

Title: Pressurizer Surge Line Stratification Analysis

Description: This modification package is for the re-analysis of the Pressurizer surge line to determine the effects of thermal stratification. The Pressurizer surge line connects the Pressurizer to Loop 4, Reactor Hot Leg, thus enabling continuous coolant volume pressure adjustments between the Reactor Coolant System (RCS) and the Pressurizer. Thermal stratification in the surge line results from the separation of flow streams between water at Pressurizer temperature, at the top of the pipe cross section, and colder water at Hot Leg temperature, at the bottom of the pipe. The worst case relative to flow stratification develops during plant heatup or cooldown with the Pressurizer at approximately 425 degrees Fahrenheit and the RCS at approximately 125 degrees Fahrenheit. As a result of the re-analysis, a change in the spring size for one of the supports was required.

Safety Evaluation: The re-analysis was required to determine the effects of potential flow stratification in the Pressurizer surge line. Configuration and operation characteristics of the system are not affected in any way by this analysis. The spring size was revised to accommodate the pipe movement due to the re-analysis. The routing of the pipe has not been changed. Form, fit and function of the piping system remains the same. Size of the spring is the only thing that was revised due to the re-analysis.

PLANT MODIFICATION REQUEST: 02781 Revision: 1

Title: Freon Leak On Class 1E Equipment Air Conditioning Unit

Description: In response to a freon leak identified on Class 1E Equipment air conditioning (A/C) unit SGK05A, this modification provides an optional detail arrangement and change in material for the filter dryer end plate assembly for SGK05A, SGK05B, and the Control Room A/C units, SGK04A and SGK04B. Revision 1 of this modification revised the design to allow an option that provides a two piece carbon steel fitting arrangement for the cover of the filter dryer end plate jack screw.

Safety Evaluation: The function of the subject dryer end plate assembly is two-fold. The assembly acts as a cover to prevent inadvertent adjustment or tampering; and acts as a seal to prevent freon leakage. This modification provides a design that does not significantly change the form, fit or function of the original design. The change in weight of the end plate assembly has no significant effect on the seismic qualification. The system design function and operability is not changed in any way. The function and operation of the filter dryer is not changed in any manner. The overall operation, function and seismic qualification of the subject units are not impacted.

The subject modification has no impact on any Technical Specification or its associated bases.

PLANT MODIFICATION REQUEST: 02785 Revision: 0

Title: Nuclear Instrumentation System Fuses

Description: This modification allows for the use of Littlefuse 3AG 250 volt type 312 fuse as an optional fuse to the Bussman MTH-5 fuse. These fuses are Underwriter's Laboratory (UL) listed which signifies they are manufactured, marked and tested to the requirements of UL 198G. The critical characteristics of the fuses are part number, voltage rating, current rating, time-response to overcurrent and physical configuration. The critical characteristics are controlled by UL 198G requirements.

In addition, fuses are a type of device that would not normally be altered by a mid-tier supplier, thus a UL listed fuse supplied by a vendor other than the manufacturer can be reasonable assured to be identical to that provided directly from the manufacturer. Also, testing of applications after installation of new fuses provides additional assurance that the fuses are acceptable.

The design drawings were also revised to add Littlefuse 3AG 250 volt type 312 fuse as an optional fuse to Bussman MTH-5 fuse.

Safety Evaluation: Due the interchangeability of the fuses no new accident scenarios are created, so there is no possibility an accident of a different type from any evaluated previously will be created. The critical characteristics of the fuses are the same, therefore no new failure modes are created and the probability of occurrence of malfunctions of equipment important to safety previously evaluated will not be affected. The fuses have the same current rating and interrupting capability, so the consequences of a malfunction of equipment important to safety will not be affected. The fuses are identical in form, fit and function, so the probability of occurrence of an accident previously evaluated in the USAR is not affected. Because the fuses are identical in form, fit and function, the possibility that a malfunction (of a different type) of equipment important to safety than any previously evaluated in the USAR may be created is none. The capability for accident mitigation is not decreased due to the identical performance characteristics of the fuses so the consequences of an accident previously evaluated in the USAR will not be affected. Due to the identical performance characteristics of the fuses no bases are altered and there is no effect on the margin of safety.

PLANT MODIFICATION REQUEST: 02793 Revision: 0

Title: Restoration Of Handrail On East Side Of Refueling Pool

Description: This modification is being provided to restore the handrail on the east side of the refueling pool. This modification accepts the orientation of handrail Section HR-3 which was installed turned ends 180 degrees from its design location since it does not interfere with the overall integrity of the handrail system. The Swing gate, per design, was to be welded to the north side of Section HR-3 but was welded to the north side of Section HR-1 instead, and Sections HR-1 and HR-3 were inadvertently damaged during the lifting of the Radiation Shielding Pad. This modification accepts the Swing gate configuration and provides modification of Sections HR-1 and HR-3.

Safety Evaluation: The design change does not reduce the strength of the handrail system in any way. Operating characteristics of the handrail are not affected in any way.

PLANT MODIFICATION REQUEST: 02796 Revision: 0

Title: Longer Mineral Insulated Cable For Reactor Coolant Temperature Detection Assembly

Description: This modification allows use of a longer mineral insulated (MI) cable (900 inches versus 600 inches) for an otherwise identical temperature compensation resistance temperature detection (RTD) assembly, BB TE-1323.

Safety Evaluation: The process loop will be unaffected by the added length since RTDs with cables as long as this are already in service in the Reactor Vessel Level Indication System at this time in similar process loops (4-wire loops are unaffected by differing lead length). There are no seismic concerns from either MI cable coiling method proposed in this modification. The MI cable weighs .07 pounds per foot (3/16 inch in diameter) and has a secure mounting either in the proposed junction box or unistrut mounting options. The junction box option (12 inches by 12 inches by 6 inches, or smaller) utilizes standard seismic mounting criteria. The MI cable will be coiled in the box accounting for minimum bend radius concerns and will be dust sealed at the entrance and exit locations with Sylgard 170.

PLANT MODIFICATION REQUEST: 02797 Revision: 0 and 1

Title: Lifting Of Residual Heat Removal Heat Exchanger

Description: This modification installs a lifting device for Train "B" Residual Heat Removal (RHR) heat exchanger for gasket replacement when the plant is in Mode 4, Hot Shutdown or Mode 5, Cold Shutdown condition.

Revision 1 to the modification provides for the installation of two removable beams to be bolted to existing hatch beams and a plate to be bolted to the removable beams to allow for lifting of the Train "A" Residual Heat Removal (RHR) heat exchanger shell and tube section as a unit.

Safety Evaluation: The lifting shall be conducted by the installation of two new beams welded to existing hatch beams. The design of the lifting device is prequalified as a safety related structure providing adequate capability against all possible failure modes. Configuration, operation characteristics and structural integrity of the original design have not been affected as a result of adding the lifting beams.

Based on the lack of combustibles in the area and adequate provision for alarm system and portable fire extinguishers in the vicinity, the limited amount of fire proofing material removed for welding of the rigging beams is acceptable and will not jeopardize the capability of the plant to achieve safe shutdown due to a fire.

Component Cooling Water (CCW) side shell lifting shall be limited to the same conditions as the shell and tube section lift.

The lifting of the RHR heat exchanger component creates a potential safety concern in the event of a load drop and requires evaluation. The 16 ton shell and tube section (1 foot lift) creates the potential for damage to the floor slab, and subsequently to interconnected piping adjacent and below in the event of a load drop.

The potential hazards which could result from a drop (1 foot lift) of the shell and tube section has been analyzed and is acceptable based on the following administrative limitations:

a) The maximum lift of the shell and tube section is 1 foot.

b) The concrete roof hatch has not been removed and all lifting and lift rigging is conducted within the room. Thus, the Auxiliary Building Heating, Ventilation and Air Conditioning System design, functional and operating requirements have not been adversely affected.

c) CCW isolation valves (EG HV-102 and EJ V-038) to the heat exchanger are closed.

d) RHR Trains "A" and "B" cross-connection valves (EJ 8716B and EJ V-002) are isolated and the separation of Emergency Core Cooling System (ECCS) trains is maintained.

e) The required Steam Generator(s) secondary side water levels are satisfied per the requirements of Technical Specifications.

f) RHR letdown to the Chemical Volume and Control System (CVCS) is either isolated while the shell and tube bundle are lifted, or, administrative controls are in place such that letdown can be isolated upon indication of load drop.

PLANT MODIFICATION REQUEST: 02802 Revision: 0

Title: Issuance Of Equipment Qualification Summary Document

Description: This modification package provides for the initial release of the Wolf Creek Generating Station (WCGS) Equipment Qualification Summary Document (EQSD). Development of the EQSD resulted in a substantial number of revisions to the USAR, specifically to USAR Tables 3.11(B)-1, 3.11(B)-2 and 3.11(B)-3. A USAR change has been initiated.

Safety Evaluation: None of the changes made to USAR Table 3.11(B)-2 and Table 3.11(B)-3 involve actual physical configuration changes to any WCGS system or component. The vast majority of the changes are of an editorial nature. All components added to USAR Table 3.11(B)-3 and all components whose NUREG-0588, Appendix E category was changed resulting in a harsh (Category A or B) EQ environment were qualified as of November 30, 1985, and no qualification contingencies have been missed. As such, no equipment operability questions are raised by this USAR change.

PLANT MODIFICATION REQUEST: 02804 Revision: 1

Title: As-Built Condition Of Instrument Air Pipe End

Description: This modification revises the applicable drawings to reflect the as-built condition of the pipe end downstream of the Reactor Building instrument air supply to hydrogen control isolation valve, KA HV-030 which has internal pipe threads. The drawings show this pipe end as a plain end. Evaluation of the pipe end condition concluded that the condition is not detrimental to the system and is acceptable to use-as-is as long as the pipe end remains open at all times.

Safety Evaluation: Description: The design basis function of valve KA HV-030 is to supply make-up air to Containment for dilution of combustible gases under post-Loss Of Coolant Accident conditions. A note will be added to the drawings to clarify that the subject pipe end shall remain open at all times to ensure that no plug is inserted and the design basis function of valve KA HV-030 is not jeopardized. Therefore, the possibility or consequence of a previously evaluated accident is not increased, the possibility of a new or different type of accident is not created and the probability or consequences of malfunctions of any equipment will not result.

PLANT MODIFICATION REQUEST: 02814 Revision: 1

Title: Floor Slab Penetration Closure

Description: This modification seals the existing 1 1/4-inch diameter core drill penetration in the 2047 elevation floor slab of the Auxiliary Building for existing 3/4-inch diameter electrical conduit. This modification also revises the appropriate drawings to show the as-built condition.

Safety Evaluation: The penetration seal to maintain the fire barrier and the drawing revisions to reflect the as-built condition resulting from this modification do not affect any margin of safety as defined in the bases for any Technical Specification. Fire Barrier Penetrations, Technical Specification Section 3/4.7.11, has been deleted entirely and no other section applies to this change.

The probability of occurrence of an accident previously evaluated in the USAR will not be increased since this change will maintain the existing fire barrier and floor slab integrity. The consequences of an accident previously evaluated in the USAR will not be increased since the change will not reduce the structural or fire barrier integrity of the Auxiliary Building floor slab. There is no possibility that an accident of a different type from any evaluated previously in the USAR may be created since the change will not adversely affect the structural integrity or the performance of the fire barrier involved with this work. The probability of occurrence of malfunctions of equipment important to safety that have been previously evaluated in the USAR will not be increased, the consequences of a malfunction of equipment important to safety previously evaluated in the USAR will not be increased, and there is no possibility that a malfunction of equipment important to safety may be created of a different type than any evaluated previously in the USAR since this change does not affect the integrity of the floor slab nor the effectiveness of the fire barrier.

PLANT MODIFICATION REQUEST: 02817 Revision: 0

Title: Reconfiguration Of Radiation Monitor Pre-amplifier To Detector Coaxial Jumper

Description: This modification installs a more durable Brand Rex RE59 B/U (solid innerconnector and braided shield) coaxial cable in place of Belden 66 coaxial cable for radiation monitors that require frequent Technical Specification surveillance testing. Technical Specification surveillance testing necessitates frequent removal and reconnection of bayonet connector (BNC) plugs to BNC bulkhead jacks on pre-amplifier boards located in safety related radiation monitors. This frequent removal and reconnection has caused the coaxial cable shield conductors to break at the BNC plugs. This situation causes loop spiking and unwanted Engineered Safety Features equipment actuations. The breakage problem is compounded by the use of Belden 66 coaxial cable with a combination foil/wire braid-type shield. The lack of durability of this shield at the point where it joins the BNC plug contributes to the breakage problem.

This modification also uses a quality 90 degree BNC plug on the pre-amplifier end of the coaxial cable and a straight BNC plug (identical to the one presently used) on the detector end of the coaxial cable. This new coaxial jumper should achieve and more durable product, capable of withstanding the stresses of frequent handling without signal loss.

This modification will be implemented on the safety related monitors on an "as needed" basis as determined by Instrumentation and Control personnel. Non-safety related monitors will be modified with 90 degree elbow BNC adapters or modified as described above (field option) when problems arise.

Safety Evaluation: Use of Brand Rex RE59 B/U coaxial cable for radiation monitors has been analyzed to provide equal or better electrical and physical characteristics compared to Belden 66 coaxial cable. The critical characteristics of the original, straight BNC plug were reviewed and found to be available in a 90 degree, safety related version. This cable and connector together provide an installation which meet the original system design criteria and will solve the shield breakage problems encountered during surveillance testing.

PLANT MODIFICATION REQUEST: 02820 Revision: 0

Title: Containment Sump Level Indicator Scale Modification

Description: This modification eliminates the red tolerance zone and replaces the banded scale on the Containment sump level indicator. The level indicators for the Containment normal and recirculation sumps were supplied with scales that were red banded from 0 to 36 inches. This banding does not correspond to a level that dictates an operator response. The 0 to 36 inches band on these four level indicators could present a confusion factor since the two levels referenced in the Emergency Procedures are both outside this band. New scales will be provided without painted zones so that overlap banding of mylar film can be applied if needed.

Additionally, the zero level point on the instrument does not correspond to a zero sump level. The sensor offset results in an actual level six inches above the indicated level. This offset occurs throughout the usable range of the instrument. Due to the design of the sump level sensors and mounting bracket, approximately six inches of level must be present before the level sensor float begins to move. The level loops are calibrated so that zero level is indicated when the float is at the bottom stop (six inches above the bottom of the sump). Maximum level is indicated when the float is at the upper stop. This results in the actual level being six inches higher in the sump than indicated on the level indicator. Since the purpose of the instrumentation is to provide sump level indication when higher than normal water levels are present, the additional height of the instruments does not adversely affect the design function of the instrumentation and all level sensors are acceptable as installed. However, the indicators' scales require changing such that indicated level represents actual level from the bottom of the sump.

Safety Evaluation: As stated in the USAR, the Containment sump level instrumentation provides early indication of a potential flood condition and therefore serves to protect all safety related equipment in Containment. The scale modifications made per this modification will enhance the function of the sump level instrumentation. The level indicated will be referenced to the bottom of the sump rather than from the bottom of the element travel. In addition, the possible confusion caused by the 0 to 36 inches red tolerance zone will be removed along with the inappropriately banded scale. The scale change does not adversely affect the physical or operative characteristics of the indicators.

PLANT MODIFICATION REQUEST: 02827 Revision: 3 through 6

Title: Incorporation Of Carrier Instruction Manual

Description: This modification addresses condenser tube plugging which may be required as a result of Eddy Current Service Vendor checks of the Control Room air conditioning (A/C) units, SGK04A and 4B, and the Class 1E Equipment A/C units, SGK05A and 5B condenser tubes. This modification also incorporates Carrier Corporation's Service Instructions for the affected condensers upon modification package (PMR) close-out.

Revision 3 to this modification changes the category of the PMR to a category 1A PMR. Revision 3 also provides a use-as-is disposition for several areas of pitting found during the inspection of the tube sheets on SGK04A and SGK05A. The deepest pit was measured on SGK04A with dimensions of 3/8-inch deep by 1/2-inch wide by 3/4-inch long. To reduce or prevent further corrosion/pitting of the tube sheets, a protective coating of Belzona is being applied to the tube sheets on both the inlet and outlet sides of units SGK04A and SGK05A.

Revision 4 to this modification provides a use-as-is disposition for a failed plug weld on the western most tube support plate of the condenser for SGK05A.

Revision 5 to this PMR approves drilling a 1/16-inch diameter hole in the seal clip for securing the seal wire using approved applicable Wolf Creek Nuclear Operating Corporation (WCNOC) procedure. Per original design, the two seal clip legs are spot welded to the seal cap on the pressure relief valve for SGK05A. One of these two spot welds has broken. The seal wire originally secured between the two legs has therefore, become loose.

Revision 6 to this PMR allows for the hand honing of the inside diameter of the sub-cooler tube holes on SGK04B. During tube removal, the sub-cooler assembly shifted, blocking the holes in the west end of the tube sheet. The hand honing will be just that amount which allows for tube clearance and complete tube installation.

Safety Evaluation: The 3/8-inch deep pit does not violate the minimum design thickness of the tube sheets.

No credit is taken for enhancing the pressure and/or structural integrity of the tube sheets, by the application of the Belzona coating, and that this coating is being utilized only to extend the life of the tube sheets. The application of this coating will not degrade the performance or the safety design function of the condensers when properly applied (i.e., no impact on any of the safety related functions of the condenser units or on the Essential Service Water System).

Engineering has also determined that failure of the Belzona coating will not impact the safety design function of the condensers. If failure occurs, the Belzona coatings being used for repair of the tube sheets tends to break off into small pieces. These pieces are small enough to pass through the Essential Service Water System without getting lodged in downstream heat exchanger tubes, isolation valves, throttling valves or piping fittings/obstructions.

PLANT MODIFICATION REQUEST: 02827 Revision: 3 through 6

Safety Evaluation: Continued

A conservative analysis has been performed, which demonstrates that even with a failed plug weld on one of the tube support plates, the condenser's structural integrity would not be jeopardized during a seismic event. The tube support plate does not provide any sort of ASME pressure boundary, and as such the failed plug weld does not impact the pressure boundary. More than sufficient condenser minimum wall has been measured by non-destructive examination methods. In addition, upon further inspection, the point of weld failure has not manifested itself in any internal diameter indications extending from the weld root. As a measure to facilitate new tube installation, the tube support plates are to be reamed within existing design dimensions provided by the condenser manufacturer (Carrier). This reaming of the tube support plates within established tolerances has no impact on the existing design.

The purpose of the seal clip is to prevent changing the valve set point adjustment without breaking the seal. The PMR does not affect this basic purpose of the seal.

The sub-cooler assembly does not provide any sort of ASME pressure boundary. The overall design/function of the SGK04B unit will not be impacted by the honing of the tube holes.

PLANT MODIFICATION REQUEST: 02828 Revision: 0

Title: Rebuilding Of Main Steam And Feedwater Isolation Valve Hydraulic Actuators

Description: This modification incorporates into the appropriate manuals the information provided by the vendor necessary to complete the rebuilding of the hydraulic actuators for the Main Steam Isolation Valves (MSIV) and the Feedwater Isolation Valves (FWIV). This modification provides a revision to the air reservoir tie rods torque value. The modification also provides for the removal of the spring in the cartridge hydraulic check valves for the accumulators (parts of the actuator), in the hydraulic piping of the actuator. In addition, this modification identifies the lubricants for the hydraulic system (actuator seals, backup rings, etc.) and the 4-way valve end cap bores and pistons.

Safety Evaluation: The removal of the spring does not hinder check valve operation because these check valves use the flow of fluid to operate and do not require the spring for operation. These changes do not hinder or impact the operation of the individual component or the actuator to perform its safety related function.

PLANT MODIFICATION REQUEST: 02829 Revision: 0

Title: Diesel Generator Lube Oil Strainer Vent Additions

Description: This modification installs high point vent valves in the 3/8-inch vent tubing of each of the Diesel Generator main lube oil strainers (FKJ08A/B). The vents shall be the typical vent assembly (pipe tee to 3/8-inch tubing, valve, and cap) teed into the existing 1/4-inch vent piping. In order to avoid creating a midspan concentrated weight in the existing tubing, the teed vent connection shall be located just above each strainer between the 1/2-inch pipe 90 degree elbow and the 1/4-inch pipe union/coupling. The vent shall be oriented above the horizontal plane and have a maximum assembly length of 8 inches (tee center line to end of cap dimension). An in-service leak check/verification shall be performed for inspection of the mechanical and welded joints in the new assemblies.

The addition of these high point vent connections will allow air to be extracted from the system during the in-service strainer switching process, thus decreasing or eliminating the possibility of Diesel Generator trip due to false (air-induced) low oil pressure indications. Moreover, the disassembly/reassembly of related tubing components will no longer be required or necessary, thus decreasing the amount of time personnel are exposed to a potentially hazardous environment while the engines are in operation.

Safety Evaluation: This modification does not alter the design function of the system. However, the configuration has been changed to enhance the system design for reliability and convenience.

The increased weight of the valves on the system is considered insignificant (less than 2 pounds) due to the small magnitude of weight of the vent assemblies and the placement of the connections in the existing tubing systems. In addition, the low access location of these vent assemblies reduces the possibility of accidental personnel induced damage.

The vent additions are enhancements to the Diesel Generator main lube oil strainer systems which provide not only increased safety for personnel, but also a decreased potential for Diesel Generator trip due to false, air-induced low lube oil pressure indications.

PLANT MODIFICATION REQUEST: 02832 Revision: 0
ENGINEERING EVALUATION REQUEST DISPOSITION: 89-BB-02 Revision: 0

Title: Reactor Coolant Pump Underfrequency Relay

Description: This modification allows the temporary use of a replacement capacitor on the Reactor Coolant Pump (RCP) "A" underfrequency relay power supply module. The manufacturer of the original capacitor was Sprague and the manufacturer of the replacement capacitor is IEC. These capacitors are commercially available standard electronic components.

Safety Evaluation: The original capacitor and replacement capacitor are both 100 microfarad, 50-volt electrolytic capacitors and are functionally equivalent. The Reactor Trip on RCP underfrequency function is provided to trip the Reactor on an underfrequency condition resulting from frequency disturbances on the power grid. The underfrequency trip is not required for grid decay rates up to 5 hertz per second. Grid stability and transient analysis for Wolf Creek show maximum grid decay rates of less than 5 hertz per second. Therefore, the RCP underfrequency trip is not a safety function in the Wolf Creek Generating Station design.

PLANT MODIFICATION REQUEST: 02842 Revision: 0

Title: Air Lock Shaft Seal Modification

Description: This modification installs a Swagelok male connector and Swagelok plug to the test port on the shaft seal assembly for the Containment Personnel Hatch and the Auxiliary Access Hatch. There are four seal assemblies on each hatch. This modification prevents potential damage to the internal threads of the test port on the seal assembly while maintaining the cleanliness and the leak tightness of the seal interspace.

Safety Evaluation: The seismic qualification and operating characteristics of the subject hatches are not compromised or affected in any manner.

Therefore, the probability of occurrence and consequences of an accident previously evaluated in the USAR will not be increased. The possibility of an accident of a different type from any previously evaluated is not created. The probability of occurrence and consequences of malfunctions of equipment important to safety previously evaluated is not increased. There is no possibility that a malfunction of equipment important to safety may be created of a different type than any previously evaluated.

This design change will not result in a reduction in the margin of safety as defined in basis for any Technical Specification.

PLANT MODIFICATION REQUEST: 02843 Revision: 0

Title: Continuous Ventlines Replacement

Description: This modification package approves a change of piping material from carbon steel to stainless steel for the replacement of the continuous ventlines from high pressure heaters 6A/B and 7A/B to the condenser. This replacement is being made to provide more resistance to erosion/corrosion and is scheduled to be incorporated during Refuel 4 (1990). Pipe-wall thickness data obtained during Refuel 3 (1988) indicated abnormal erosion/corrosion with ten replacements, like-for-like carbon steel, required during Refuel 3 with numerous other replacements forecasted for Refuel 4.

This modification also approves utilization of initial leak testing per ANSI/ASME B31.1 instead of hydrostatic testing of new piping upstream of 1 1/2-inch isolation valves AF V-0401, AF V-0402, AF V-0405, AF V-0406 and downstream of 2 1/2-inch isolation valves AD V-0256 and AD V-0257.

Safety Evaluation: Probability for failure of subject ventlines is not increased upon replacement of carbon steel piping with 304-Type stainless steel material. Consequences of any piping failure are not increased since only piping material is changed -- piping layout and internal fluid parameters are not altered. Piping configuration remains the same. Subject piping is non-safety related and is located in the Turbine Building. Technical Specifications do not relate to any margin of safety pertinent to subject ventlines.

PLANT MODIFICATION REQUEST: 02846 Revision: 0

Title: Main Steam Line Drain Valve Close Setpoint

Description: The components affected by implementation of this modification are the Main Steam low setpoint bistables (AB LSL-7, 8, 9, and 10). Their setpoints are being raised to ensure the drain valves close automatically before the condensate is completely drained from the drip leg. Condensate in the Main Steam lines between the Steam Generators and the Main Steam isolation valves collects in drip legs at a low point in each Main Steam line. The level in each drip leg is sensed by a differential pressure transmitter, whose output is monitored by a comparator (bistable) which opens a drain valve when the level reaches a high setpoint and drains the condensate to the condenser. When the level decreases to a low setpoint, a second bistable closes the valve. The drain valves can also be manually opened and closed by means of handswitches on the main control board.

Turbulence in the drip leg induced by Main Steam flow causes the level transmitter to indicate higher than actual level. With the condensate completely drained from the drip leg, the transmitter output is still above the low setpoint, the drain valve remains open and Main Steam is blown directly to the condenser.

Safety Evaluation: The safety function of the bistables and drain valves is to close to prevent loss of steam which must be available for the turbine driven auxiliary feedwater pump. Also, the drain valves will close on a Main Steam line isolation signal regardless of drip leg level.

This modification will not adversely affect the safety function of any system, and will improve the operability of the Main Steam line drain system by ensuring the drain valves return to their closed (fail-safe) position after condensate has been drained from the drip leg.

PLANT MODIFICATION REQUEST: 02847 Revision: 0

Title: Containment Spray Pump Minimum Flow

Description: This modification revised the vendor manual and drawings for the Containment spray pump minimum flow. The Containment spray pump minimum flow was changed to 100 gallons per minute.

Safety Evaluation: This change is a document change only. No physical plant changes are required. Probability of occurrence of an accident will not change.

This change will only increase the reliability of the Containment spray pumps. No reduction in the margin of safety will occur. The intent of this change is to reduce the probability of occurrence of malfunctions of these pumps. By keeping the minimum flow at an increased level, the potential for pump damage is decreased. The consequences of an accident will not change.

This change affects only the Containment spray pumps. There are no effects on any other systems or components due to this change.

PLANT MODIFICATION REQUEST: 02848 Revision: 0

Title: Fifth Stage Extraction Pipelines Replacement

Description: This modification package approves generic changes of pipe material from A106-B carbon steel to A335 P22 (2 1/4 chrome-moly alloy steel which is more resistant to erosion/corrosion) for the replacement of vertical pipe sections immediately downstream of the high pressure turbine fifth stage extraction nozzles if replacement is required. Pipe-wall thickness data obtained during Refuel 3 (1988) indicated abnormal erosion/corrosion although the observed erosion/corrosion rate allowed continued service at least through to Refuel 4 (1990). Therefore, the Refuel 3 disposition allowed for use-as-is with subsequent re-examination during Refuel 4.

Evaluation shows that allowable stress and thermal coefficient-of-expansion values are the same for these two materials at design/operating temperatures and that the small difference in modulus-of-elasticity values has insignificant effect on piping stresses.

Safety Evaluation: Probability for failure of subject pipe sections is not increased upon replacement of A106-B carbon steel material with P22 low-alloy steel material. Consequences of any pipe failure are not increased since only pipe material is changed. The piping layout/support and internal fluid parameters are not altered. Piping configuration remains the same. The subject piping is non-safety related and is located in the Turbine Building. Technical Specifications do not relate to any margin of safety pertinent to subject piping.

PLANT MODIFICATION REQUEST: 02860 Revision: 0

Title: Demineralized Water Degasifier Pump Modifications

Description: The Demineralized Water Storage and Transfer System (DWSTS) expansion joints installed in the degasifier vacuum pumps' discharge have been replaced with carbon steel pipe. The original expansion joints were causing vibration to be transmitted to the vacuum pumps' oil separator tank/oil mist eliminator interconnecting piping, causing premature metal fatigue. The "hard piping" arrangement as installed, has been found acceptable: the amount of vibration appears to be negligible during normal operation and the piping configuration is flexible enough to handle momentary upsets caused by startup or shutdown of the vacuum pumps. Additionally, this modification allows re-routing each vacuum pump oil mist eliminator drain line to tee-in downstream of the oil separator drain solenoid valve.

Safety Evaluation: The DWSTS serves no safety function and has no safety design basis. This system does supply Reactor Makeup Water. The degasifier is designed to remove oxygen to meet the required Technical Specification (T/S) Reactor Coolant chemistry limits (reference T/S 3/4.4.7 - dissolved oxygen is to be less than or equal to 0.1 parts per million or 100 parts per billion). The degasifier vacuum pumps provide the vacuum necessary to lower the absolute pressure in the degasifier tower where it is below oxygen's partial pressure in water. Thus, oxygen (and other non-condensible gases such as carbon dioxide) are "stripped" out the demineralized water before transfer to the Reactor Makeup Water storage tank.

The elimination of the expansion joint will lessen downtime of the vacuum pumps due to metal fatiguing of the interconnecting piping between the oil separator and the oil mist eliminator on the vacuum pump discharge. The re-routing of vacuum pump oil mist eliminator drain to bypass the oil separator solenoid valve is expected to improve operability of the unit.

PLANT MODIFICATION REQUEST: 02862 Revision: 0

Title: Security System Modem Board Upgrade

Description: This Plant Modification Request (PMR) allows modification to the originally supplied modem board for the Security System to provide stability of operation and isolation from other modem boards in the multiplexer loop. The PMR allows for the purchase of new, modified modem boards as well as the parts necessary to modify the existing modem boards. The modification adds two resistors and a capacitor to each modem board. Mixed operation with both modified and unmodified modem boards is not permitted. The applicable documentation will also be modified for use of the new modem boards exclusively. (Design and construction related to the Security System are not special scope. However, the procedures governing safeguards are special scope.)

Safety Evaluation: The Security System multiplexer modem boards are not safety related and do not connect to or affect the design or operation of any safety related or special scope system, component or structure. The modifications to the modem board create no spatial or system interaction that could affect safety related equipment or create the possibility of an accident different from that which has already been evaluated in the USAR. The modification to the modem boards do not affect any safety related or special scope system, component or structure.

PLANT MODIFICATION REQUEST: 02869 Revision: 0

Title: Replacement Of Lock Mechanisms On Security Gates

Description: This modification removes the solenoids which operate the electric gate strike mechanisms because the solenoids frequently fail (burn out) thus preventing ingress/egress. This modification affects Security Gates 3, 5 and 8. The electric strike mechanism and gate position alarm are to be replaced by a mechanical gate lock. The applicable drawings are to be changed to reflect the lock mechanism replacement as well. Additional details of this modification are considered Safeguards Information.

Safety Evaluation: Security Gates 3, 5 and 8 are not safety related and do not connect to, or affect the operation of any safety related system, structure or component. Therefore, there is no increase in the probability of occurrence of an accident previously evaluated in the USAR by the replacement of the lock mechanism and gate position alarm with a mechanical gate lock. The installation of manual gate locks for Security Gates 3, 5 and 8, located on the Perimeter Area Boundary, does not affect the design and operation of safety related systems, components or structures. The change out of the electric lock mechanism with a mechanical gate lock for Security Gates 3, 5 and 8 has no spatial or system interaction that could affect the safety related equipment or create the possibility of an accident different from that which has already been evaluated in the USAR.

The installation of mechanical gate locks on Security Gates 3, 5 and 8 do not affect the operation of safety related or special scope equipment. The probability of this equipment malfunctioning as evaluated in the USAR is not increased. The replacement of the electric lock mechanism and gate position alarm with a mechanical gate lock on Security Gates 3, 5 and 8 do not affect safety related or special scope equipment, therefore the consequences of malfunctions which have already been evaluated in the USAR are not increased. The installation of mechanical gate locks on Security Gates 3, 5 and 8 are not safety related and do not connect to, or affect the operation of safety related or special scope equipment, components or structures. Therefore, there is no probability that a malfunction will be created which is of a different type than already evaluated in the USAR. The modification to replace the electric lock mechanism and position alarm with a mechanical gate lock does not result in a reduction in the margin of safety as defined in the design bases in the Technical Specifications.

PLANT MODIFICATION REQUEST: 02872 Revision: 0

Title: Control Room Foyer Telephone

Description: This modification permanently installs a telephone in the Control Room foyer and revises design drawings as appropriate. The telephone in the Control Room foyer was initially installed as a temporary modification.

Safety Evaluation: The Communication System at Wolf Creek includes internal (in-plant) and external systems designed to provide convenient and effective communication among various plant locations and between the plant and locations external to the plant. The Communication System is made up of the telephone, public address, maintenance jack, and evacuation alarm subsystems. Each of these subsystems is routed in separate conduit. The Communication System has no safety related design function. With the installation of the Control Room foyer telephone the probability of occurrence of an accident previously evaluated in the USAR will not be increased; the consequences of an accident previously evaluated in the USAR will not be increased and an accident of a different type from any previously evaluated in the USAR has not been created. In addition, the probability of occurrence of malfunctions of equipment important to safety previously evaluated in the USAR has not been increased, the consequences of malfunctions of equipment important to safety previously evaluated in the USAR has not been increased, and a malfunction of equipment important to safety of a different type has not been created. The design change does not affect the bases for any Technical Specification and hence will not result in the reduction of margin of safety for any Technical Specification.

PLANT MODIFICATION REQUEST: 02875 Revision: 0

Title: Instrument Air Modification

Description: This modification installs the Instrument Air System connections for the Reactor Building Instrument Air supply outside Containment isolation valve KA FV-29 and the Containment normal sump flow control valve LF FV-96, and adds an additional connection. The additional connection, downstream of the Instrument Air header to Reactor Building drain valve KA V-277, is for convenience in performing Local Leak Rate Testing (LLRT) of penetration P-30. The modification adds branch line isolation valves to two of the four connections per the existing standards. The branch line isolation valves and air source connection are outside of the safety related boundary for penetration P-30.

Safety Evaluation: The modified portions of the Instrument Air System piping do not affect the safety design bases described in USAR Section 9.3.1. LF FV-96 and KA FV-29 are safety related pneumatically operated valves as described in USAR Table 9.3-2. These valves are designed to fail in the safe position following loss of air supply. The piping involved in this modification is non-seismic and not safety related. This modification does not impact or cause any II/I concern.

This modification does not impact any safety related function of valves LF FV-96 and KA FV-29.

PLANT MODIFICATION REQUEST: 02879 Revision: 0

Title: Sump Level Instrumentation

Description: This modification changes the scales on the Class 1E sump level instrumentation such that actual sump level, measured from the bottom of the sump, can be read without any conversion. This modification also recommends a corresponding change to the banding used on main control board sump level indicators. Class 1E sump level instrumentation permits detection of water accumulation which could affect the operation of safety related equipment. Due to the physical design and installation requirements of the level sensors, the level indicated was less than the actual level present, if sump level was assumed to be measured from the bottom of the sump. By reviewing sensor installation drawings, the actual level could be determined relative to the indicated level.

Safety Evaluation: This change enhances the function of the sump level instrumentation by providing level reading which is more easily interpreted by the operators. Changing the scales does not adversely affect the physical or operating characteristics of the indicators.

PLANT MODIFICATION REQUEST: 02887 Revision: 0

Title: Containment Hydrogen Control System Catalyst Replacement Procedure

Description: The technical manual for the Hydrogen Analyzer does not allow field replacement of the catalyst bed assembly. Since the issuance of the technical manual, a procedure which allows for field replacement of the catalyst bed assembly by Wolf Creek Nuclear Operating Corporation technicians has been obtained from Comsip-Delphi Systems Division. The procedure is applicable to Wolf Creek's Hydrogen Analyzer, model K-III. This modification is to approve the use of the procedure and revise documentation as necessary. This modification also allows for administrative changes to the procedure, making the procedure site specific without compromising the technical details of the Comsip-Delphi Systems Division procedure.

Safety Evaluation: The use of this procedure to replace the catalyst bed assembly will not increase accident and safety related equipment malfunction probabilities previously evaluated in the USAR. Accident and safety related equipment malfunction consequences previously evaluated in the USAR will not be increased as a result of this modification. Accident and safety related equipment malfunction possibilities of a different type than those evaluated in the USAR will not be created by this modification. Technical specification safety margins will remain unaffected by this modification.

PLANT MODIFICATION REQUEST: 02890 Revision: 0

Title: Control Building Air Conditioning Units Modification

Description: This modification installs stainless steel pipe and fitting immediately off the Control Room air conditioning units (SGK04A and SGK04B) and the Class 1E Electrical Equipment air conditioning units (SGK05A and SGK05B) condenser head vents and drains to avoid galvanic corrosion at the interface between the carbon steel pipe and the condensers' copper/nickel heads. In addition, this modification installs flanges in the Essential Service Water System (ESW) supply line or discharge line to the Control Room and Class 1E Electrical Equipment air conditioning condenser units to facilitate condenser tube bundle removal.

Safety Evaluation: The Control Room air conditioning units and the Class 1E Electrical Equipment air conditioning units are seismically designed. Both of the above modifications are within the seismic portions of the system boundaries. The modification for the material type change has been analyzed and has been found to have no impact to the seismic analysis.

The stresses for the installation of flanges to facilitate condenser tube bundle removal were reviewed and the addition of the flanges maintained the stresses below allowable limits for normal and seismic condition and nozzle loads on the condensers.

There is no impact on any Wolf Creek Generating Station (WCGS) Technical Specification or associated design bases.

Based on the above, the probability of occurrence on the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any WCGS Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: 02893 Revision: 0

Title: Vents And Drains On Room Coolers

Description: Because of the potential for corrosion of carbon steel stubs for vents and drains of safety related room coolers, this modification provides for the change out of the carbon steel stub and piping/fittings to stainless steel. The stainless steel will provide significantly less potential difference for galvanic corrosion than the carbon steel.

This modification includes vents and drains of SGL09A and SGL09B, the Safety Injection pump room coolers, SGL10A and SGL10B, the Residual Heat Removal pump room coolers, SGL11A and SGL11B, the Component Cooling Water pump room coolers, SGL12A and SGL12B, the Centrifugal Charging pump room coolers, SGL13A and SGL13B, the Containment Spray pump room coolers, SGL15A AND SGL15B, the Electrical Penetration room coolers, SGG04A AND SGG04B, the Spent Fuel Pool pump room coolers, and SGF02A and SGF02B, the Auxiliary Feedwater pump room coolers.

Safety Evaluation: The Technical Specification 2/4.7.12, Area Temperature Monitoring, is not impacted by the change in drain and vent component material. In addition, Technical Specification 3/4.7.4, Essential Service Water System, is not impacted by the material change. There is no impact to any of the systems that contain the above mentioned room coolers by the subject modification.

Based on the above, the probability of occurrence or the consequences of an accident of malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: 02896 Revision: 0

Title: Fire Extinguisher Manuals Update

Description: This modification updates the appropriate instruction manuals to reflect changes in model numbers for two of the fire extinguisher models used at Wolf Creek Generating Station. The model number changes reflect a Class B and Class C fire rating upgrade by Underwriter Laboratories.

Safety Evaluation: Since the fire ratings were upgraded for these fire extinguishers, they exceed the minimum requirements as specified. Therefore, accident and safety related equipment malfunction probabilities and consequences previously evaluated in the USAR will not be increased; accident and safety related equipment malfunction possibilities of a different type than those evaluated in the USAR will not be created; and Technical Specification safety margins will remain unaffected.

PLANT MODIFICATION REQUEST: 02897 Revision: 0

Title: Storage Cage In Communication Corridor

Description: This modification revises the affected drawings and documents to permanently incorporate into plant design the wire mesh storage cage located on Communication Corridor elevation 2061 that was originally installed as a temporary modification. This modification does not require any field work.

Safety Evaluation: Addition of a metal tool storage cage will not create the possibility of a different type of accident because of its location. There is no safety related or special scope equipment in the vicinity. This modification will not have any impact on safety related or special scope systems, structures or components. As a result, the margin of safety as defined in the basis of any Wolf Creek Generating Station Technical Specification is not reduced.

Addition of a metal tool storage cage in the Communication Corridor is not a contributing factor in any accident evaluation. As a result, the probability of occurrence of an accident previously evaluated in the USAR will not increase and the consequences of an accident previously evaluated in the USAR will not be increased.

No modification is being performed to any equipment. As a result the probability of the occurrence of malfunction of equipment important to safety previously evaluated in the USAR is not increased and the consequences of a malfunction of equipment important to safety previously evaluated in the USAR is not increased.

PLANT MODIFICATION REQUEST: 02898 Revision: 0

Title: Supply Valve Identification

Description: This modification provides component identification numbers to the existing safety related Compressed Air/gas supply line check valves associated with the Auxiliary Feedwater control valves (AL HV-6, -8, -10 and 12) and Main Steam atmospheric relief valves (AB PV-1, -2, -3 and -4). The component numbers are required to facilitate identification of these check valves for testing.

The modification pertains only to the valve identification number addition. This is the only portion of the design document which makes changes in the facility as described in the safety analysis report. The check valve part number revision in the vendor instruction manual is to reflect the correct part number in the existing spare parts list. The part number revision does not alter the design, function or operation of any component, system or structure.

Safety Evaluation: This modification does not alter the design, function or operation of any component, system or structure. Therefore, the design bases described in USAR Sections 9.3.1 (Compressed Air System), 10.3.1 (Main Steam Supply System) and 10.4.9 (Auxiliary Feedwater System) are not affected by this modification.

The only change to the USAR is to revise Figures 10.3-1 and 10.4-9 to reflect the above described valve identification numbers.

Since the subject modification does not alter the design, function or operation of any system, component or structure, no equipment malfunctions can result and no accidents are affected or created.

The provision of valve identification number has no affect on any Wolf Creek Generating Station Technical Specification or bases.

PLANT MODIFICATION REQUEST: 02899 Revision: 0

Title: Main Turbine Stop Valve Position Switch Replacement

Description: This modification provides for the replacement of Main Turbine Stop Valve position switches AC ZS-0043C, AC ZS-0044C, AC ZS-0045C, and AC ZS-0046C. These position switches provide input to the Reactor Protection System. This input is one of two separate and distinct control variables used to initiate a Reactor trip on turbine trip.

Safety Evaluation: As described in Section 7.2.1.1.2.F of the USAR, these components must conform to the requirements of IEEE 279-1971 "Criteria for Protection Systems for Nuclear Power Generating Stations" and must be environmentally qualified. However, these components need not meet seismic criteria for mounting and location since they are located within a non-seismic Category I structure. The replacement switches have been qualified to an environment which envelopes the environment for this application and are the same in form, fit and function as the originally supplied switches. These replacement switches conform to the requirements of IEEE 279-1971 and all of the applicable requirements of the original purchase specification.

PLANT MODIFICATION REQUEST: 02910 Revision: 0

Title: Auxiliary Feedwater Pump Monorail

Description: This modification addresses the discrepancies found on various drawings regarding the capacity of the Auxiliary Feedwater Pump monorail rigging beams KHF11A, HKF11B and HKF11C. The drawings show various capacities, ranging from two to four tons. For documentation purposes and safety reasons, the capacity of the monorails are being revised to match the capacity of the hoist. Changes to the applicable drawings are required to avoid confusion and misuse.

Safety Evaluation: This document modification does not change the function of the subject rigging beams and does not affect the operation, structural integrity or reliability of the hoists.

PLANT MODIFICATION REQUEST: 02927 Revision: 0

Title: Replacement Of Fire Protection System Piping And Fittings

Description: This modification provides for the installation of Schedule 40 pipe in lieu of the existing Schedule 10 Victaulic piping and fittings for the Fire Protection System. This modification involves Fire Protection System components classified as Special Scope. The piping being replaced includes the 8, 10, and 12-inch lines inside the Circulating Water Screenhouse. This modification is the result of the recent identification of a pinhole in Fire Protection System pipe 1FP03AA12 and the subsequent failed flaw detection examination of additional Fire Protection System piping spools.

In addition, the Fire Protection System test header is to be rerouted such that the line ties into the cross-connect line and runs/discharges outside the northeast corner of the Circulating Water Screenhouse. The fire truck connection header routing back to the cross-connect line is to be rerouted to the 12-inch main header, close to where the main header goes to the underground piping.

Safety Evaluation: The Fire Protection System test header is being rerouted to provide a more convenient testing location. The test header design intent has not changed. The three 2 1/2-inch fire truck connections header is being rerouted such that the header ties directly into one of the 12-inch headers. The design intent of the fire truck connections header is not changed by this modification.

PLANT MODIFICATION REQUEST: 02931 Revision: 0

Title: Secondary Perimeter Fence

Description: This modification installs a secondary perimeter fence as an enhancement to the Security System. The details of this modification are considered Safeguards Information.

Safety Evaluation: The probability of occurrence of an accident previously evaluated in the USAR is not increased because the installation of the secondary perimeter fence is not safety related and does not connect to or affect the operation of any safety related equipment, components or structures. No spatial or system interaction that could affect safety related equipment, components or structures will be created by the installation of the secondary perimeter fence. The secondary perimeter fence will not affect the margin of safety as defined in the bases for any Technical Specification.

PLANT MODIFICATION REQUEST: 02932 Revision: 0

Title: Instrument Snubber Installation

Description: This modification provides for the installation of instrument snubbers to the high and low connections of the pressure differential transmitters to avoid unnecessary alarm actuations created from pressure surges produced when starting Emergency Fuel Oil transfer pumps PJE01A and PJE01B.

Safety Evaluation: Failure of these snubbers will not degrade the safety function of the Emergency Fuel Oil System. These pressure differential transmitters are the Control Room indicators for the fuel oil strainers. Snubber failure could result in indication of a strainer problem which could be confirmed by the redundant local pressure indicators. Therefore, failure of these items would not disrupt the intended safety related function that the Emergency Fuel Oil System provides for the Emergency Diesel Generators.

PLANT MODIFICATION REQUEST: 02959 Revision: 0

Title: Fire Protection Valve Manhole Cover Replacement

Description: This modification replaces the existing cast iron covers with cast aluminum for the twelve Fire Protection isolation valves that are located in manholes. This modification will improve the accessibility to the isolation valves because the cast aluminum covers will weigh approximately one third of the existing covers.

Safety Evaluation: The new, lighter weight Fire Protection isolation valve manhole covers will improve the accessibility to the valves. The consequences of a malfunction of equipment important to safety, the probability of occurrence of an accident, or the consequences of an accident previously evaluated in the USAR will not be increased.

The probability of occurrence of malfunctions of equipment important to safety previously evaluated in the USAR will not be increased since the substitution of manhole cover materials from cast iron to aluminum does not adversely affect any of the design or function capabilities of the Fire Protection System. There is no possibility that a malfunction of equipment important to safety may be created of a different type than any evaluated previously in the USAR due to the substitution of cover materials.

The substitution of manhole cover materials to improve accessibility will not result in a reduction in the margin of safety as defined in the bases for any Technical Specification.

The possibility that an accident of a different type from any evaluated previously in the USAR will not be created since this change does not affect the design, installation or functional capabilities of the Fire protection water supply or valves.

PLANT MODIFICATION REQUEST: 02961 Revision: 0

Title: Control Room Rebalance

Description: This modification replaces an orifice plate in the Control Building Heating, Ventilation and Air Conditioning (HVAC) System to rebalance the air distribution system by reducing the airflow to the console portion of the Control Room. The 30 inch diameter duct will remain physically open at the section where the orifice plate is being replaced. This condition was not the original design basis.

Safety Evaluation: A calculation was performed to verify the structural integrity of the 30 inch diameter duct and supports during this condition. The calculation concluded that the duct and supports will remain structurally integral during a 0.13G Operating Basis Earthquake and 0.25G Safe Shutdown Earthquake ground motion. Seismicity of system duct work during and after orifice replacement has not been adversely affected since structural integrity of duct and supports are not affected by the work activity.

The Control Room air conditioning system provides a suitable environment during normal and accident conditions for Control Room personnel and equipment. Redistribution of air within the Control Room will not affect any variables associated with previous accident occurrence probability.

The design operating temperature in the Control Room is 78 degrees Fahrenheit with a Technical Specification (T/S) high limit of 84 degrees Fahrenheit. The redistribution of air flow should result in Control Room temperatures of 70 degrees Fahrenheit or below. Thus the margin of safety defined in the T/S will not be reduced.

Changing out the orifice in the common Control Room HVAC duct will not affect the operation of any system dampers, fans, filters or monitors. No increase in equipment important to safety malfunction occurrence will be introduced. Control Room personnel exposure to the consequences of a nuclear or toxic gas accident have not been increased since system detection, isolation, pressurization and filtration are not affected by the implementation of the modification described in the modification.

Changing out the orifice in the duct will not increase the malfunction consequences of a system damper loss or diminishment of forced air flow due to a fan malfunction. Failure of the filtration fan of one train has been evaluated as the worst possible failure in the Control Building HVAC System. Changing out the orifice plate in the common Control Room HVAC duct has been assessed as lacking the potential to create any accident, let alone one as limiting as that already evaluated.

PLANT MODIFICATION REQUEST: 02968 Revision: 0

Title: Moisture Separator Reheater Sample Lines

Description: This modification reroutes the moisture separator reheater (MSR) "A", "B", "C" and "D" drains so that they share a common sample point at the processing sampling station with the heater drain pump discharge rather than the condensate demineralizer outlet. Originally, with the MSR drains sharing the sample point with the condensate demineralizer outlet, the sample did not go through a sampling heat exchanger. However, when the sample is routed with the heater drain pump discharge, the sample is processed through a sample cooler (heat exchanger). The MSR drains require cooling to avoid melting the flow meters in line with the sample process.

Safety Evaluation: The sample station and associated sample points mentioned above serve no safety design bases. The change therefore has no impact to any safety design basis. The subject modification has no impact on any Technical Specification or its associated bases.

PLANT MODIFICATION REQUEST: 02969 Revision: 1 and 2

Title: Control Room Air Conditioning Unit Couplings

Description: This modification was issued to provide a document number to Bahnson drawing included in a vendor manual but not designated as a separate unique supplier control numbered account. Revision 1 to this modification changed the modification package category classification and evaluated the use of an alternate tee on the Control Room air conditioning (A/C) unit, SGK04B. Due to unavailability of the original tee, the modification revision substituted the original tee with a tee and bushing on the copper tubing on SGK04B. Slight tubing alterations may have been necessary to fit the new tee and bushing into tubing configuration where only a tee previously existed.

Revision 2 to this modification provides installation of two copper couplings on SGK04B. The couplings are to be used on the copper tubing routed to the tee changed in Revision 1 of this modification. The affected drawing is to be revised at package close-out.

At package close-out, a note will be added to the affected drawing stating the refrigerant piping lengths tolerances with the general layout of the piping per design, to facilitate refrigerant piping rework. This note will be generic for both Control Room A/C units, SGK04A and B, and both Class 1E Electrical Equipment room A/C units, SGK05A and B.

Safety Evaluation: The Control Building Heating, Ventilation and Air Conditioning (HVAC) Systems consist of the Control Building supply and exhaust systems, the Control Room, Class 1E Electrical Equipment and access control A/C systems, the access control exhaust system, and the counting room recirculation system. A local air handling unit serves the Secondary Alarm Station (SAS) room.

The Control Room A/C System, including the Control Room filtration system, the Control Room pressurization system, and the SAS room air handling unit provide a suitable atmosphere for personnel and equipment within the Control Room.

Section 9.4.1.1.1 of the USAR defines the safety design bases of the Control Building HVAC System. In short, the Control Room A/C System is safety related and is required to function following a Design Basis Accident and to achieve and maintain the plant in a safe shutdown condition.

The modification has no affect on the function, performance, reliability, or failure mode of SGK04B. The tee and bushing perform an equivalent function to the original tee.

Since the system function and performance are unaffected by the modification, the safety functions of the system are also unaffected. The seismic qualification of the unit is also unaffected by this modification.

The modification is minor and has no affect on the function, performance, reliability or failure mode of the Control Building HVAC System. None of the safety functions of the system are affected, hence, an unreviewed safety question does not exist.

PLANT MODIFICATION REQUEST: 02976 Revision: 1 through 3

Title: Third Post-Tensioning System Inspection

Description: This modification package provides administrative controls for the performance of the third Containment Post-Tensioning System Inspection and releases Specification C-158, Revision 6 which has incorporated Technical Specification 3/4.6.1.6, Amendment Number 31.

Revision 1 to this modification package allows on-site testing of the tendon wire samples by the Post-Tensioning Surveillance Contractor provided all the Specification C-158(Q) requirements are met (i.e., sample size, protection of samples, ASTM A 421-74/76, reporting, etc.). This disposition is applicable only for the fifth year surveillance program and does not require a change to the specification. Revision 1 also addresses safety concerns due to the assembling of scaffolding including attachment to the Containment Building dome using the Manitowoc 4100W crane located on the equipment pad 32 feet, 6 inches south and 118 feet east of the centerline of the Reactor Building. Any safety concerns related to the Category I buried utility and the impact on the below-grade portions of the Reactor Building due to use of Manitowoc 4100W crane for this inspection have been previously evaluated and these evaluations remain valid for the third Post-Tensioning System Inspection also. (Reference Plant Modification Requests 01502 and 01938.)

Revision 2 to this modification supplements the previous revision by dispositioning the tendon inspection activities inside the Auxiliary Building and the load drop analysis for the tendon gallery access hatch.

Revision 3 to this modification revised the existing safety evaluation to allow use of the 1400 ton capacity stressing ram in lieu of the 1000-ton capacity ram to perform the post-tensioning surveillance activities on the horizontal tendons at Buttresses "A" and "B".

Safety Evaluation: The operations required for performing the third Containment Post-Tensioning System Inspection do not alter the seismic, environmental, or equipment qualification of any safety related system, component or structure. The potential hazards to safety related structures, components, and systems created by the temporary activities required for performing the surveillance were evaluated with regard to safe shutdown capabilities of the plant. All affected building components (structures) were found to be structurally adequate for the loads imposed upon them during these activities. All safety related equipment and components that might potentially be damaged during the path of the loaded cart, or due to a postulated load drop in the Auxiliary Building were evaluated using the same approach used in WCNOC-4, "Report on Control of Heavy Loads". It was determined that in case of an accident due to impact of the loaded cart or due to the load drop that could damage any safety related components, only one train of any safe shutdown system would be rendered inoperable. In an unlikely event of damage to any safety related equipment/component, limitations on plant operability as described in the Wolf Creek Generating Station (WCGS) Technical Specification shall govern. The potential of flooding in the Auxiliary Building caused by any damage to Fire Protection System lines (106-KBF-4" and 157-KBF-4") in the path of the loaded cart is bounded by previous analysis.

PLANT MODIFICATION REQUEST: 02976 Revision: 1 through 3

Safety Evaluation: Continued

Since the loss of one train of redundant safe shutdown systems due to a load drop or impact has previously been analyzed and the structural integrity of any safety related structures is not affected by the tendon surveillance operations, it can be concluded that no new accidents are created nor any previously evaluated accidents are affected. Also, malfunctions of equipment, important to safety, of a different type than any evaluated previously are not created, and the probability of occurrence or the consequences of previously evaluated malfunctions, important to safety, have not increased. Finally, there are no changes to any WCGS Technical Specification or associated bases.

PLANT MODIFICATION REQUEST: 02978 Revision: 0

Title: Upgrade Hydramotor Actuators

Description: The scope of this modification package which involves making changes to safety related components is to allow the use of enhanced ITT Barton electro-hydraulic actuators for use in the Essential Service Water (ESW) Pumphouse and the Diesel Generator Building Heating Ventilation and Air Conditioning (HVAC) Systems. The new Model B-1 actuators make use of an improved hydraulic system which will make them more reliable and Viton seals which will significantly extend qualified life. A new test report for the Model B actuator, approved by incorporation of M-627A-00222, also included the Model B-1 actuator along with all available options. The appropriate drawings will be revised upon package close-out to allow use of either the original Model B or the current Model B-1 actuator. The "NH90 Series Numbering Rules," and the "Catalog Number Data Sheet," 8 pages and 12 pages respectively, will also be incorporated into ITT Barton Instruction Manual upon package close-out.

Safety Evaluation: Accidents previously evaluated in the USAR involve secondary system heat removal, Reactor Coolant System flow, reactivity or power distribution changes, Reactor Coolant inventory, or radioactive releases. The change from a Model B to a Model B-1 actuator will not affect the probability of occurrence of these types of accidents. The change from a Model B to a Model B-1 actuator, as it will only be allowed in the Diesel Generator Building and ESW Pumphouse HVAC Systems, is not directly or indirectly related to accidents evaluated in the USAR. According to the current engineering report, there have been no changes in material or material usage. Consequently, the thermal aging, wear aging, radiation exposure and design basis event components of the qualification program are not affected by the Model B-1 design changes. The engineering report recommends that all field installed Model B actuators may be refurbished at the first maintenance cycle and updated to the Model B-1 configuration for increased qualified life (15.95 years for Viton seals versus 5.40 years for polyurethane seals). Minor changes in weight and in the moment arm to the center of gravity will have no effect on vibration or seismic qualification as they fall into the realm of manufacturing tolerance. The engineering report qualifies any Model B-1 actuator, with any or all available options, to the same level of qualification demonstrated in the basic qualification test program. According to Addendum II of the engineering report, the NH91 actuator has undergone relatively minor changes to become a Model B-1. However, the NH96 is a much improved actuator as a result of the modifications made to bring it to the Model B-1 standard. The Model B-1 (NH91/NH96) has an improved mechanical relief valve design in the hydraulic system which should improve the overall system reliability by an estimated one order of magnitude. The change to the hydramotor actuators is not covered by, is not related to, and therefore has no impact on the Wolf Creek Generating Station Technical Specification or any associated bases.

PLANT MODIFICATION REQUEST: 02983 Revision: 0

Title: Westinghouse Alternate Pressure Gauges

Description: This modification allows use of pressure gauges supplied by Westinghouse with ranges of 0 through 160 pounds per square inch gauge (psig) in lieu of pressure gauges with ranges of 0 through 150 psig. A Certificate of Compliance has been supplied with the gauges. These gauges are used in various safety and non-safety related applications.

Safety Evaluation: Scales with a range of 0 through 160 psig were supplied since it is the manufacturer's standard range. This change in scale will have no significant affect on the readability of the gauges. The safety function of the gauges is to maintain the Reactor Coolant System pressure boundary, therefore the change in scale has no adverse affect on plant safety.

PLANT MODIFICATION REQUEST: 02987 Revision: 0

Title: Limit Switches Replacement

Description: This modification allows for the replacement of various NAMCO limit switches with NAMCO limit switches with different model numbers than those originally supplied. The original limit switches were supplied either as NAMCO EA170-11100 (clock-wise rotation) or EA170-12100 (counter clock-wise rotation). It is not possible to procure safety related replacement switches with these model numbers. Therefore, this modification replaces NAMCO EA170-11100 and EA170-12100 switches with NAMCO EA180-11302 and EA180-12302 switches, respectively. The appropriate drawings will also be revised to reflect the correct model numbers. This modification is applicable to various limit switches in the Main Steam, Feedwater, Auxiliary Feedwater, Steam Generator Blowdown, Essential Service Water, Auxiliary Turbines, Instrument Air, and Floor and Equipment Drains Systems.

Safety Evaluation: The EA180 switches are identical in form, fit and function to the EA170 switches currently specified. The replacement switches (EA-180) are considered an enhancement over the old switches (EA-170).

The critical characteristics of the limit switches are the same. Therefore, no new failure modes and no malfunction of a different type are created and the probability of occurrence and the consequences of malfunctions of equipment important to safety previously evaluated will not be affected. Due to the identical performance characteristics of the limit switches, the capability for accident mitigation is not increased and the probability of occurrence and the consequences of an accident previously evaluated in the USAR will not be affected. Because the limit switches are identical, no new accident scenarios are created so there is no possibility an accident of a different type from any evaluated previously will be created. Due to the identical performance of the limit switches no bases are altered and there is no effect on the margin of safety.

PLANT MODIFICATION REQUEST: 03002 Revision: 0

Title: Environmental Qualification Summary Document Revision

Description: The purpose of this modification is to update the Environmental Qualification Summary Document (EQSD). This modification package will incorporate all the modifications that were made by Environmental Qualification Work Package (EQWP) revisions and Change Notices, eliminate the discrepancies between the EQSD and the Instrumentation and Controls (I&C) Preventive Maintenance (INCPM) Data Base and correct several EQSD equipment numbers to match the numbers listed in various drawings and records.

Safety Evaluation: This modification package includes the following design changes:

A. Hydrogen Analyzers SG S02A and SG S02B
Per information provided from the manufacturer of the General Electric ET-16 indicating lights, plus activation energy data from EPRI NP-1558, the qualified life for the lights was extended from 5 years to 15.4 years. Arrhenius methodology was used in calculating the new qualified life.

B. Reactor Coolant Pump Seal Injection Flow Transmitter BG FT-0215A
This transmitter was changed in the field from a Barton model 752 to a Rosemount model 1153B. Both models of transmitters are qualified for the application, the Barton in EQWP-ESE-4A and the Rosemount in EQWP-ESE-4D; however, their qualified lives are different. The EQSD was revised to reflect the qualified life of the Rosemount transmitter, which is 40 years if the amplifier board and calibration board are replaced at 33.8 years.

C. Steam Generator Atmospheric Relief Valve Transducers and Positioners AB PY-001, -2, -3, -4, and AB ZC-001, -2, -3 and -4
The transducers and positioners for the atmospheric relief valves had their NUREG-0588 Appendix E Loss of Coolant Accident (LOCA) and Main Steam Line Break (MSLB) categories changed from Category A (i.e., must function during and following a LOCA and MSLB) to Category C (i.e., may fail in any manner during or following a LOCA or MSLB).

D. Auxiliary Relay Racks AB 008 and AB 009
Panels AB 008 and AB 009 were added per Plant Modification Request (PMR) 02261. The safety evaluation for that design change was included with the PMR. As the EQSD had not been released at the time of PMR 02261, but the initial issue was in the review process, it was not possible to include the new panels in that issue of the EQSD. This PMR, then, adds the two panels to the EQSD Master List.

E. The remaining changes are corrections of typographical errors.

PLANT MODIFICATION REQUEST: 03004 Revision: 0

Title: Engineered Safety Features Actuation System Status Panel Window Engraving

Description: Engineered Safety Features Actuation System status panel displays SA066X and SA066Y are incorrectly labelled. The current engraving on the status panel displays indicate that valves BN HV-8806A and BN HV-8806B control flow from the Residual Heat Removal System (RHR) to the Safety Injection (SI) pumps. The valves actually control flow from the Refueling Water Storage Tank (RWST) to the SI pumps. Therefore, this modification changes the window descriptions to "RWST TO SI PMP SUCT" from "RHR TO SI PMP SUCT" so that the correct source of water to the valves is indicated. The correct function of the valves was indicated on the valves' control handswitch nameplate, therefore the operator normally would be reading the correct function when operating the valves.

Safety Evaluation: Implementation of this modification removes conflicting information from Control Room displays, therefore eliminating a source of possible confusion to an operator.

PLANT MODIFICATION REQUEST: 03009 Revision: 0

Title: Downgrade Of Pressure Indicators

Description: This modification downgrades BG PI-113 and BG PI-114, local discharge pressure indicators for the Boric Acid Transfer (BAT) pumps, from designation as quality (Q) to non-Q and removes these instruments from the Q-list. Reference to these instruments will be removed from USAR, Table 3.11(B)-3.

Safety Evaluation: The BAT pumps transfer borated water from the Boric Acid Tanks to the Volume Control Tank or to the suction of the charging pumps. The pressure indicators perform no control function and are not electrically or mechanically linked to any other component. They do not directly or indirectly affect any other component or system. The BAT System does not require this component to perform its function. The associated pumps are shed from the bus upon accident initiation.

These pressure indicators are used locally to detect a failure of the associated BAT pump in addition to a pump motor start relay position indication (open) located on the main control board. The pressure indicator provides no control of either BAT pump and does not affect the pump's ability to borate the Reactor Coolant System.

The associated process piping and instrument tubing are ASME, Class 3. The pressure indicator is separated from the process fluid by a hydraulic isolator. An isolation valve exists for each pressure indicator.

These indicators are not required to function following an accident and are located in a mild environment and have no environmental qualifications.

The hazards analysis section of the USAR (3B) does not list BG PI-113 and BG PI-114 as safety related instrumentation located in the Boric Acid Tank rooms. It also states that non-safety related equipment is seismically restrained and does not adversely affect safety related equipment.

PLANT MODIFICATION REQUEST: 03028 Revision: 0

Title: Electropneumatic Transducers Replacement

Description: This modification accepts Masonelilan/Dresser model number 8005N transducer as a replacement for model number 8005A transducer. The electropneumatic transducers are physically attached to several safety related valves. The transducer's function is to convert electrical signals from a pressure transmitter into pneumatic control signals required for control valve positioning. This modification requires updating the appropriate specifications, parts list, Vendor manuals and drawings to reflect the model number change.

Safety Evaluation: The two transducers perform the same function and exhibit negligible differences in physical characteristics. The new 8005N transducer has undergone testing to demonstrate its ability to perform in the same manner as the 8005A model. Therefore, the probability of an accident previously evaluated in the USAR has not been increased. The affected valves are virtually identical to previous configuration as far as form, fit and function. The attributes of the valve that could affect the consequences of an accident have not been altered by this modification. Auxiliary Feedwater System and Main Steam System components are affected by this modification. Accident conditions for these systems have not been changed nor have any new accident conditions been introduced as a result of this change. The replacement transducer is qualified to perform to requirements of the original transducer. The probability of occurrence of malfunctions is the same as it was with the original. Since the affected components are equivalent to the original components and no new functional requirements are required, the consequences of an equipment malfunction are unaffected. The affected valves will perform their design function as originally intended. Nothing has been added that would create a malfunction different from any previously evaluated in the USAR. Since the replacement is equivalent to the original, the margin of safety has not been reduced.

PLANT MODIFICATION REQUEST: 03034 **Revision:** 0

Title: Site Auxiliary Power Transformer Disconnect Links

Description: This modification allows for the removal of the requirement for installation of Site Auxiliary Power transformer disconnect links. This requirement is being removed due to the difficulty associated with installation of the disconnect links. The applicable drawings are also revised as part of this modification package.

Safety Evaluation: Removal of the transformer disconnect links does not affect the function of the transformer. Additionally, the subject transformers and associated disconnect links are not safety related. Subject transformers are not part of any accident scenario. The removal of the transformer links will not result in a reduction in the margin of safety as defined in the bases for the Technical Specifications.

PLANT MODIFICATION REQUEST: 03039 Revision: 0

Title: Replacement Relief Valves For Control Building Heating, Ventilation And Air Conditioning Valves

Description: The safety relief valves on Control Room Heating, Ventilation and Air Conditioning (HVAC) units SGK05A/B were supplied per Specification M622.1 but replacement valves which comply with all the provisions of the original specification are no longer available. Deviations from Specification M622.1 for replacement valves have been addressed and the dispositions verify that the replacement relief valves will function in the same way as the original valves and meet all of the specification requirements which affect the ability of the valves to perform their function, including ASME Section III requirements. This modification is to incorporate the vendor drawings of the replacement valves into the controlled document system.

Safety Evaluation: Damage to the Control Room HVAC coolers due to failure of the relief valve to lift or failure of the relief valve to close are not initiating events for any design basis accident. There is no effect on the probability of occurrence of design basis accidents since there are no design basis accidents identified. The change in the relief valve does not affect the probability of failure of safety related systems and non-safety related systems which may impact the performance of safety related systems since the new relief valve function is the same as the original relief valve. Since the new relief valve function is the same as that of the original valve, the failure modes are the same. Therefore this change does not represent a new type of malfunction. Since the function of the new relief valve is the same as that of the original valve, the probability of an accident has not been changed. Since the operational capability of the new relief valve is the same as that of the original valve, there is no impact on the acceptance limits which form the basis for the Technical Specifications.

PLANT MODIFICATION REQUEST: 03040 Revision: 0

Title: Sanitary Sewer For Quality Assurance Trailer

Description: This modification allows connection of the Quality Assurance trailer's sewage system to the Sewage Treatment Plant. This modification revises the storm sewer configuration, USAR Figure 2.4-3.

Safety Evaluation: There are no accident scenarios associated with, or affected by, the sewers. These sewers and their installation have no affect on accidents previously evaluated in the USAR. The area of the plant site that is being modified does not encompass any features that could alter the consequences of an accident. This modification does not affect any safety related system, structure or component, nor does it affect any of the radiological aspects of the plant.

This modification has no affect on equipment important to safety and will not create a malfunction of equipment important to safety that is different than any previously evaluated in the USAR. This modification does not affect any portion of the plant that is addressed by Technical Specifications.

PLANT MODIFICATION REQUEST: 03049 Revision: 0

Title: Penetration Annulus Gap Dimension

Description: This modification allows for use-as-is of Fire Protection System penetration closure for penetration OP134S0877. The annulus gap dimension (between the pipe and the lead seal) exceeds the gap tolerance of -0-inch, + 1/4-inch on the positive side. The applicable drawings will be revised to reflect the as-built dimensions at package close-out.

Safety Evaluation: Since the only change is a small change in the annulus gap dimension of penetration OP134S0877, which does not impact the design function of said penetration, the probability of occurrence of an accident previously evaluated cannot be increased. As the penetration closure has not significantly changed, the consequences of an accident previously evaluated is not increased. Since the design function and characteristics of the design have not changed, the probability of occurrence of malfunctions cannot be increased and the possibility that an accident of a different type cannot be created. Since the overall function of the penetration remains the same, the consequences of a malfunction are not impacted and as such are not increased. Since the penetration closure design function is not changing, there is not a possibility that a malfunction of a different type may be created. The subject penetration closure is not described or related to any Technical Specification, therefore there will be no reduction in any margin of safety as defined in the bases for any Technical Specification.

PLANT MODIFICATION REQUEST: 03056 Revision: 0

Title: Lubricating Oil Storage, Transfer And Purification System

Description: This modification package was initiated to evaluate the as-built configuration of the Lubricating Oil Storage, Transfer and Purification System. The system walkdown and evaluation has concluded that the temporary support on line CF-010-HBD-3" attached to support 0-CF03-R002/434 is not required. Apparently the support was installed during the start-up phase of the plant; however, this can not be readily confirmed. The support shall be reworked such that the original configuration of the support 0-CF03-R002/434 is achieved. Additional instrument type isolation valves and capped lines associated with valves CF V-014 and CF V-016 are acceptable as installed. The addition of the 1/4-inch line provides additional sampling points. Valve CF V-036 was evaluated as to whether or not it should be depicted as normally open. Upon review, it was determined that the valve should be open to the oily waste drain. This modification accepts the instrumentation arrangement for the Steam Generator feedwater pump turbine lubricating oil Conditioners "A" and "B" for PDI-25 and PDI-26 which is actually configured differently than as reflected on the associated drawings. Valves CF V-055 and CF V-058 are not required to be shown locked closed on the drawings, therefore this modification reflects the valves as closed. The plastic electrical type tie-wrap used on certain valves is not required. The tie-wraps shall be removed to avoid confusion with "locked" valves. This modification also reflects the as-installed configuration of line CF-002-HBD-2" which includes a two-inch by one-inch threaded reducing coupling and a one-inch threaded plug.

Safety Evaluation: The Lubricating Oil Storage, Transfer and Purification System is designed to maintain purity of the lubricating oil used in the Main Turbine-Generator and the Steam Generator feedwater pump turbines, and to provide for the storage and transfer of clean and dirty lube oil. The system is designed to purify the total volume of lubricating oil in the Main Turbine-Generator and the feedwater pump turbines at the rate of approximately 21 and 32 percent per hour, respectively, under normal operation conditions. The system is designed to provide storage for one complete filling of clean lubricating oil in the main and feedwater pump turbines and oil conditioner, and an equal capacity for the storage of dirty lubricating oil The Lubricating Oil Storage, Transfer and Purification System has no safety design bases.

The individual modifications in no way impact design basis accidents that are analyzed. System walkdown and analysis confirmed that the structural integrity of support CF03-R002 is acceptable. Since the support is not required and analysis has confirmed this to be the case, no credible failure could result due to this part of the modification.

Since the additional sampling valves are downstream of normally closed isolation valves and the additional valves CF V-101 and CF V-102, are normally closed, the lines are capped, and the Lubricating Oil Storage Tanks, TCF01A and TCF01B, are normally isolated, no credible failure scenario could result due to this part of the modification.

Since the drains off of Mist Eliminator TCF02 would back-up if CF V-036 was actually closed and the mist eliminator operating, the modification to reflect the valve open

PLANT MODIFICATION REQUEST: 03056 Revision: 0

Safety Evaluation: Continued

actually reduces the possibility of indirect challenges to the plant safety systems. The as-built reflection of the installed instrumentation arrangement for the Steam Generator feedwater pumps turbines lubricating oil Conditioners "A" and "B" has no impact on any safety design bases or design bases accidents.

As CF V-055 and CF V-058 are in lines downstream of valves that are normally isolated, the additional administrative control on these valves would not provide any significant additional confidence level that the tanks would be inadvertently drained. The threaded reducing coupling and threaded plug will provide an equivalent design to a threaded cap, therefore this does not really create a design change.

PLANT MODIFICATION REQUEST: 03057 **Revision:** 0

Title: Acceptance Of As-Built Penetration Closure

Description: This modification accepts the as-built installation of penetration closure OP121S0241. The penetration closure provides radiation and fire boundary separation and is flexible for designed pipe movement but is not installed per design. In addition, the existing installation includes an annulus gap dimension violation at the lower end of the slab penetration. This modification provides a "use-as-is" disposition for this condition.

Safety Evaluation: The basis for acceptance of the as-built penetration closure is that the overall function of providing radiation and fire boundary separation has not changed. Thus, the probability of occurrence of an accident previously evaluated will not be increased; the consequences of an accident previously evaluated will not be increased; the possibility that an accident of a different type from any evaluated previously will not be created; the probability of occurrence of malfunction of equipment important to safety will not be increased; the consequences of a malfunction of equipment important to safety previously evaluated will not be increased; there is no possibility that a malfunction of equipment important to safety of a different type may be created. No Technical Specification is applicable or impacted by the as-built design change and as such, no reduction in any margin of safety results.

PLANT MODIFICATION REQUEST: 03064 Revision: 0

Title: Seismic Qualification For Replacement Compressors For The Control Room Air Conditioning Units

Description: This modification addresses the seismic qualification of the replacement compressors for the Control Room Heating, Ventilation and Air Conditioning units.

Safety Evaluation: This modification addresses seismic qualification only. Since the replacement compressors are seismically equivalent to the original, consequences of an accident have not been changed and the probability of occurrence of an accident is the same as with the original equipment. The Control Room Heating, Ventilation and Air Conditioning System and components will behave in the same manner as before the modification with regard to seismic response. No new accidents will result from this modification. The replacement compressor is equivalent to the original compressor seismically and therefore, will not affect the probability of occurrence of malfunctions of equipment important to safety and will not increase the consequences of a malfunction of equipment important to safety. Safety equipment in the vicinity of the air conditioning units would be the only equipment to be affected. Since the replacement compressor is seismically equivalent to the original unit, malfunctions of equipment important to safety will be the same as before the modification. Safety margins have not been affected by this modification.

PLANT MODIFICATION REQUEST: 03071 Revision: 0

Title: Coupling End Bearing Material Change

Description: The Turbine Driven Auxiliary Feedwater Pump (AFP) coupling end bearing is composed of an outer shell metallurgically bonded to a babbitt insert. This outer shell material was changed from cast iron to steel due to bonding problems with porous iron castings. This modification approves the material change from ASTM A-48 Class 30B cast iron to ASTM A-513/A-519 steel. The appropriate drawing will be revised at package close-out to reflect the material change.

Safety Evaluation: Although the tensile strength and impact properties have changed, the new material meets the functional requirements of the accident analyses in USAR 15.1.1.1 and 15.1.2.1. The only credible failure mode is bearing fracture and the properties of the new material decrease the probability of this occurrence.

PLANT MODIFICATION REQUEST: 03074 Revision: 0

Title: Attachment Of Sensors To Motor Operated Gate And Globe Valves

Description: This modification allows the permanent or temporary installation of Liberty Technology's Valve Operation Test and Evaluation System (VOTES) force sensors on the outside of the yokes of 115 safety related ASME Section III motor operated gate and globe valves. The installation of the VOTES force sensors on these valves will permit installation of the VOTES Monitoring System to determine valve operability utilizing a strain gauge mounted to the valve yoke to give direct measurement of valve stem loads.

Safety Evaluation: These valves are in 13 different safety related systems. Therefore, these safety related valves have varying design basis as identified in the USAR. However, with the sensors located on the outside of the yokes, the function and reliability of these valves and their systems are not affected. The structural integrity of these valves will be unaffected by the addition of the VOTES sensors due to their very small relative weight (approximately 1/4 pound).

A walkdown of 88 valves was performed and a determination was made that the sensors can be located on the outside of the yokes, and that no II/I concern exists with regard to the valves themselves. Furthermore, no other II/I concern exists with regard to the sensors due to their insignificant potential energy. The addition of these sensors will also have no effect on any Pipe Break, Missile, Flooding, Seismic or Fire Hazards Analyses.

Both the seismic and environmental qualifications for the safety-related valves were evaluated to reflect the addition of the VOTES force sensors. Since the chemical properties of the adhesive epoxy and sensor will not have any adverse effects on the valve yoke and the added weight of the sensor is insignificant, both the seismic and environmental qualifications to the valves are unaffected.

The addition of the sensors to the outside of the valves' yokes will not affect or create any accident or any malfunctions of equipment because the installed location of the sensor and its insignificant size and mass will not affect the structural integrity, function or reliability of the valves.

No Wolf Creek Generating Station Technical Specification or bases is affected as the design bases of the subject valves and associated systems remain unchanged.

PLANT MODIFICATION REQUEST: 03075 Revision: 0

Title: Main Turbine Lubricating Oil Conditioner Piping Modification

Description: This piping modification to prevent oil leaks in the Main Turbine Lubricating Oil Conditioner skid has been implemented and represents an as-built condition. Piping was rerouted, a valve was deleted, a valve type was changed, two valve locations were switched, and socket weld fittings were utilized.

Safety Evaluation: The replacement material is of equal or higher standards than the replaced material. The function and operation of the Main Turbine Lubricating Oil Conditioner is not affected by this modification. As discussed in USAR Section 10.2, the Turbine Generator serves no safety function and has no safety design basis. The subject modification has no impact on any Wolf Creek Generating Station Technical Specification or associated bases.

PLANT MODIFICATION REQUEST: 03081 Revision: 0

Title: Maintenance And Modifications Organization Building Utilities

Description: This modification provides a permanent design to supply fire protection/detection and potable water to the Maintenance and Modifications Organization (MMO) Building.

Safety Evaluation: This modification affects non-safety related portions of the plant only. Design and implementation have no impact on accidents previously evaluated in the USAR. This modification is located outside of the Power Block and away from any structures above or below grade that could contribute to an accident. Therefore, an accident of a different type from any evaluated previously in the USAR will not be created. Malfunctions of equipment important to safety have the same probability of occurring as before the modification. The MMO Building and its associated utilities will not place additional burden on equipment important to safety and therefore, will not increase the consequences of a malfunction of such equipment. Malfunctions of equipment important to safety will be of the same type as previously evaluated. This design change does not affect any portion of the plant addressed by Technical Specifications.

PLANT MODIFICATION REQUEST: 03103 Revision: 0

Title: Electric Actuator Parts Replacement

Description: This modification allows for changing the brake shoe material of Raymond Control Systems electric actuators Model MAR 25-30 from nitrile (Buna-N) to polyurethane. These actuators are designed to control various Heating, Ventilation and Air Conditioning (HVAC) isolation dampers on the Control Building HVAC, Turbine Building HVAC, Miscellaneous HVAC, Auxiliary Building HVAC and Containment Air Purification and Cleanup System.

The motor is equipped with a brake shoe to ensure shaft rotation is halted, which prevents over-travelling of output shaft, when the solenoid coil is de-energized. The brake must completely disengage when power is applied. Thus, the function of the brake shoe is safety related.

Safety Evaluation: The brake shoe will still maintain its function and provide adequate brake torque. The new material is compatible with the brake disc material.

The effects of the material change of the brake shoe on the environmental qualification of the damper operators have been evaluated. (Polyurethane material is also used for stator insulation of the actuator.) It is determined that the life of the polyurethane brake shoe is less than that of nitrile. Based on the qualification report, the polyurethane brake shoe will have to be replaced every 6.3 years. Maintaining the requirements of the qualification report will ensure that the original qualification of the actuator is not adversely affected.

Changing the material of the brake shoe does not adversely affect the design function of the brake shoes. As such, the functions of the actuators and the affected dampers are still maintained.

In addition, a design change evaluation has been performed to ensure plant design bases are maintained. The affected dampers will perform the intended isolation upon receipt of a Safety Injection Signal following a Design Basis Accident (DBA).

The affected components may in no way contribute to the probability of a Loss of Coolant Accident (LOCA) or any DBA since none of the accidents evaluated are caused by the operability or inoperability of the damper operator. Thus, this activity does not increase the probability of any USAR analyzed accidents.

The safety function of the affected damper operators is to isolate Auxiliary Building and Control Room upon receipt of a Safety Injection Signal. This function ensures that the radiological consequences of a LOCA are maintained below 10CFR100 and Appendix A GDC19 limits. The change in brake shoe material has been determined not to adversely affect the isolation function of the dampers. Thus, the consequences of any analyzed accidents which results in radiological releases have not increased.

Appendix 15A of the USAR contains the parameters used in analyzing the radiological

PLANT MODIFICATION REQUEST: 03103 Revision: 0

Safety Evaluation: Continued

consequences of postulated accidents. The models used assumed release paths. This activity will not create a new release path since the isolation function of the dampers is still maintained. Thus, no new accident scenarios may be created by this activity.

The preventive maintenance procedure ensures that the brake shoe is replaced periodically based on the qualification report. This ensures the qualification requirements of the damper operators are maintained. In addition, the weight of either brake shoe (2 ounces) is negligible and does not impact the seismic qualification of the actuator. Thus, this activity does not degrade the reliability of the damper actuators or dampers.

The most adverse failure mode of the damper operator is not closing the damper upon receipt of a Safety Injection Signal. The consequences of this failure have been analyzed and counteracted by "defense-in-depth design philosophy" in which redundant isolation dampers are available. This activity does not increase the consequences of a damper failing to close since equipment qualification is maintained and redundancy is unaffected (i.e., no common failure modes have been created). Therefore, the consequences of single failure and associated radiological consequences have not increased.

The failure mode of the damper operator may be electrical (loss of power) or mechanical; both may lead to the inability to close the isolation dampers. Replacing the brake shoe material does not lead to a malfunction of a different type since brake shoe failure is bounded by analyzed single features (i.e., failure of the damper to close).

The basis for the Control Room Emergency Ventilation System, Technical Specification (T/S) 3/4.7.6, is to ensure that the Control Room will remain habitable for operations personnel during and following all credible accident conditions. It is partially based on limiting radiation exposure to Control Room personnel to 5 rems or less whole body, or equivalent. Control Room isolation dampers affected by this modification will perform as intended by design. Thus, the margin of safety as defined in T/S bases is unaffected.

PLANT MODIFICATION REQUEST: 03122 Revision: 0

Title: Access Door For Damper Inspection

Description: This modification allows the addition of an access door for damper inspection. Addition of the access door affects the Control Building Heating, Ventilation and Air Conditioning (HVAC) System and Auxiliary Building HVAC System. Specifications approve the installation of access door where required and constructed of the same material as the ducts. The galvanized duct work shall be constructed of lock-forming quality sheet steel, ASTM A527 or ASTM A526, coating designation G90, which shall be hot-dip galvanized with 0.9 ounce of zinc per square foot total for both sides. The duct work shall be leak tested for air-tightness after installation of the access door per the requirement of specifications. Gasketing materials are prequalified for its resilience in a radiation field. The access doors are provided for easy viewing of the damper blades and seals required in connection with periodic maintenance of dampers. The access doors will enhance the overall system design by upgrading the maintenance standard.

Safety Evaluation: The design change does not affect the overall system performance in any way. The radiological consequences will remain the same before and after the installation of the access door. The probability of occurrence of an accident, consequences of an accident or an accident of a different type previously evaluated in the USAR is not increased in any way. The material and design bases of the access door is the same as duct work itself. The access doors are designed to remain functional in the event of a Safe Shutdown Earthquake. Furthermore, the HVAC System is designed such that no single failure compromises the system's safety function. The system redundancy or independency remains unaffected by this modification. Frequency of operation of the system is unchanged. The system protection features are not degraded, deleted or modified. The access doors do not change the location or general routing of the HVAC System. Per Technical Specifications 3/4.7.6 and 3/4.7.7 there are two completely independent ventilation systems operable in the Auxiliary/Control Building. This requirement is applicable for Modes 1, 2, 3 and 4 as a minimum. The design change does not change this condition in any way.

PLANT MODIFICATION REQUEST: 03136 Revision: 0

Title: Meggering Of Room Cooler Motors

Description: This modification removes the meggering contingency from the Mechanical Equipment Qualification work package from the Equipment Qualification Summary Document for the Room Coolers motors. The qualification test sequence for the M-612 motors (motorettes were actually tested) did not include meggering of the motor stator in determining insulation acceptability. Because of this, meggering of the stator insulation is not an environmental qualification requirement but instead is a general recommendation of the vendor and should be applied to the applications at Wolf Creek Generating Station (WCGS) in the same manner as other recommendations of this type (e.g., oil change frequencies, cleaning of electrical panels, etc.).

Safety Evaluation: The only Design Basis Accident (DBA) which causes a harsh environment at WCGS in which the Room Coolers are required to function is a Loss Of Coolant Accident (LOCA), and the only environmental parameter which reaches a harsh level as a result of a LOCA is radiation, which reaches a maximum of 16 Mrads. Since the insulation system used in the Room Cooler motors has been successfully tested to over 200 Mrads, it is highly improbable that a LOCA will cause any detrimental effects to the Room Cooler motors.

Removing the environmental qualification contingency of meggering the motor stator every 5 years will have no effect on the accidents evaluated in Chapter 15 of the USAR. As demonstrated in the qualification testing for the Room Coolers in which meggering was not performed, the motor materials are not measurably affected by the harsh environments they will be exposed to during a DBA. Removing the meggering contingency will have no effect on the ability of insulation materials to perform their safety function; therefore, the consequences of a DBA will not be increased. The Room Cooler motors have been fully qualified to withstand environments much more severe than they will see during post-DBA at WCGS. As the insulation materials of the motors are essentially unaffected by the 16 Mrads of radiation they will see during post-LOCA, removal of the meggering contingency will not result in the creation of a different type of accident than those previously evaluated in Chapter 15 of the USAR. As the Room Cooler motors at WCGS were qualified to well in excess of WCGS environmental requirements without being meggered, the removal of the contingency will have no measurable effect on the probability of occurrence of malfunction of the coolers or on any other important to safety equipment evaluated in the USAR. Removal of the meggering contingency will have no effect on the consequences of a malfunction of the Room Coolers, or any other equipment important to safety evaluated in the USAR. Removal of the meggering contingency will not result in the creation of any type of malfunction of equipment important to safety beyond those previously analyzed in the USAR. As the Room Coolers were fully qualified to environmental parameters well in excess of the postulated environments at WCGS without being meggered and the Room Cooler materials are not measurably affected by 16 Mrads of radiation exposure, the margins of safety defined in the bases for the Technical Specifications will not be affected by the removal of the meggering contingency.

PLANT MODIFICATION REQUEST: 03168 Revision: 0

Title: Stiffening Of Containment Coolers

Description: The scope of this modification is to provide structural support to the Containment cooler housing to enhance the housing's ability to withstand seismic loads.

Safety Evaluation: With the addition of structural bracing, fan cooler unit attains structural rigidity bringing the stress well within allowable limits. This modification does not adversely affect any system, structure, or component such that the probability of an accident will increase.

This modification enhances the as-installed condition of the Containment coolers. This modification also has no adverse impact on safety related plant systems. Therefore, accidents of a different type previously evaluated are not credible.

The Containment coolers provide a means of cooling Containment to reduce pressure and thus the potential for Containment leakage of airborne and gaseous radioactivity to the environment. This modification assures availability of the Containment coolers by providing sufficient support during a seismic event. The consequences of accidents evaluated in the USAR (e.g., Main Steam Line Break) are now more in line with those previously stated since this modification ensures operation of the coolers as originally designed.

The only safety related equipment affected by this change is the Containment coolers. The equipment will be less likely to malfunction, as the sole purpose of this modification is to ensure operation of the coolers after a Safe Shutdown Earthquake (SSE) and Operating Basis Earthquake (OBE).

This design change minimizes the probability of failure of the Containment coolers during an SSE and OBE. No other safety systems are affected by this design. Therefore, the consequences of a malfunction of equipment important to safety is the same as it was before the modification.

This design, including its installation, adds no active component to the plant that could malfunction nor does it interface with any other safety system. Structurally, this design change enhances existing design, therefore a malfunction of equipment important to safety different than any previously evaluated is not plausible.

Section 3/4.6 of the Technical Specifications addresses the Containment Cooling System. This modification does not affect the way the coolers operate, it only ensures their operation after an SSE and OBE. Therefore, margins for safe operation of the plant are unaffected.

PLANT MODIFICATION REQUEST: KN84-071 **Revision:** 13 and 14

Title: Installation Of Breathing Air System Outside Containment

Description: Revision 13 to the modification package was issued to accept the as-built of the Breathing Air System with respect to the installation of one air supply compressor. The air compressor was installed under a temporary modification. The temporary modification was within the basic design/safety criteria of the original design package, with the exception of cooling water, (Central Chilled Water System instead of the Service Water System) and compressant fluid, (Domestic Water System) connections.

Revision 14 to the modification package was issued to upgrade the classification of the modification from special scope to safety related. This Plant Modification Request (PMR) installation and implementation phase includes installing post-applied plates and core drilled penetrations in the Auxiliary Building.

Safety Evaluation: Per USAR Section 9.2.4, the Domestic Water System serves no safety function and has no safety design basis. The Domestic Water System supply to the Breathing Air System air compressor skid booster pump is provided with a backflow prevention device of the reduced-pressure zone type to protect against pollution from the booster pump since this water is not being used for drinking, cooking, or washing as required by the system description. Review of the current design capacity of the Domestic Water System indicates that the additional demand imposed by the Breathing Air System compressor skid will not exceed the Domestic Water System capacity. Per USAR Section 9.4.10, the Central Chiller Water System serves no safety function and failure of the system does not affect the safe shutdown of the plant. Review of the current design capacity of the Central Chilled Water System indicates that the additional demand imposed by the Breathing Air System compressor skid will not exceed the Chilled Water System capacity. The Breathing Air System interties will not affect the function, operability or design bases of the Domestic Water or Central Chiller Water Systems as described in USAR Sections 9.2.4 and 9.4.10. Previous safety evaluation addressed the special scope (II/I) and safety related (Containment penetration) aspects of the Breathing Air System. This revision does not alter that earlier safety evaluation.

Design and calculations were performed according to the system classification. Revision 14 does not impact design documents except for the classification of this PMR.

PLANT MODIFICATION REQUEST: W082-KC016 Revision: 0

Title: Fire Protection Valves Accessibility

Description: This modification involves addition of chain operators on Fire Protection System header isolation valves KC V-064 and KC V-457 located in the Turbine Building at the 2029 and 2018 elevations, respectively. At present, these valves are not easily accessible and this change is being made only to facilitate their operation. The chain operators will be attached to the existing handwheels; therefore, the handwheels will still be available for use if necessary. Also, these valves have position switches which will be retained; therefore, indication will be provided to the operators if they are inadvertently left in the wrong position.

Safety Evaluation: The weight added to the valves by installation of the chain operators has been evaluated and is inconsequential with respect to both the valves and the affected piping systems and supports. There is no safety concern due to this change since the Fire Protection System does not perform a safety related function (except for isolation of an unaffected Containment penetration) and the change is in an area where there is no safety related equipment or II/I piping.

PLANT MODIFICATION REQUEST: W082-KC017 Revision: 0

Title: Storage For Fire Brigade Equipment

Description: The scope of this modification is to provide secure, safe and easily accessible areas in the Auxiliary Building and the Communication Corridor for the storage of fire brigade gear. This modification adds standard industrial type lockers and cabinets for the storage of fire brigade gear.

Safety Evaluation: The only structural modifications associated with the modification involve installing expansion anchors. Per design documents and Wolf Creek Nuclear Operating Corporation construction procedures, the drilling of expansion anchor holes in safety related structures (even for non-safety related use) shall be performed in accordance with the appropriate specification. No safety related systems or components are located in the vicinity of the provided storage facilities and therefore, the structural acceptability of the attachments to floors and walls are not a safety related consideration.

A II/I review has been performed for the installations in safety related areas and found the location/configuration acceptable. The II/I Hazards Analysis has been updated to reflect this review. The other storage facilities are located in the Communication Corridor which is a non-safety related structure and therefore an evaluation of II/I hazards is not necessary.

The addition of these storage facilities does add to the fixed combustible loadings for the affected fire areas. The added combustible load does not affect the ability of the suppression systems to control or extinguish a fire and thus, is acceptable. The Fire Hazards Analyses in USAR Appendix 9.5B for the affected fire areas has been revised to reflect the addition of the fixed combustibles.

If not properly controlled, fire fighters accessing the gear being stored could potentially obstruct personnel egress. The basis for accepting this modification is that the storage of materials and use of the storage facilities will be administratively controlled so that egress from the area will not be obstructed. The new loads imposed on the existing structural floor due to this modification are acceptable providing they are maintained within allowable superimposed design live loads.

This modification has no impact on the Wolf Creek Generating Station (WCGS) Technical Specifications or associated bases.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the bases for any WCGS Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: W084-KE028 Revision: 1 and 2

Title: Load Indication On Spent Fuel Bridge Crane Hoist

Description: This modification adds a load cell for the Spent Fuel Bridge Crane hoist. The addition of the load cell on the hoist will provide display of the actual load thus providing an additional monitoring feature beyond the existing underload, load, and overload indicating lights. The load indicator consists of a clevis assembly installed within the hoist and a display meter clamped to the pendant station.

Revision 2 allows the use of a calibrated spring scale in lieu of standard weights to calibrate the load cell attached to the two-ton Spent Fuel Bridge Crane electric hoist. Since the spring scale calibration is accurate to within only plus or minus 50 pounds (1 percent of maximum scale reading of 5000 pounds), the displayed reading will have an additional uncertainty of plus or minus 50 pounds.

Safety Evaluation: The two-ton electric hoist of the Spent Fuel Bridge Crane is primarily used to transfer fuel assemblies. The crane is designed to maintain its integrity during a Safe Shutdown Earthquake (SSE). The additional weight of the load cell assembly is insignificant. Additional power requirement for this assembly does not pose any safety hazard. Addition of the load cell will not increase the probability of an accident or the consequence of an accident or create a different type of accident than that already evaluated in the USAR.

The subject crane's seismic qualification report analyzes the five-ton hoist for SSE and Operating Basis Earthquake (OBE) seismic loadings with the hoist load at three separate locations (midspan, at end of crane girder, and six feet three inches from end of crane girders). From review of the seismic cable tensile forces for the five ton crane, the dominant mode shapes, the corresponding system frequencies and associated floor response spectra, the maximum seismic forces attributable to the two-ton hoist loading condition can be calculated to be no greater than 11,200 pounds and 16,700 pounds for OBE and SSE earthquakes, respectively. When combined with maximum dead load of 4,000 pounds, the maximum tensile load in the cable is 15,200 and 20,700 pounds.

Since the crane cable/hoist arrangement is such that the load cell will carry one-half of the crane hook load, the maximum seismic and dead load forces required to be resisted by the load cell are 7,600 and 10,350 pounds for OBE and SSE earthquakes, respectively.

The heat treatment of the Type 17-4 steel from which the clevis bolt load cell is made, produces an ultimate stress of 155,000 pounds for the load cell. Considering failure to be due to shear the ultimate load capacity of the load cell can be calculated to be 17,000 pounds. The maximum allowable load on the cell to preclude recalibration would be 3,000 pounds.

Since 7,600 and 10,350 pounds are less than 17,000 pounds, the load cell shall maintain its structural integrity during and after an OBE or SSE earthquake so that the load will not be dropped, and its functional integrity so that the load can be put down. It is not necessary for the load cell to maintain its calibration during or after the subject earthquakes. The crane and components were procured, fabricated and erected in a controlled manner.

PLANT MODIFICATION REQUEST: W084-KE028 Revision: 1 and 2

Safety Evaluation: Continued

The purpose of the load cell is not to determine the weight of the fuel assembly accurately but to provide within some reasonable accuracy, visual indications that the fuel assembly is neither stuck nor loose during the fuel movement. Geared-type upper and lower limit switches are provided in the control circuit of the electric hoist/Spent Fuel Bridge Crane System such that the maximum lift height is limited to maintain a safe shielding depth for a fuel assembly whenever spent fuel is handled. In addition, a weight operated hoist upper limit switch is used in the electric hoist system to prevent vertical movement beyond a certain limit if the geared-type limit switch were to fail by cutting off power to the hoist. Also, a load limit switch is provided to prevent hoisting of any load greater than 2000 pounds (slightly above the dry weight of a fuel assembly) which does not interfere with the lowering motion or any other motion of the crane. This load limit switch is a control circuit type and automatically resets itself when the load decreases below 2000 pounds. None of the settings of these limit switches is affected by this revision. In addition, a fuel handling accident defined as the dropping of a spent fuel assembly onto the fuel storage area or refueling pool floor resulting in the rupture of the cladding of all the fuel rods in the assembly has already been analyzed and evaluated in the USAR, Section 15.7.4.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility of an accident or malfunction of a different type than any previously evaluated is not created; and the margin of safety as defined in the bases for any Wolf Creek Generating Technical Specification is not reduced.

PLANT MODIFICATION REQUEST: W084-ZE086 Revision: 0

Title: Essential Service Water Pumphouse Ladders And Handrail

Description: This modification installs a handrail and ladder extensions at the two existing bay openings of the Essential Service Water (ESW) Pumphouse. The north and south bays of the ESW Pumphouse are accessed by removing a section of grating and descending a ladder. While accessing these ladders the section of grating remains open thus creating a personnel safety hazard. This modification adds grab rails, removable standard railings, removable toeboards, removable gate and connections at each of the two ladders. This modification is classified as safety related due to the drilling of holes for the installation of concrete expansion anchors into the walls.

Safety Evaluation: An evaluation of the safety related equipment below these openings determined that even if the handrails and ladder extensions fail, the safety function of the safety related equipment would not be affected. Additionally, safety related equipment will not be affected by the installation of the handrails and ladder extensions. The modification does not affect any safety related equipment and will not reduce the margin of safety as defined in the Technical Specifications.

SECTION II

SAFETY EVALUATION: 87-SE-017 Revision: 4

Title: Isolation Of The Service Air Header From The Instrument Air Subsystem

Description: The subject temporary modification revision is being made to isolate the service air header from the instrument air subsystem by closing valve KA V-004, while check valve KA V-214 internals are removed and the Sullair Compressor is installed per Revision 0 of this modification. Valve KA V-004 will be maintained closed by this modification revision and only opened in case of an emergency, i.e. an "Air Cmpsr A/B/C Trouble" alarm or a "Compress Air Press Lo" alarm, or as determined necessary by Operations. The check valve internals will remain removed under this alignment configuration to allow, in case of an emergency, the Sullair Compressor air to flow back into the air dryers/filter train of the Compressed Air System (CAS) to be processed into instrument air for subsequent use.

Safety Evaluation: Normal plant alignment for manual gate valves KA V-003 and KA V-004 is the open position. These valves provide isolation of the main service air header from the plant's compressed air supply (three plant compressors.) A bypass line around KA V-003 and KA V-004 exists and is normally isolated by KA V-005. Check valve KA V-214 is in the main service air header downstream of the isolation valves (KA V-003 and KA V-004) and bypass line/isolation valve (KA V-005) which is positioned between these valves and the service air loads. Maintaining KA V-004 closed isolates the plant's compressors from supplying any service air loads. The check valve internals will remain removed under this alignment configuration to allow, in case of an emergency, the Sullair compressor air to flow back into the air dryers/filter train of the CAS to be processed into instrument air for subsequent use. This configuration is desired since the reliability of the existing plant compressors is low in view of the extensive maintenance they have demanded. With the service air system isolated from the instrument air subsystem by the actions of this modification revision (KA V-004 closed), the function of the check valve is inconsequential.

The current system configuration basically isolates the three plant compressors from the Sullair compressor. The service air loads of the plant are supplied by the Sullair compressor and the instrument air loads are supplied by the plant compressors. If all three plant compressors fail, instrument air needs can be supplied from the Sullair compressor by opening the isolation valve KA V-004. The quality, quantity, and pressure of Sullair Compressor air, if it were to be used during an emergency, is adequate to supply the requirements of the instrument air system with no degradation to supplied system components. The air from the Sullair Compressor is essentially oil-free (completely eliminates all lubricant aerosols of .01 micron in size). The Sullair Compressor, if needed in an emergency, can adequately provide the instrument air loads.

SAFETY EVALUATION: 87-SE-017 Revision: 5

Title: Tie-In Of Sullair Compressor Into Compressed Air System

Description: This safety evaluation was revised to re-evaluate the installation of the Sullair Compressor into the Compressed Air System (CAS) due to the recent design changes incorporated per Plant Modification Request (PMR) 2815 and the restoration of check valve KA V-214. The recent design changes and restorations now eliminate the potential for contaminates, particulates or intersystem rupture flows from entering the instrument air subsystem from the service air subsystem with the Sullair Compressor package hard-piped into the construction air header. The Sullair Compressor can now provide air to both the instrument and service air subsystem. The mode selected depends upon plant needs and is controlled by the system line-up procedure.

Safety Evaluation: The quality, quantity, and pressure of Sullair Compressor air is adequate to supply and meet the requirements of the instrument air subsystem with no degradation to supplied system components. The air from the Sullair Compressor is essentially oil free. Since this compressor is not oil free and can be used as an instrument air supply, testing of the Sullair Compressor shall be conducted so that the instrument air subsystem is not contaminated with oil. Test methods and acceptance criteria shall be consistent with those committed to in Generic Letter 88-14 response, (i.e., not greater than one part per million). The quality of instrument air is maintained; therefore, all equipment operated by this air will not be subject to a different type of malfunction possibility since normal system air quality is maintained.

Overpressure protection of the plant CAS and Sullair Compressor skid are provided. The CAS and Sullair Compressors function is not essential to achieve a safe plant shutdown. The location of the skid-mounted Sullair Compressor outside of the power block precludes it from causing a different type of accident due to its presence or failure.

Loss of instrument air has been evaluated (reference USAR 7.3.8.2) and the analysis states that this event cannot cause safety limits as given by the Technical Specification to be exceeded. The subject change actually provides more margin of safety against a loss of instrument air event since it provides the means for increased instrument air capacity. Providing additional instrument air capacity reduces the probability of losing all instrument air.

Consequences of a Loss Of Coolant Accident (LOCA) have not been increased since Containment integrity is maintained. Loss of air to Containment isolation valves has been evaluated; this change will not affect their safety function. Containment isolation valves upon loss of air will still fail in their safe position. Instrument air supply to these valves is not a safety related system. All instrument air operated valves fail to their safe position upon loss of air. Functional integrity of the eight-hour backup supply of compressed gas in the accumulators are not affected.

SAFETY EVALUATION: 87-SE-033 Revision: 1 through 3

Title: Temporary Hard Piped Connection In Secondary Liquid Waste System

Description: This temporary modification was originated to provide a piping connection between the discharge of the Oily Waste Interceptor Pumps (OWIP) and the inlet to the high Total Dissolved Solids (TDS) tanks to allow for sampling and neutralization of these normally non-radioactive fluids without having to utilize contaminated lines. Revision 1 of this modification made another hard piped connection between the discharge of the OWIP to the low TDS tanks. The new tie-in line was created to provide the option of going to either the high TDS or low TDS tanks. This additional option was desired because the high TDS tanks become unavailable during a Condensate Demineralizer regeneration process. The old and new connections from the OWIP discharge to the high and low TDS tanks provided a method and location to neutralize and analyze the normally non-radioactive Turbine Building sump wastes prior to discharging to the environment without having to run it through contaminated lines.

Revisions 2 and 3 to the temporary modification change the piping configuration installed by Revision 0 and replaces the design configuration approved by Revision 1. The OWIP to high TDS tanks connection line had two valves installed by the original modification. The OWIP to low TDS tanks connection line design had a single valve configuration by Revision 1. The new pipe routing configuration runs the connection line from the OWIP into a tee. An isolation valve is provided on the connection lines out of each side of the tee (one to the high TDS tanks and one to the low TDS tanks).

The following restrictions apply to the utilization of the connection lines:

1. Only one of the two valves added by this modification is open at any one time.
2. When discharging the Interceptor Tank contents via the OWIP to the high TDS tanks, the high TDS transfer pump discharge valves, HF V-165 and HF V-178, shall be throttled to prevent dead-heading the OWIP.
3. When discharging the Interceptor Tank contents via the OWIP to the low TDS tanks, the low TDS transfer pump discharge valves, HF V-219 and HF V-242, shall be throttled to prevent dead-heading the OWIP.

Safety Evaluation: The function of the SLWS is to process Condensate Demineralizer regeneration wastes and potentially radioactive liquid wastes collected in the Turbine Building. This system is segregated into two drainage subsystems, one being drainage from potentially radioactive Turbine Building drains and portions of the Auxiliary Building drains which do not normally contain radioactive wastes. The other drainage subsystem consists of drainage from non-radioactive sources. The drainage is collected and then routed for processing based upon chemistry, radioactive contamination, and Technical Specifications limitations for recycle within the plant or discharged.

Prior to discharge or processing, this waste is processed through an oil interceptor to remove oil which might be present in the sumps. This function has not been bypassed because the new connection line is downstream of the oil interceptor. The new tie-in line also does not prevent or bypass the waste from being sampled or processed by evaporation, filtration, charcoal adsorption and/or demineralization. All discharges,

SAFETY EVALUATION: 87-SE-033 Revision: 1 through 3

Safety Evaluation: Continued

radioactive and non-radioactive, are monitored for radioactivity levels, and the discharge is automatically terminated if the activity is above permissible levels or dilution flow rate is insufficient. This is inherent to the plant's design and this feature has not been bypassed by the creation of the connection. All releases are controlled by plant procedures. The probability of creating an uncontrolled or unmonitored release to the environment has not been increased. The ability to monitor all discharges to the environment is retained and no increase in the probability or possibility of releasing radioactive materials to the environment outside of acceptable limits has been created.

The connection line will be stainless steel piping of at least primary rating class 150 and will run in the north end of the condenser pit in the Turbine Building. Both points of the tie-in are non-D-augmented, stainless steel ANSI B31.1 piping lines, primary rating class 150. Isolation valves of at least primary rating class 150 are provided in the connection. The probability of pipe rupture is not increased, and overpressurization protection is provided by tank overflow lines. The connection and associated supports do not introduce any II/I seismic concerns. The discharge capacity of the high and low TDS transfer pumps is 450 gallons per minute (gpm) at 78 feet. The discharge capacity of the OWIP is 150 gpm at 51 feet. The TDS transfer pumps are the stronger pumps compared to the OWIP. This remains true even after the approximate 3 feet elevation advantage of the OWIP over the TDS transfer pumps is considered. Resistive losses between the pumps and the tie-in point common to them all is comparatively the same. The high and low TDS transfer pumps will have to be administratively controlled by throttling their respective discharge valves such t .at the OWIP are not dead-headed. If the OWIP are dead-headed, the loss would only be economical in nature. Subsequent overflow of the Interceptor Tank to the Turbine Building drainage field would result if the OWIP were lost. Failure of the Circulating Water expansion joints in the Turbine Building condenser pit has been evaluated and this previously evaluated accident is foreseen to envelope all potential failure consequences introduced by the connection lines and their use.

Routing waste from the discharge of the OWIP to the SLWS high or low TDS collection tanks does not increase the consequences of previously evaluated accidents since the SLWS has been evaluated to handle contamination as a direct result of a Steam Generator tube leak, (reference USAR 10.4.6.2.4). The possibility of spreading contamination into systems not evaluated to contain potentially radioactive material has not been created by the connection.

Based upon this evaluation, the connection has not introduced an unreviewed safety questions.

SAFETY EVALUATION: 88-SE-020 Revision: 0

Title: Emergency Supply To Safety Related 125 Volt DC Bus From Spare Charger

Description: The subject procedure provides the means to maintain power on a NK (safety related 125 volt DC) bus during its normal battery charger's failure by utilizing the spare charger and temporary jumper cables. The spare (NK25) and normal (NK21, NK23) battery chargers are powered from Load Group 1 (NB01). When Battery Charger NK21 or NK23 fails, the procedure isolates the failed charger, spare, and associated 125 volt DC bus. Temporary cables are run from the spare charger to the DC input terminals of the associated NK bus. Power is then restored to the DC bus through the spare charger when it is energized. Battery Chargers NK22 and NK24 are powered from Load Group 2 (NB02). When one of these chargers fail, the procedure maintains Class 1E independence by determinating the NB01 normal power feed to the spare charger and employing an additional jumper to supply the spare charger from NB02. This additional jumper prevents cross tying NB01 to NB02, which would degrade separation of Class 1E AC power sources. The power from the spare to the DC bus of failed Battery Charger NK22 or NK24 is then made in the same manner as was performed for Battery Chargers NK21 and NK23. To provide indication to the Control Room of the spare charger's output amperage since it only has a local amp meter, a jumper from the spare charger's amp meter to the Control Room amp meter of the failed charger is also provided by this procedure.

Safety Evaluation: The spare charger has a rated output of 300 amps and is identical to the normal battery chargers, all of which are Class 1E. Each battery charger has sufficient capacity to restore the battery from the design minimum charge (one duty cycle) to its fully charged state while supplying the largest combined demand of the steady-state loads. The full load rating of the battery chargers is 59 amps. USAR Section 8.3.2 states that the spare battery charger is centrally located and is used in the event of failure of a charger or inverter by connecting it to the affected system. Therefore, by design, the spare charger is suited for this use; however, the electrical connections between the spare charger and affected DC system are not provided by design. This procedure was developed to have the pre-approved means to connect the spare charger, if needed. This procedure is not essential for plant safety because normal charger failure has been analyzed and is addressed by the Technical Specifications. The battery bank, after subsequent charger failure, is designed to carry its bus's normal load and, if required, emergency loads for 200 minutes.

The cables, spare charger to bus, Control Room metering cable, and NB02 power feed to the spare charger are identical to the cables used by design for the respective connections. Therefore, because cables identical to design are used, the possibility or probability of equipment malfunction or creation of a different type of malfunction from previous analyses has not been increased. The jumper cables are terminated, for the most part, at the landings where the failed charger's cables have been determinated and pulled back. Some terminations between temporary cable and field cable are a bolted, snug-tight connection with an electrical tape wrap. These bolted connections do not degrade the conductors function and are not exposed to a harsh environment. No splices exist in the cables. The battery chargers are all in a mild environment and are not exposed to a harsh environment.

SAFETY EVALUATION: 88-SE-020 Revision: 0

Safety Evaluation: Continued

The temporary cables, when needed, are routed through the hallway and switchboard rooms on the 2016 level of the Control Building. The temporary cables are festooned off of the floor by securing them with tie wraps or ropes to existing unistrut, pipe supports and cable trays. Securing the temporary cables to these components is not to be considered or construed as being seismically qualified. The temporary cables are gathered together after installation and held up from the floor for convenience, personnel safety and protection from possible degradation. The Battery Rooms are not in a high-traffic-volume area of the plant and these actions are viewed as not essential to jumper cable function. Failure of the tie wraps or ropes will not affect the function of the jumper cables because sufficient slack at the termination ends and drape between tie off places will allow the cables to lay on to the floor without conductor failure or malfunction.

The jumper cable runs from the spare charger in the Non-Vital AC Switchgear and Transformer Room to Battery Chargers NK21 and NK23 in Switchboard Rooms 1 and 2, respectively. These runs are tied off to the unistrut in the Non-Vital AC Switchgear and Transformer Room and, when it runs into either Battery Charger NK21 or NK23 Switchboard Rooms, the runs are tied off to the seismically qualified cable trays. The cable trays the temporary cables are tied to are of the same separation group; therefore, group separation is maintained. These trays are almost void of cable, and the additional load of jumper cable mass is insignificant. The seismicity of these cable trays is not compromised by having the jumper cables tied to them.

In the case of the jumper cable run from the spare charger to Battery Charger NK22 in Switchboard Room 3, the run exits the Spare Charger Room and runs down the hallway, then into the east-west hallway through Battery Room Number 2, before entering Battery Charger NK22. The run to Battery Charger NK24 is down the north-south hallway before entering Battery Charger NK24. These runs are attached to the unistrut in the hallways and to the pipe hangers/supports in the hallways before entering the chargers, where they are tied off to the seismically qualified cable trays. The cable trays the temporary cables are tied to are of the same separation group; therefore, group separation is maintained. The pipe hangers/supports the cables are tied to are II/I qualified and the seismically qualified cable trays will not be degraded by the insignificant load the temporary cables present. The unistrut locations the cables are tied to are capable of carrying the additional load of the cables. The cable runs will be relaxed, not taut, and will not violate the minimum bend radius criteria. These routes are not over any rotating machinery or adverse temperature environments which could cause the potential for a nuclear safety concern. Routing the power and Control Room metering cables together is not expected to cause any interferance within the metering cable because this cable is shielded. Interference, which could occur, would only affect the Control Room output ampere indication of the spare charger. The spare charger's local amp meter remains unaffected by the cables and is available for operator information. This local amp meter shall be compared to the Main Control Board indicator after jumper installation for any possible indicator interference effects. The operability of the spare charger to feed the DC bus it is connected to is not affected by this routing configuration.

SAFETY EVALUATION: 88-SE-020 Revision: 0

Safety Evaluation: Continued

USAR 9.4.1.2.3 states that the quantity of air exhausted from each of the Battery Rooms by the Control Building Exhaust System is well in excess of that which was calculated as necessary to maintain the concentration of hydrogen in the rooms under the worst conditions below the flammability limit. This design feature remains unaffected by the procedure.

The cables will be identified by tags and are visually inspected to be in good working condition; that is no insulation nicks, cuts or degradation present prior to use. In conclusion, the procedure actions do not degrade Class 1E electrical power sources or distribution and actually enhance the plants nuclear defense-in-depth safety features by providing the means to utilize the spare charger when the normal charger is unavailable.

Steps in the procedure verify that systems are de-energized and isolated, polarity is checked, and fire impairments issued on all fire doors breached by the cable runs. These procedure requirements and controls maintain the probability, possibility and consequences of previously evaluated accidents within previous analyses. The procedure controls prevent an increase in the possibility or probability of a short circuit, ground fault, electrical fire, or backfeed between load groups from occurring.

This procedure uses equipment that has been designed into the 480 volt system for this purpose. The probability of a station blackout or loss of emergency power has not been increased by the procedure actions because it does not degrade these vital sources of power or their distribution system.

The procedure uses the spare battery charger as designed and within design. The possibility of an electrical short has not been created by the temporary jumper cables. Appropriately skilled technicians, in a well lighted and relatively noise-free environment, will install the jumpers. Breakers are opened to isolate Class 1E Load Groups 1 and 2 when the jumpers are installed; thus, the possibility of cross connecting load groups has not been created.
Battery Room ventilation is not degraded by having the room fire doors open. Fire impairments are issued on all fire doors left open by this procedure. Short, Battery Room fire and loss of power have all been previously evaluated. The possibility of creating a different type of malfunction other than these is not foreseen as being introduced.

Utilizing the spare battery charger to maintain power to the Class 1E DC power subsystems during normal charger failure maintains the instrumentation and control power of the Reactor Protection and Engineered Safety Features Systems. This action will maintain plant safety features and no logic degradation or malfunction of equipment important to safety will be increased because the power to the vital circuits will be constantly available and uninterrupted without complete reliance on the battery bank. The Emergency Diesel Generators remain available and are not affected by the procedure. The use of the battery chargers, normal and spare, are within design. The temporary

SAFETY EVALUATION: 88-SE-020 Revision: 0

Safety Evaluation: Continued

jumper cables used are identical to those used by design, and Class 1E integrity is maintained. The consequences of a station blackout have not been increased because the Emergency Diesel Generators and the battery banks remain operable to provide electrical power to enable a safe shutdown.

The operability of the AC and DC power sources and associated distribution systems required by Technical Specifications 3.8.2.1 and 3.8.3.1 are maintained by this procedure with no reduction in the margin of safety.

SAFETY EVALUATION: 88-SE-119 Revision: 0

Title: Revision To Procedure ADM 02-102, Revision 14

Description: The subject procedure is used to verify and provide the reason for maintaining the correct locked position of valves, breakers and components necessary for safe plant operation and personnel safety. Piping changes made to the Solid Radwaste System by Plant Modification Request (PMR) 01509 have changed valve descriptions and added valves to this system. Specifically valve HC V-169 has been changed from a locked closed secondary resin storage tank to bulk waste disposal station to a locked closed Reactor make-up water to primary bulk waste disposal station isolation valve. Valve HC V-255 has been changed from a locked closed Reactor make-up water to bulk waste disposal station to a locked closed Reactor make-up water to primary bulk waste disposal station isolation valve. Valve HC V-283 was added by PMR 01509 and this valve is being added to the procedure. This valve will be locked closed and provides isolation of the secondary spent resin storage tank to the secondary bulk waste disposal station.

Safety Evaluation: The current USAR revision does not reflect the above design changes made by PMR 01509. The subject procedure change is being made to reflect actual plant locked valve status as changed or introduced by PMR 01509. The valves are maintained in the closed locked position by the procedure change which maintains the approved design configuration. The change of description of valves HC V-169 and HC V-255 and the addition of valve HC V-283 to the procedure do not increase the possibility, probability or consequences of previously evaluated accidents or malfunctions, or create the potential for a new or different type of accident or malfunction since the procedure change does not alter or change the approved PMR 01509 design or valve position/status. This safety evaluation evaluates the subject procedure changes brought about by the previously approved design change.

SAFETY EVALUATION: 88-SE-120 Revision: 0

Title: Revision To Procedure CKL HC-120, Revision 5

Description: The subject procedure provides the position of the Solid Radwaste System equipment for normal system operation. The change to this checklist procedure is directly due to the approved piping changes made by Plant Modification Request (PMR) 01509 to this system. PMR 01509 has added valves and changed the function of existing valves in this system. (Refer to Safety Evaluation 88-SE-119, Revision 0 for details of PMR 01509).

Safety Evaluation: The current USAR revision does not reflect these design changes, hence the subject procedure change to reflect the current system configuration is a change to the facility from its description in the USAR. The change of description of some valves and the addition of more valves in the procedure does not increase the possibility, probability or consequences of previously evaluated accidents or malfunctions, or create the potential for a new or different type of accident or malfunction since the procedure change does not alter or change the approved PMR 01509 design or system alignment. This safety evaluation evaluates the subject procedure changes brought about by the previously approved design change.

SAFETY EVALUATION: 89-SE-002 Revision: 0

Title: Bypass Supply Line To Auxiliary Boiler System

Description: This temporary modification is on the fuel oil supply line to the Auxiliary Boiler System. The fuel oil supply line to the suction side of the booster pumps of the boiler is underground, located in the exterior yard area bounded by the Demineralized Water Storage Tank, the Containment/Auxiliary Building, and the Auxiliary Boiler Building. This line has developed a leak and the modification to be made is to bypass the portion of the line which is leaking by using hard pipe and a bypass hose.

Safety Evaluation: The Auxiliary Boiler System is not essential to plant safety. The bypass hose and associated piping shall be rated at or above 75 psig and 100 degrees Fahrenheit, which will maintain or exceed system design. The bypass hose shall remain uninsulated for leak detection purposes. Should the external temperature fall below the fuel oil freeze/gel state, the worst case scenario would be shutdown of Auxiliary Boiler. No safety related equipment or systems would be jeopardized by this occurrence. This modification does not degrade or alter fire barriers, zones or suppression systems.

SAFETY EVALUATION: 89-SE-004 Revision: 0

Title: Degasifier Skid Piping Changes

Description: The Demineralized Water Storage and Transfer System (DWSTS) stores water for use upon demand for makeup within the plant. The DWSTS receives filtered and demineralized water from the Demineralized Water Makeup System (DWMS). For Reactor makeup, a degasifier removes oxygen from the demineralized water as it is transferred. The effluent from several systems which process waste, which can be recycled within the plant, are passed through the DWSTS degasifier before being transferred to the Reactor Makeup Water Storage Tank (RMWST). On the degasifier skid, to prevent oil mist eliminator drain line to drain spatter, the second stage drain line has been routed independently from the first stage drain line to the common drain. The expansion joints on the discharge of the degasifier vacuum pumps have been removed and replaced with hard pipe (suction side expansion joints remain). This action was taken to secure the oil mist eliminators and prevent their vibration. These changes occur on the non-seismic, non-augmented piping in the Turbine Building.

Safety Evaluation: The DWSTS serves no active or passive safety function, has no safety design basis, and is not required to achieve or maintain safe shutdown. These changes are not detrimental to the degasifier skid's operability. The quality of Reactor makeup water has not been degraded by the changes. These changes do not increase the possibility or consequences of a fire since drain and vent flow routes have not changed.

SAFETY EVALUATION: 89-SE-005 **Revision:** 0 and 1

Title: Disable Liquid Radwaste Relief Valve

Description: Liquid Radwaste relief valve HB 7160 is leaking by and is to be disabled by the subject modification. Relief valve HB 7160 is connected to the recirculation line of the Reactor Coolant Drain Tank (RCDT) downstream of the point at which the valve leakoffs, flange leakoffs, and excess letdown enter the recirculation line. This relief valve and RCDT are part of the Liquid Radwaste System which collects, processes, handles, stores, recycles and disposes of liquid radioactive waste.

Revision 1 to the temporary modification provides for the removal of relief valve HB 7160 for the performance of maintenance on the relief valve. While the relief valve is removed, the line will be blanked off by ANSI 150 pound blind flanges. The blind flanges maintain the piping integrity and system isolation capability. The application of a freeze seal for system isolation while the relief valve is being removed or replaced is performed and controlled by plant procedures and provides an adequate isolation boundary.

Safety Evaluation: The Liquid Radwaste System has no safety design basis except for its Containment Isolation valves/piping and the Component Cooling Water side of the RCDT heat exchanger. This system is not essential to shutdown or to maintain the plant in a safe shutdown condition. Normally, the cool recirculation water leaving the RCDT heat exchanger is more than sufficient to mix with hot letdown and potentially two-phase mixtures entering from hot leakoff connections, thereby condensing any steam and cooling the mixture. The RCDT heat exchanger is sized to maintain the RCDT contents at or below 170 degrees Fahrenheit, assuming an inleakage of 10 gallons per minute (gpm) at 600 degrees Fahrenheit. The location of HB 7160 was selected because, in the event that the recirculation system or the RCDT heat exchanger should fail, this relief valve could relieve any steam present in the hot leakages directly as steam, instead of relieving a volumetric flow rate of liquid equivalent to the volumetric inflow of steam. Disabling HB 7160 will remove this system feature but will not limit or fault the system's function since alternate relief is provided.

During certain modes, the RCDT pumps are utilized for draining or purifying the refueling cavity water, draining the accumulators or the Reactor Coolant loops, and draining or cooling the Pressurizer Relief Tank. Such operations require isolation of the drain tank (and relief valve HB 7160) by closure of valves HB HV-7144 at the tank inlet and HB HV-7127 at the tank outlet. In these situations, overpressure protection for the RCDT pump suction is provided by relief valve HB 7169 connected to the 4-inch RCDT outlet pipe at a point downstream of check valve HB 7128. Overpressure protection is provided principally by removable spool pieces which preclude the possibility of overpressurization events. Disabling relief HB 7160 shall occur after HB HV-7127 is removed from service in the open position (valve fails open on loss of air) such that relief valve HB 7169 may satisfy the overpressure protection requirements of the RCDT. Valve HB HV-7127 does not serve a safety function. If a Reactor Coolant Pump (RCP) seal failure (10 gpm design maximum) occurs when HB 7160 is disabled, the system's ability to remove flashing steam and quench the incoming tank flow is not as easily accommodated. However, the RCDT, associated piping and RCDT pumps will not be subject to an overpressure event since adequate relief protection is provided by HB 7169. Relief valve HB 7169 discharges to the Containment normal sump inside Containment which is the same discharge point of relief valve HB 7160.

SAFETY EVALUATION: 89-SE-005 Revision: 0 and 1

Safety Evaluation: Continued

Therefore, the radiological consequence of a RCP seal failure or Reactor Coolant System leakoff remain confined within Containment and to its radiological drainage systems designed to contain and appropriately process radioactive materials. By design, the maximum amount of hydrogen which can be supplied into Containment via the RCDT relief due to a failure of the hydrogen gas pressure control and venting system is limited to two 194 standard cubic feet bottles. The consequences of this failure event have not been increased from previous analysis since only the pressure at which the hydrogen gas is discharged to the Containment sump has changed. The consequences of a loss of RCDT heat exchanger cooling have not been increased with HB 7160 disabled since only the set pressure of relieving the system has been altered by the modification actions. In conclusion, the increase in pressure the system will see as a result of disabling HB 7160 prior to the system being relieved has not compromised the ability of processing the leakage flows or overpressure protection of the RCDT.

Removing the disabled relief valve and blanking the line off will affect the system's relief features in the same way as disabling the relief valve, but this action will not limit or fault the system's function since alternate relief is provided. Removing the disabled relief valve and blanking the line off still requires valve HB HV-7127 to be removed from service in the open position (valve fails open on loss of air) such that relief valve HB 7169 may satisfy the overpressure protection requirements of the Reactor Coolant Drain Tank (RCDT). If a Reactor Coolant Pump (RCP) seal failure (10 gallons per minute design maximum) occurs when the line is blanked, which is no different than having the relief valve disabled, the system's ability to remove flashing steam and quench the incoming tank flow is not easily accommodated. However, the RCDT, associated piping and RCDT pumps will not be subjected to an overpressure event since adequate relief protection is provided by HB 7169.

SAFETY EVALUATION: 89-SE-006 Revision: 0

Title: Defeat Turbine Vibration Trip

Description: This modification consists of lifting leads to defeat the high vibration trip of the Main Turbine. Normal alarm indication of high vibration in the main Control Room is maintained. Control Room personnel will still be capable of tripping the Main Turbine if high vibration alarms occur.

Safety Evaluation: The Main Turbine serves no safety function and has no safety design basis. The turbine generator unit and associated piping, valves, and controls are located completely within the Turbine Building. There are no safety related systems or components located with the Turbine Building; hence, any failures associated with the turbine generator unit will not affect any safety related equipment. Failure of turbine generator equipment does not preclude safe shutdown of the Reactor Coolant System. "Annunciator/Hi-Hi Vibration" alarm in the Control Room is not affected by this change and will still offer control over the Turbine. Turbine missiles have been evaluated in USAR 3.5.1.3 and high speed missile probabilities have not increased since Turbine overspeed protection is still available and is not affected by this change. Defeating the Main Turbine's automatic high vibration trip does not increase the probability, possibility or consequences of previously evaluated accidents since these accident analysis, assumptions or initial conditions have not been affected by the change.

SAFETY EVALUATION: 89-SE-008 **Revision:** 0

Title: Defeat Air Compressor "B" Low Service Water Pressure Switch

Description: The air compressor "B" Service Water pressure switch (KA PSL-002A) in the Service Water cooling line would not calibrate and was damaged during calibration. Air compressors "A" and "B" are powered from Class 1E busses and are normally cooled by Service Water until accident conditions are present when they switch to Essential Service Water. The low pressure switch's function of stopping the compressor when Service Water pressure to the compressor reaches 30 psig is being jumpered out. A pressure gauge is being installed in the Service Water line at the location of the pressure switch to provide indication of water pressure for manual operational control and monitoring.

Safety Evaluation: The purpose of the low Service Water pressure trip is to protect the compressor from degraded operation caused by lack of cooling or leakage into the air side of the system. Defeating the low Service Water pressure switch of the compressor will not have any adverse effect on equipment important to safety since no credit is taken for the operation of the compressor during the accident analyses previously evaluated in USAR Section 15.0. The pressure switch provides for equipment (compressor) protection and is not an Engineered Safety Feature designed to protect plant safety barriers. The portion of the Compressed Air System with a vital function will not be compromised by this subject change. The safety related backup compressed gas (nitrogen) supply for the Auxiliary Feedwater control valves will not be affected either. The 8 hours of reliable compressed gas in the accumulators (nitrogen at 750 psig) for these valves will not be compromised by defeating the low pressure switch function. The safety related pneumatically operated valves are listed in USAR Table 9.3-2. All listed valves fail in their safe position upon loss of air supply. The probability or possibility of these valves not going to their safeguards position upon loss of air supply has not been increased by this subject change. The quality of air supplied for instrument use will not be degraded since the operation and system setpoints for the treatment of the air (drying and filtering) have not been affected. Defeating the low pressure switch, therefore, does not increase the probability, possibility, or consequences of previously evaluated equipment important to safety malfunctions or accidents.

SAFETY EVALUATION: 89-SE-009 Revision: 0

Title: Removal Of Solenoids On Perimeter Gates

Description: Electronically controlled perimeter gates 3, 5 and 8 have had their solenoids removed. These electronically supervised gates are used infrequently and have prevented ingress or egress due to the solenoids sticking. The subject modification removes the solenoids from the gates and replaces them with chains and locks which are controlled by the security department.

Safety Evaluation: Chain and lock control of the subject gates is equivalent to remote electronic supervision. This action provides equivalent control over the plant's perimeter with no reduction in the security program.

SAFETY EVALUATION: 89-SE-010 Revision: 0

Title: Recirculation Of Chilling Water In Boron Thermal Regeneration System Chiller

Description: Procedure INC S-0901, Revision 0, "Recirculation Of Chilling Water In BTRS Chiller", allows operation of the letdown chiller portion of the Boron Thermal Regeneration System (BTRS) without the mode selector switch in either the borate or dilute position. A jumper will be placed in the letdown chiller heat exchanger shell-side outlet temperature control valve, BG TCV-386, control circuit to allow the valve to be opened without the mode selector switch (BG HIS-27) being in either the borate or dilute position. This abnormal mode of operation is desired to enable Chemistry to obtain a more representative sample of the chiller water without having the BTRS in either the borate or dilute mode. The procedure provides for recirculating the chiller water by running a chiller pump and jumpering open BG TCV-386 when the system is in standby. The jumper on BG TCV-386 does not cause other interlocked valves within the BTRS subsystem to actuate. This recirculation mode of operation of chiller coolant will not place a load on the letdown chiller heat exchanger as no Reactor Coolant System (RCS) letdown flow through the heat exchanger will be present since the BTRS is not placed into operation, i.e., either borate or dilute.

Safety Evaluation: The BTRS is a subsystem of the Chemical and Volume Control System (CVCS) and is not part of the CVCS associated with emergency boration via Boric Acid Tanks or Refueling Water Storage Tank, charging for Emergency Core Cooling System, Reactor Coolant pressure boundary isolation or Containment isolation. These portions are safety related and required to function following a Design Basis Accident and to achieve and maintain the plant in a safe shutdown condition. Recirculating the chiller water without BTRS processing does not increase the possibility or probability of equipment important to safety malfunction occurrence since none of this equipment is affected by the use of the procedure.

The BTRS is designed for power generation to allow load-follow operations as required by the design load cycle. The BTRS portion of the CVCS is designed and fabricated in accordance with quality group D (augmented) requirements and has no safety design basis. the BTRS is capable of controlling the changes in the Reactor Coolant boron concentration to compensate for the xenon transients during load-follow operations, without adding makeup for either boration or dilution.

A boron dilution accident through the Reactor makeup portion of the CVCS has been evaluated in USAR Section 15.4.6. The probability of increasing the occurrence of this accident has not been increased since the procedure does not introduce a BTRS dilution process mode of operation. The consequence of a dilution event has not been increased since the CVCS dilution isolation function and associated isolation valves have not been affected by the procedure.

SAFETY EVALUATION: 89-SE-011 Revision: 0

Title: Fire Protection System Valve Operability And Flow Tests

Description: A new procedure, STN FP-432 is being written to address performing the valve operability and flow test for the 13 hose stations inside Containment on an alternating Refueling Outage basis. Currently, procedure STN FP-431 performs this check and hydrostatically tests the station's fire hose every three years. STN FP-432 was written to separate out from STN FP-431 the valve operability and flow tests from the hydrostatic tests and specify an alternating Refueling Outage basis for these tests. Following STN FP-432 approval, the valve operability and flow tests will be deleted from STN FP-431.

Safety Evaluation: The three year test requirement for hose station valve operability and no flow blockage came about from the original plant Technical Specification/Standard Technical Specification. This test requirement was removed from the Technical Specification by Amendment 15 and is no longer a Technical Specification requirement. This three year period for valve operability is not based upon equipment service use or code requirement. National Fire Protection Association (NFPA) code does require, at least once every three years, a hose hydrostatic test. This test is conducted by STN FP-431. It was because of the specified three year hose hydrostatic test requirement by NFPA 1962 that the three year time period for the hose station valve and flow test was chosen. Therefore, the hose station valve and flow tests were assigned a three year surveillance interval based upon the service conditions of the station's hose. Checking the valve operability and water flow on an alternating Refueling Outage basis is equivalent to at least once every three years. Testing on this basis does not lower the reliability or operability of these fire hose stations since the three year time period originally specified was arbitrarily chosen and normally there will be at least two Refueling Outages in a three year time period. This test schedule also aligns itself with ALARA and system feasibility objectives because the Containment fire protection standpipes are normally dry and the opportune time to flood and drain them is during a Refueling Outage. Past testing of the system valves and piping has revealed no indication of degraded reliability or operability; therefore, no increased testing schedule is warranted from past testing experience.

The procedure does not relate to or affect the operability of the Containment's fire detection and alarm system, fixed manually charged sprinkler system over the cable trays, portable fire extinguishers, or the oil collection system for the Reactor Coolant Pumps.

The USAR states that the probability of a fire occurrence in Containment is greater during Refueling and maintenance operations. The USAR also states that no postulated fire from fixed or transient combustibles in the Reactor Building will prevent safe shutdown of the plant. A single postulated fire could affect the Residual Heat Removal (RHR) loop suction isolation valves; however, the USAR fire hazards analysis states that one train of RHR is required to be open in a minimum of 30 hours following initiation of shutdown. The USAR states that this length of time is long enough that one train of RHR valves can be opened manually. The consequences of this previously evaluated fire hazard have not been increased by this procedure change since the capability to fight this fire and have it controlled within 30 hours to enable RHR operation remains readily available.

SAFETY EVALUATION: 89-SE-012 Revision: 0

Title: Temporary Procedure For Flow Information On Essential Service Water System

Description: The subject temporary procedure was written to obtain post-Loss Of Coolant Accident (LOCA) flow information on the Essential Service Water (ESW) System. In support of gathering this information, temporary gauges are being installed on the ESW main supply lines of each train to take pressure and differential pressure readings. The temporary gauges are installed off of existing vent, drain and flow element taps. This instrumentation is not reflected on USAR Figure 9.2-2; therefore, the procedure has introduced a change to the ESW system from its description in the USAR.

Safety Evaluation: The ESW piping is Seismic Category I and its design pressure is 200 pounds per square inch gauge (psig). The total deadhead of an ESW pump is 361 feet, i.e., 156 psig. The commercial pipe fittings/connectors employed in attaching the gauges are capable of maintaining system pressure design. The added weight of approximately 5 pounds for each gauge is not rigidly connected to the system, but are connected via a flexible metal hose or equivalent. This temporary connection method does not alter the seismicity of the ESW piping. Attaching the test gauges on the ESW piping does not increase the probability or possibility of the occurrence of equipment malfunction or failure.

SAFETY EVALUATION: 89-SE-014 **Revision:** 0

Title: Installation Of Pressure Gauges To The Auxiliary Feedwater Piping

Description: This temporary modification installs two pressure gauges on the Auxiliary Feedwater System suction piping for the turbine driven feedpump. The pressure gauges, with burst pressure ratings of 150 pounds or better, are coupled to the system via a flexible metal hose rated at 150 pounds or better. The gauges are installed off of a test point and drain connection. This instrumentation is not reflected in USAR Figure 10.4-9; therefore, this modification has introduced a change to the Auxiliary Feedwater System description in the USAR.

Safety Evaluation: The Auxiliary Feedwater System piping is Seismic Category I and is rated to 150 pounds. The commercial pipe fittings/connectors employed in attaching the gauges retain this rating. The added weight, approximately two pounds for each gauge, is not rigidly connected to the system but is connected via a flexible metal hose. This temporary connection method does not alter the seismicity of the subject lines. Attaching the test gauges to this piping does not increase the probability or possibility of the occurrence of equipment malfunction or failure. The subsequent consequences of test connection or gauge failure would be inconsequential to system operation.

SAFETY EVALUATION: 89-SE-015 Revision: 0

Title: Revision To Procedure ADM 05-107, Revision 1

Description: This procedure revision removes the requirement for certification to standard SNT-TC-1A for Wolf Creek Generating Station (WCGS) personnel who schedule, review and accept exam data sheets for WCGS non-destructive examinations (NDE). Since SNT-TC-1A does not define qualification requirements for supervision of NDE activities or personnel, supervisory personnel are not required to be certified or qualified to SNT-TC-1A if they do not perform or evaluate NDE.

Safety Evaluation: This procedure revision removes the requirement for personnel who supervise NDE activities to be qualified to SNT-TC-1A as long as they do not perform or evaluate NDE. SNT-TC-1A does not define qualification requirements for personnel who perform a purely supervisory role over such activities. USAR Section 17.2.10.7 (Qualification of NDE Personnel) likewise requires personnel who supervise NDE to meet the qualification requirements specified in SNT-TC-1A. This is an unnecessary statement since SNT-TC-1A has no such requirements. Removal of this requirement will not have any affect on any aspect of plant safety. A USAR change will be submitted in connection with this revision as well.

SAFETY EVALUATION: 89-SE-016 Revision: 0

Title: Removal Of Loop Seals From Degasifier Piping

Description: To remove back pressure on the discharge side of the degasifier vacuum pumps on the degasifier skid, the loop seals in the exhaust lines are being removed. This action is being taken to prevent oil carry-over from the vacuum pumps to the condenser air removal radiation monitor. The drainage path after the loop seals are removed is maintained by the modification since the drainage flow is routed to the same drainage system. This change occurs on non-seismic, non-augmented piping in the Turbine Building.

Safety Evaluation: The Demineralized Water Storage and Transfer System (DWSTS) stores water for use upon demand for makeup within the plant. The DWSTS receives filtered and demineralized water from the Demineralized Water Makeup System (DWMS). For Reactor makeup, a degasifier removes oxygen from the demineralized water as it is transferred. The effluent from several systems which process waste which can be recycled within the plant, are passed through the DWSTS degasifier before being transferred to the Reactor Makeup water storage tank. The DWSTS serves no active or passive safety function, has no safety design basis, and is not required to achieve or maintain safe shutdown. This change is not detrimental to the degasifier skid's operability. The reliability and operability of the condenser air removal radiation monitor is actually enhanced by the change since the ability to decant the oil mist from the vacuum pump exhaust gases is improved when the back pressure is eliminated. The quality of Reactor makeup water has not been degraded by this change. This change does not increase the possibility or consequences of a fire since drain and vent flow routes have not changed.

SAFETY EVALUATION: 89-SE-017 Revision: 0

Title: Temporary Procedure For Measuring Essential Service Water Underground Piping Flow

Description: This temporary procedure was written for measuring the flow of the Essential Service Water System (ESW). In support of this procedure, test gauges are being installed on the ESW main supply lines of each train to take pressure readings. The test gauges are installed off of existing vent, drain and flow element taps. The test gauges, with pressure ratings of 150 pounds or better, are to be coupled to the system via a flexible metal hose rated at 150 pounds or better. This test instrumentation is not reflected in USAR Figure 9.2-2; therefore, this temporary procedure has introduced a change to the ESW from its description in the USAR.

Safety Evaluation: The ESW piping is Seismic Category I and is rated to 150 pounds. The commercial pipe fittings/connectors employed in the attaching of the gauges retain this rating. The added weight, approximately two pounds for each gauge, is not rigidly connected to the system but is connected via a flexible metal hose. This temporary connection method does not alter the seismicity of the ESW line. Attaching the test gauges on the ESW piping does not increase the possibility or probability of the occurrence of equipment malfunction or failure. The subsequent consequences of test connection or gauge failure would be inconsequential upon system operation.

SAFETY EVALUATION: 89-SE-018 Revision: 0

Title: Replacement Of Sample Return Pump Diaphragm

Description: This temporary modification was revised to reflect that a single teflon diaphragm in lieu of a double metal diaphragm pump is being temporarily utilized in the Primary Sampling System (PSS) panel. The subject pump 1P2 is one of many small sample pumps utilized in the PSS panel. Pump 1P2 is a sample return pump which discharges the sample and does not draw the sample for analysis. Utilization of this alternate pump is limited until a replacement is found, which is expected to take four to five months. Over this time period, the teflon diaphragm is not foreseen to significantly degrade since radioactive samples are only taken three times a week and, afterwards, the pump and sample lines are flushed with demineralized water and purged with nitrogen. Discussion with the pump's manufacturer concerning this intermittent exposure of the pump to radioactive fluids concluded that the teflon diaphragm could last indefinitely under this type of service. NUREG-0737 specifies the acceptable regulatory requirements for the PSS, one of which is that the equipment utilized is to be compatible for its service. The PSS collects samples from the Reactor Coolant System (RCS) and auxiliary systems and brings them to the sample room in the Auxiliary Building. This system is normally isolated and manually initiated on an intermittent basis to provide sample analysis during normal operation and post-accident. The Wolf Creek PSS has been reviewed and approved by the Nuclear Regulatory Commission as meeting the requirements of NUREG-0737, reference NUREG-0737 Safety Evaluation Report (SER) response. Since this SER is part of the USAR, the temporary replacement of the metal diaphragm pump, which is suitable for radioactive service by the teflon diaphragm pump, is a change to the USAR.

Safety Evaluation: This pump is not safety related or special scope (D-augmented), reference USAR Table 3.2-1, nor is it seismically qualified or qualified for service in a harsh environment, reference USAR Table 3.11(B)-3. The PSS panel, of which the pump is a part, is not normally powered from a vital power source, but upon loss of power, can be loaded onto the Emergency Diesel Generator. The very existence or nonexistence of the pump will not increase the consequences of any previously evaluated accident. The PSS is used post-accident to determine the extent of core damage and has no role in mitigating the damage or supporting any equipment important to safety. The Containment isolation valves of the PSS system, which are the only components of the system essential for plant safety, are not affected by the change.

Post-accident core damage assessment capability by the Containment high area radiation monitors are not affect by the change. The ability to sample the RCS and auxiliary systems during normal and post-accident conditions remains available with the use of the teflon diaphragm pump. The use of the pump is not expected to last for more than six months; but if it does, it shall be re-evaluated at that time. The use of the diaphragm pump on a temporary basis does not increase the probability, possibility or consequences of any previously evaluated USAR accident since this pump is not a plant safety feature.

SAFETY EVALUATION: 89-SE-019 Revision: 0

Title: Temporary Air Supply To Auxiliary Feedwater Pump Room Sump Pumps

Description: This temporary modification uses a hose from the Instrument Air System to the Service Air supply line to the Auxiliary Feedwater (AFW) pump room sump pumps. These sump pumps are normally provided motive air from the Service Air subsystem. Since the Service Air subsystem is out of service for Plant Modification Request 02815 implementation, the sump pumps are to be operated with Instrument Air. The temporary hose and associated fittings shall meet cleanliness Class C requirements as a minimum, and maintain ANSI 125 pound class or better. Valve KA V-285, the AFW pump room sump pump Service Air isolation valve, shall be closed to limit Instrument Air use to support sump pump operation only, and to isolate the Instrument and Service Air subsystems.

Safety Evaluation: The AFW pump room sump pumps are not designed to mitigate the consequences of an AFW pipe rupture or any other flood occurrence. These sump pumps are not essential to plant safety or AFW System operability. The connection points are not seismically qualified; therefore, no seismic degradation has been introduced nor has any II/I concerns been introduced by the temporary hose route on the 1974 elevation of the Auxiliary Building. The Instrument Air supplied to the sump pumps is consumed by the pumps and not recirculated back into the Instrument Air System. The solenoid valves on the sump pumps fail closed upon loss of electrical power. The possibility for oil or moisture contaminants or particulate contaminants being introduced into the Instrument Air subsystem has not been increased since the temporary hose shall meet cleanliness requirements. Using instrument air to drive the sump pumps via this change does not increase the probability, possibility or consequences of any previous USAR accident or equipment malfunction. The added load of the sump pumps is not significant to the overall Instrument Air System capacity.

SAFETY EVALUATION: 89-SE-020 Revision: 0

Title: Use Of Special Scope Filter In Reactor Coolant Filter Assembly

Description: This temporary modification is to install a special scope filter in lieu of a qualified filter in the Reactor Coolant filter assembly. The Reactor Coolant filter is located in the letdown line upstream of the Volume Control Tank. The filter collects resin fines and particulates from the letdown stream. The filter which fits into the Reactor Coolant filter assembly is designated as part number 5ESC-10770-2EGJ0-22. The special scope filters are also designated as part number 5ESC-10770-2EGJ0-22. The filters are manufactured by Pall Trinity and are the filters used in the Westinghouse supplied qualified Reactor Coolant filter assembly. Westinghouse buys these filters from Pall Trinity and supplies them, with a certificate of conformance (C of C) which makes them qualified.

Safety Evaluation: The filter cartridges pass 250 gallons per minute while withstanding 75 pounds per square inch for inside to outside flow. The cartridge envelope is maintained at 16.3 square feet of filtration area. The filter is made from epoxy impregnated cellulose fiber media and stainless steel hardware. The filter housing maintains ASME Section III Class 2 status. The qualified and special scope filters are not shipped or stored differently. The lack of a C of C from Westinghouse to designate these filter cartridges qualified does not change the fit, form or function of this item. The probability, possibility or consequences of previously evaluated USAR accidents or equipment malfunctions has not been increased by the lack of a C of C for the filter used by the subject change.

SAFETY EVALUATION: 89-SE-021 Revision: 0 and 1

Title: Installation Of Temporary Jumper Across Battery NK12 Cell 10

Description: This temporary modification allows for the installation of a temporary jumper across cell 10 of the Class 1E 125 volt battery bank NK12 which had a stripped post. Revision 1 was issued to clarify the safety evaluation.

Safety Evaluation: The cell was jumpered out using a cable which maintains system design. The cell remains in the battery bank; therefore, seismic design has not been affected. The USAR describes the Class 1E DC System as a 125 volt system from which, after loss of AC power, 333.3 Amp-Hours is drawn from the bank over the duty cycle duration of 3.3 hours. The USAR states that the battery bank is sized in excess of 150 percent of the system requirements. The bank is rated at 900 Amp-Hours (8 hour rating) and the 333.3 Amp-Hours drawn over 3.3 hours from the bank only takes 333.3/900 or 37 percent of the rated capacity from the bank. The last scheduled battery performance test (capacity) verified the bank's capacity to be 120.7 percent of rated capacity. When the bank was tested it took 9.66 hours for a cell in the bank to approach the reversal criteria of IEEE 450-1980. The removal (electrically) of a cell from the subject bank has been calculated to remove 2.7 percent of the rated capacity of the bank. Because the system's function only requires 37 percent of the total system capacity, the loss of a cell, which represents a 2.7 percent capacity loss, is insignificant to the system's function. The calculation has also shown that it would require the removal of at least five cells before voltage would drop below 105 volts (minimum required) during the worst case load, i.e., station blackout. During a station blackout, AC and charger power are lost; thus, the fully charged battery terminal voltage with one jumpered out cell would be expected to drop to an initial nominal terminal voltage on the order of 120.95 volts verses 123 volts for 60 cells. This lower voltage will not affect the functional requirements of the battery bank. At no time during the station blackout will battery terminal voltage drop below the overall minimum battery voltage of 105 volts. In addition, the removal of one cell or 2.25 volts (if it were a good cell) from the bank which floats between 132-135 volts will not have any noticeable effect upon the system since this loss is within the described float voltage range. It is recommended that the float voltage with one cell jumpered out be adjusted from 133.8 volts to 131.6 volts to keep the float voltage per cell within the instruction manual's recommended range. To provide the same minimum battery voltage of 105 volts with one cell jumpered out, it should be noted that the individual cell voltage has changed from 1.75 to 1.78 volts.

SAFETY EVALUATION: 89-SE-021 Revision: 0 and 1

Safety Evaluation: Continued

The modification to jumper across the cell will cause an imbalance alarm at the system trouble window in the Control Room. The imbalance alarm will stay in when the cell is jumpered out. With cell 10 jumpered out, if another cell between 31 through 60 were to degrade, this condition will clear the alarm window. If a cell between 1 through 30 were to degrade while cell 10 is jumpered out, this condition would not change the alarm window status indication. These responses are the indications the imbalance monitoring instrumentation will provide when considering another degraded cell in the bank concurrent with one cell jumpered out or already degraded. Jumpering out a cell, therefore, does not create the possibility of a different type of imbalance alarm condition from that provided by design. The other system alarm indications are not affected by the jumper. The trouble window will re-flash along with an audio alarm should any of the other nine conditions occur. Local individual alarm indication remains available. The jumper placed by the modification has not introduced any alarm indication abnormal to the monitoring system's design.

The jumper which electrically removed cell 10 from bank NK12 has not degraded the bank from fulfillment of its safety function. Excess capacity beyond that required for previous accident evaluations is available. The jumper has not increased the probability or consequences of previously evaluated accidents or malfunction occurrences.

SAFETY EVALUATION: 89-SE-023 Revision: 0

Title: Procedure For Installation Of Pressure Gauges On Reactor Coolant System Branch Piping

Description: This temporary procedure was written to investigate instances of high pressure build-up in the Safety Injection (SI) System. The procedure introduces a change to the USAR description as it allows for the temporary installation of pressure gauges at test connection locations on Reactor Coolant System (RCS) branch piping.

Safety Evaluation: This temporary installation does not increase the probability, possibility or consequences of system leakage because the temporary gauges and associated fittings are adequately suited for system pressures and temperature. The temporary pressure gauges do not degrade the seismicity of the test connection because they represent an insignificant mass at the test connection. The temporary gauges are installed inside Containment which is a radiologically controlled area. Any potential leakage from the gauges remains within a radiological drainage field. The gauges are installed off of the RCS branch piping whose failure has been evaluated.

The use of the SI test line in the procedure remains within the bounds of normal equipment use. The automatic closure function of the test line's Containment isolation valves has not been affected by the procedure actions. The procedure, in its use of the test line valves, does not vent the piping between the cold leg Emergency Core Cooling System (ECCS) check valves which would introduce a drainage path for the ECCS accumulators. Accumulator level loss via back leakage past check valves EP V-010, 20, 30, and 40 has not been observed when venting the SI system pressure via the test line. The past leakage history of these check valves has shown that they are leak tight, which agrees with current observation. The procedure vents the SI system pressure by the same method; therefore, no adverse affect to accumulator levels is foreseen.

The procedure does not affect plant operations or safety features. The SI test line has no safety function other than pressure boundary and Containment isolation. These functions are not affected by the procedure.

SAFETY EVALUATION: 89-SE-024 Revision: 0

Title: Temporary Modification For Essential Service Water Warming Line Repairs

Description: To make weld repairs of the 30 inch Essential Service Water (ESW) A train warming line downstream of ESW traveling water screen 1A warm water header downstream isolation valve, EF V-264, this valve and the removable spool piece between EF V-264 and EF V-262, ESW traveling water screen 1A warm water header upstream isolation valve, are being removed. Valve EF V-262 will be closed to isolate the warming line supply. To provide additional personnel safety, a temporary blank is being bolted onto the mating flange connection of EF V-262 by the subject temporary modification. The 30-inch warming line provides freeze protection of A train ESW during its operation, (reference USAR 9.2.1.2.2.3). By Technical Specification interpretation, it has been determined that the warming line need not be operable when the cooling lake temperature is above 35 degrees Fahrenheit since the frazil ice hazard is not present. Currently the lake temperature is around 57 degrees Fahrenheit and is heading towards summertime temperatures. The weld repair to the line is expected to last no longer than two weeks. Operations monitors lake temperature and shall begin taking actions to expedite restoration of the line should the lake temperature approach 38 degrees Fahrenheit (two degrees above frazil ice formation).

Safety Evaluation: The 30-inch warming line is a branch off of the 42-inch ESW return line from the plant as it goes back to the ultimate heat sink. The design condition for the return line is 50 pounds per square inch gauge and 200 degrees Fahrenheit. The temporary 3/4-inch carbon steel blank is adequately capable of retaining and providing an isolation should the isolation valve EF V-262 fail. Hence, the possibility of flooding the valve pit and subsequent spill over into the pump house has not been created. The supply capacity of ESW cooling has not been diminished by isolating the warming line. Therefore, the consequences of previously evaluated accidents will not be increased because the cooling capability and ultimate heat sink circuit has not been degraded. The line is encased in the valve pit walls and its seismicity is not adversely affected with the valve and spool piece removed.

System back pressure required for pump operation during Loss of Coolant Accident is retained since the restrictive flow orifice in the return line upstream of the warming line branch off has not been changed.

The subject temporary change introduced to facilitate the repair work has not introduced an unreviewed safety question.

SAFETY EVALUATION: 89-SE-025 Revision: 0 through 3

Title: Temporary Bypass Of Fire Protection System Piping

Description: This temporary modification, revisions 0 through 2, (evaluated in safety evaluation revisions 0 through 3,) provides for the temporary bypass of certain Fire Protection System (FPS) piping located at the Circulating Water Screenhouse (CWSH). At the CWSH, a temporary discharge line from the electric driven fire pump to the underground connection to the power block, and a portion of 1 1/2-inch discharge piping from the jockey pump, which maintains system pressure, was replaced by the original temporary modification. Revision 1 of the temporary modification incorporated a 12-inch valve flanged to the tee on this temporary line.

Revision 2 of the temporary modification incorporates a temporary 12-inch line from the diesel pump out to the temporary valve installed per Revision 1. Also, the modification includes a temporary blind flange at the normal system diesel driven pump line to the underground pipe flange connection to the power block. This blind flange allows the use of the crossover line in the power block. The changes made by this modification are desired because the existing 12-inch lines from the electric and diesel pumps have been taken out of service. The temporary discharge line added by Revision 2 runs outside the CWSH and is supported by dunnage spaced per ASME Table NF-3271.4-1 and has thrust restraints sized per American Water Works Association. Immediately outside the CWSH this line will be anchored to the concrete slab. These temporary supports will adequately handle the static and operational conditions the line is exposed to with reasonable assurance.

Safety Evaluation: The FPS is described in USAR Section 9.5. The major components of the water supplied FPS are: two fire pumps (one electric motor driven, the other diesel engine driven), a jockey pump, distribution mains, fire hydrants with hose houses, standpipes and sprinklers. This system is not required to shut down the plant or maintain it in a safe shutdown condition. This system is not important to safety and is not designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, floods, etc. This system does not have to meet the single failure criteria of safety related systems.

The FPS piping is not II/I evaluated nor seismically qualified at the CWSH. The temporary discharge line from the diesel driven pump will be fabricated from carbon steel 12-inch Schedule 40 or better pipe and fittings. This pipe material exceeds system design pressure and temperature requirements of 175 pounds per square inch and 95 degrees Fahrenheit. This temporary 12 inch line will be hydrostatically tested in accordance with system requirements prior to use. The relief valve at the discharge of the diesel driven pump is not affected by the temporary line nor are the pump's controls. Isolation of the electric and diesel pumps is available by the temporary valve added by Revision 1. This temporary valve shall be normally locked open. Capacity flow was verified after installation of the temporary line installed under Revision 1, therefore the system's surveillance requirements need not be verified to declare the temporary line added by Revision 2 operable. The line installed in Revision 2, which connects to the line installed in Revision 1, is the same size and has not introduced a more limiting restriction in the formerly tested flowpath.

SAFETY EVALUATION: 89-SE-025 Revision: 0 through 3

Safety Evaluation: Continued

The pumping capacity of the FPS is based on the maximum demand, a flow of 2300 gallons per minute (gpm) at a residual pressure or 80 pounds per square inch gauge measured at the most limiting interface point between the site and Turbine Building supply, plus simultaneous flow of 1000 gpm for outside hose streams for a total of 3300 gpm. This capacity is maintained under conditions of failure of one fire pump. The temporary lines added by this modification maintain this system feature.

The Fire Protection Manual requires two fire pumps to remain operable when the plant is in Modes 1 through 4. With one pump out of service, the manual requires the out of service pump be returned to service within seven days or an alternate pump of equal or greater capacity and pressure be provided. Compliance with the Fire Protection Manual will be maintained and has not been violated by this modification. The added temporary line maintains compliance with the Fire Protection Manual because suppression is available in the event of a fire.

SAFETY EVALUATION: 89-SE-026 Revision: 0

Title: USAR Change Request

Description: This USAR Change Request replaces USAR Change Request 88-025 which was cancelled. This USAR change is to reconcile the USAR document with the Technical Specification and Offsite Dose Calculation Manual (ODCM). The area of change is the Alert and High Alarm setpoint values for the 10 Airborne Process Radioactivity Monitors (APRM) listed in USAR Table 11.5-3.

Safety Evaluation: Six APRM monitors, namely the Containment Atmospheric (GT RE-31 and 32), Fuel Building Exhaust (GG RE-27 and 28) and Control Room Air Supply (GK RE-04 and 05) have had the listed value of their high alarm setpoints changed to the Technical Specification limit value listed in Table 3.3-6 of the Technical Specification. The alert alarms for these monitors are administratively set at a value below the high alarm setpoint, usually one decade lower. These setpoint value changes to USAR Table 11.5-3 do not reduce the margin of safety since compliance with the Technical Specification is maintained. This USAR change reconciles the USAR with the Technical Specification.

The two Containment Purge System APRM (GT RE-22 and 33) have had their alert and high alarm values, as listed in the USAR Table 11.5-3, changed from a numerical value to a referenced footnote. The footnote states:

> "High alarm is set to ensure that the Technical Specification limits (the 10 CFR 20 general population Dose Rate for the controlling isotopes at the boundary of the restricted area) are not exceed. See Offsite Dose Calculation Manual."

Technical Specification 3.3.3.11 and Table 3.3-13, which addresses these monitors, state that their alarm/trip setpoints are determined and adjusted in accordance with the methodology and parameters in the ODCM. Therefore, the change to the footnote reference for these monitors in USAR Table 11.5-3 does not reduce the margin of safety because compliance with the Technical Specification is retained and agreement between the USAR, ODCM and Technical Specification is achieved.

The controlling isotope for GT RE-22 and 33 in USAR Tables 11.5-3 and 12.3-3 has also been changed form Kr-85 to Xe-133 as Xe-133 comprises 85 percent of total noble gas activity expected (see Offsite Dose Calculation Manual, Section 3.1.2). This change is in agreement with the methodology for the setpoint calculation of these monitors as specified in the ODCM and Power Generation Design Basis One in USAR Section 11.5.1.2.

The eight monitors addressed above, GT RE-31 and 32, GG RE-27 and 28, GK RE-04 and 05, GT RE-22 and 33 have been and remain set in accordance with the listed values in the Technical Specification. None of these monitors will require being physically reset as a result of this USAR change.

SAFETY EVALUATION: 89-SE-026 Revision: 0

Safety Evaluation: Continued

The Auxiliary Ventilation Exhaust (GL RE-60) and Access Control Area Ventilation Exhaust (GK RE-41) Monitors have been deleted from USAR Table 11.5-4 which lists the Airborne Effluent Radioactivity Monitors (AERM). These monitors are Airborne Radioactivity Monitors (AiRM), not effluent monitors, and are listed in USAR Table 12.3-3. These monitors provide for inplant worker protection in accordance with 10 CFR 20, Table I, Column I. The effluent monitors provide for unrestricted area protection in accordance with 10 CFR 20, Table II, Column I and ensure site boundary doses do not exceed 10 CFR 50, Appendix I levels. Monitors GK RE-41 and GL RE-60 are inplant and upstream of filter absorber unit monitors which do not monitor the radioactivity concentrations at the effluent release point. Monitors GK RE-41 and GL RE-60 have an alarm function only (no isolation or Engineered Safety Features Actuation System function) and are not addressed by the Technical Specification.

These monitors are non-Class 1E powered and are not restored after loss of offsite power. The hi and hi-hi alarm setpoint values for these monitors as listed in USAR Table 12.3-3 have been changed. The new setpoint values have been calculated by qualified chemistry personnel and provide protection for 1 Maximum Permissible Concentration (MPC) and 10 MPC for inplant worker protection. The new setpoint values are more conservative than the old values as previously calculated by the ODCM methodology because they are based upon process rather than effluent criteria where dilution is a factor. These two monitors will be physically reset from an effluent based setpoint to a process based setpoint. These two monitors were erroneously referred to in the ODCM paragraph 3.1.4 as effluent monitors; this paragraph has been corrected by Revision 4 to the ODCM, (reference Safety Evaluation 88-SE-053).

The changes made to USAR Tables 11.5-3 and 4 and 12.3-3 do not increase the consequences of previous USAR accidents since the setpoint changes are in compliance with the Technical Specification and the ODCM. The changes made to these USAR tables will align this document with the ODCM and Technical Specification.

SAFETY EVALUATION: 89-SE-030 Revision: 0

Title: Temporary Banding During Battery Cell Replacement

Description: This temporary modification revision is to provide seismic protection during replacement of cell 10 in Class 1E battery bank NK12 which has a stripped post. Cell 10 was electrically jumpered out by the original temporary modification (reference Safety Evaluation 89-SE-021).

Class 1E battery bank NK12 consists of 60 cells which are physically confined and racked into four rows of 15 cells each, which thereby groups cells 1 through 15, 16 through 30, 31 through 45, and 46 through 60 together. The revision to the temporary modification bands the remaining good cells in the rack together to provide seismic protection when a void will exist in the racked group of cells numbered 1 through 15. This will enable removal and replacement of cell 10 without degrading the seismic integrity of the battery bank. The two-hour Limiting Condition for Operation allowed by Technical Specification 3.8.2.1 is not sufficient to perform both the mechanical and electrical work involved in replacing cell 10. The mechanical work involves cell removal and replacement, whereas the electrical work involves jumper removal and connection of the replacement cell. The mechanical portion of the job will be performed while the bank is operable.

Safety Evaluation: The USAR states that the batteries, racks and chargers are designated Seismic Category 1 and are designed to maintain their functional capability during and after a Safe Shutdown Earthquake. Banding the remaining cells in the rack will secure them such that the bank's seismic ability will not be degraded. The cells will be bound together with nylon slings and straps, in good working condition, of at least a 5,000 pound rating. Design engineers have reviewed the banding method of securing the operable cells and have concluded that it provides adequate seismic protection to ensure the operability of the bank. The cells will be bound only for the brief period of time (estimated to be less than one hour) needed to facilitate the replacement activity. As soon as the replacement cell is put in place, the seismic qualification of the rack will be returned to normal. Conductor failure probability is not increased by the subject actions.

The probability, possibility or consequences of previously evaluated accidents have not been increased because the operability of the bank is not degraded or reduced by the banding actions. The malfunction consequences of the bank remain within the envelope of previous analysis.

SAFETY EVALUATION: 89-SE-031 Revision: 0

Title: Demineralized Water Storage And Transfer System Drain Hose

Description: This temporary modification attaches a drain hose to a capped low point drain line at the Demineralized Water Storage and Transfer System (DWSTS) degasifier vacuum pumps second stage to Turbine Building heating, ventilation and air conditioning drain valve AN V-148, which is normally closed. This changes the system from its description in the USAR (reference USAR Figure 9.2-16.) The drain hose is being connected to prevent oil carry over from the vacuum pumps to the condenser air removal radiation monitor. The drain hose flow is routed to the Turbine Building drainage system.

Safety Evaluation: This change occurs on non-Seismic, non-augmented piping in the Turbine Building. The DWSTS stores water for use upon demand for makeup within the plant. The DWSTS receives filtered and demineralized water from the Demineralized Water Makeup System (DWMS). For Reactor makeup, a degasifier removes oxygen from the demineralized water as it is transferred. The effluent from several systems that process waste can be recycled within the plant and are passed through the DWSTS degasifier before being transferred to the Reactor Makeup Water Storage Tank (RMWST). The DWSTS has no active or passive safety function, has no safety design basis, and is not required to achieve or maintain safe shutdown.

This change is not detrimental to the degasifier skid's operability. The reliability and operability of the condenser air removal radiation monitor is actually enhanced by the change since the ability to decant the oil mist from the vacuum pump exhaust gases is improved. The quality of Reactor makeup water has not been degraded by this change. This change does not increase the possibility or consequences of a fire since drain and vent flow routes have not changed.

SAFETY EVALUATION: 89-SE-032 Revision: 0

Title: Installation Of Temporary Pressure Gauges

Description: In support of gathering data on the Essential Service Water (ESW) System pressure at the Class 1E and Control Room air conditioning units, this temporary modification installs temporary pressure gauges on the drains to each unit's condenser. This instrumentation is not reflected on USAR Figure 9.4-1; therefore, the modification has introduced a change to the Control Building Heating, Ventilation and Air Conditioning (HVAC) System from its description in the USAR.

Safety Evaluation: The Control Building HVAC drain piping is Seismic Category I and its design pressure is 200 pounds per square inch gauge (psig). The total deadhead of an ESW pump is 361 feet, i.e., 156 psig. The commercial pipe fittings/connectors employed in attaching the gauges are capable of maintaining system pressure design. The added weight of approximately 5 pounds for each gauge is not rigidly connected to the system, but are connected via a flexible metal hose or equivalent. This temporary connection method does not alter the seismicity of the Control Building HVAC drain piping. Attaching the test gauges on the Control Building HVAC drain piping does not increase the probability or possibility of the occurrence of equipment malfunction or failure.

SAFETY EVALUATION: 89-SE-033 Revision: 0
and 89-SE-040 Revision: 0

Title: Installation Of Temporary Pressure Gauges

Description: In support of gathering post-Loss Of Coolant Accident (LOCA) flow information on the Essential Service Water (ESW) system, a temporary procedure has been written to install temporary gauges on the ESW main supply lines of each train. The temporary gauges are to be installed off of existing vent, drain and flow element taps. This instrumentation is not reflected on USAR Figure 9.2-2; therefore, the modification has introduced a change to the ESW system from its description in the USAR.

Revision 2 to the temporary procedure, and its associated Safety Evaluation 89-SE-040, reduces unnecessary conservatism found in Revision 1 to the temporary procedure and its associated Safety Evaluation 89-SE-033, by deleting the use of a parallax error with the reading of the gauges used in the test and using flow element errors as found in WCRE01, Total Plant Setpoint Document and correcting Attachmnent B for the ESW pump, PEF01B Curve with Enlarged Area of Interest. These changes will calculate more realistic flow values with the data obtained in the test.

Safety Evaluation: The ESW piping is Seismic Category I and its design pressure is 200 pounds per square inch gauge (psig). The total deadhead of an ESW pump is 361 feet, i.e., 156 psig. The commercial pipe fittings/connectors employed in attaching the gauges are capable of maintaining system pressure design. The added weight of approximately 5 pounds for each gauge is not rigidly connected to the system, but is connected via a flexible metal hose or equivalent. This temporary connection method does not alter the seismicity of the ESW piping. Attaching the test gauges on the ESW piping does not increase the probability or possibility of the occurrence of equipment malfunction or failure.

SAFETY EVALUATION: 89-SE-034 Revision: 0 and 1
and 89-SE-043 Revision: 0

Title: USAR And Administration Procedure Change

Description: The subject USAR change and procedure change are administrative and editorial in composition. The Results Engineering Group will no longer perform maintenance of the Wolf Creek quality (Q)-List at the parts level. This responsibility has been transferred to Nuclear Plant Engineering. The change to USAR Section 13.1, "Organizational Structure of the Operating Agent," is addressed in Safety Evaluation 89-SE-034. The change to Procedure ADM 01-047, "Classification of Parts," is addressed in Safety Evaluation 89-SE-043. Revision 1 to Safety Evaluation 89-SE-034 was issued to clarify the evaluation.

Additionally, the maintenance of the Computer Setpoint Document and technical review of safety related purchase requisitions will be deleted from the Results Engineering Group's scope of responsibility as described in this USAR section. These tasks will be performed by other responsible groups, i.e., Technical Support and Nuclear Plant Engineering respectively.

Safety Evaluation: These changes are administrative and editorial in nature and lack the potential to involve an unreviewed safety question. The administrative change is deemed to lack the potential of possibly introducing a different type of accident. Equipment hardware is not affected by the change; therefore, its malfunction probability or consequences is not increased. The frequency and consequences of accidents previously evaluated in the USAR have not been increased because the barriers of safety, both physical and operational have not been affected. The functional requirements of the onsite and offsite organizations and the qualification requirements of the unit staff as specified by Technical Specifications 6.2.1 and 6.2.2 are maintained with no reduction introduced.

SAFETY EVALUATION: 89-SE-035 Revision: 0

Title: USAR Change Request

Description: The subject USAR change is administrative and editorial in composition. The changes occur in USAR Section 13.1, "Organizational Structure of the Operating Agent." The areas of change are the title changes from Health Physicist/Site Health Physicist to Manager Radiation Protection in this USAR section and the updating of the resume of the Manager Radiation Protection. The qualifications of the Manager Radiation Protection have not been affected by the subject USAR change.

Safety Evaluation: These changes are administrative and editorial in nature and lack the potential to involve an unreviewed safety question. Assessment of the subject change is deemed incapable of having the potential to have the possibility of creating a different type of accident. Equipment malfunction probability has not been increased because equipment integrity has not been affected by the change. Malfunction of equipment consequences have not been increased by the subject change because plant hardware is not affected. Consequences remain within previously evaluated limits because no safety barriers, physical or operational, have been affected by the change. The frequency of accidents previously evaluated in the USAR has not been increased by the subject USAR editorial changes. The functional requirements of the onsite and offsite organizations and the qualification requirements of the unit staff as specified by Technical Specifications 6.2.1 and 6.2.2 are maintained with no reduction introduced.

SAFETY EVALUATION: 89-SE-037 Revision: 0

Title: Temporary Cooling To Class 1E Switchgear

Description: This evaluation supports a temporary procedure to initiate temporary cooling to Class 1E 125V DC (NK) rooms and Class 1E 4.16KV (NB) switchgear rooms upon the loss of both Class 1E electrical equipment air conditioning (A/C) units, SGK05A and SGK05B. This procedure will be used to provide cooling for the NK battery rooms and the vital switchgear rooms and the Engineered Safety Features switchgear rooms upon the loss of both SGK05A and SGK05B. This is necessary should SGK05A/B fail, for whatever reason, and the other SGK05 unit is out-of-service for maintenance/testing. If, during the maintenance on the out-of-service SGK05 unit, the other unit becomes inoperable, the plant will comply with the provisions of Technical Specification 3.0.3.

If a Safety Injection (SI) occurs and the SGK05 unit that is in-service fails to operate, this procedure will use the access control fan coil unit, SGK03, and a temporary A/C unit, both non-safety A/C units to provide cooling.

The normal supply ducts from SGK03 will be isolated and temporary supply lines (adapters with "elephant trunks") will be routed through doors and hallways on the 2016 level and 2000 level of the Control Building to the battery rooms and the switchgear rooms. The temporary A/C unit can be placed in the hallway on the 2016 level and temporary ductwork routed to where the cooling is needed.

Safety Evaluation: The temporary ductwork is flexible and of a low mass and will not adversely affect the seismicity of the installed ductwork.

During the time that these units are in operation, it is assumed that a loss of offsite power does not occur. The probability of a SI signal occurring and a SGK05 unit failing to start has been placed at 5.8E-5/reactor years. This was the postulated probability for 144 hours. If, however, the necessity for operating the temporary non-safety related A/C unit is for less than 24 hours, the probability becomes 9.6E-6/reactor years. A loss of offsite power concurrent with this has an extremely low probability.

The equipment that will be used is non-safety related but will have to operate for less than 24 hours. During this short period of time, the reliability of this equipment is judged to be adequate. Should a SI signal occur and the in-service SGK05 unit fails to operate, the unit undergoing maintenance/testing can be returned to service in less than 24 hours. This unit would then pick up the cooling loads of the battery and switchgear rooms.

Train separation in the rooms cooled by this procedure is accomplished using fire doors between the rooms. The fire impairment program will be complied with and should a fire occur in a room, the doors to the room will be closed and cooling ductwork rerouted appropriately.

SAFETY EVALUATION: 89-SE-037 Revision: 0

Safety Evaluation: Continued

The cooling capacity of the SGK05 units is 30 tons of cooling each. The combined cooling capacity of SGK03 and the temporary A/C unit is 15 1/2 tons. However, if the temporary unit is placed inside of the Control Building, the effective capacity of the units is the 12 1/2-ton capacity of SGK03. This is because the heat rejected by the temporary A/C unit must be removed from the building by SGK03. The temporary A/C unit can enhance localized cooling in selected areas.

The heat load of the battery rooms is 2500 British thermal units (BTU)/hour each, the switchgear rooms are 35,000 BTU/hour each, and an ESF switchgear room is 150,000 BTU/hour for a total of 225,000 BTU/hour or 18 tons of cooling. The effective cooling of the SGK03 unit and the temporary A/C unit is 12 1/2 tons. The 18 tons is required for the worst case and for an extended duration. The temporary cooling will only be necessary for less than 24 hours.

We predict that the temperature in the rooms cooled by SGK05A and B would not rise enough to fail the equipment contained in these rooms during the time required to restore one SGK05 unit or bring the unit to a safe shutdown.

Additionally, a temporary eight-ton unit exists outside of the Control Building. If conditions existed such that the Control Building could be opened to the outside, this unit could bring the combined cooling capacity of the three units to 20 1/2 tons, which exceeds the 18-ton maximum requirement.

Unless the temporary eight-ton unit is being utilized, the Control Building pressure boundary will remain intact and the Control Room pressurization system will remain operable. All plant procedures governing fire impairment control and security access will be adhered to.

The equipment necessary to perform this procedure is staged in the areas that it is required and it is estimated that the cooling can be initiated in well under the 30 minutes it could take for these rooms to heat up to the point that the operability of some of the equipment would be in jeopardy.

Therefore, this procedure can maintain safety related plant equipment in a proper environment for the time necessary to restore safety related A/C sources or bring the unit to a safe shutdown and does not pose an unreviewed safety question.

SAFETY EVALUATION: 89-SE-038 Revision: 0 and 1
and 89-SE-039 Revision: 0 and 1

Title: Modification Of Control Building Air Conditioning Unit

Description: This temporary modification replaces the worn out packing at the Control Room air conditioning (A/C) unit (SGK04A) compressor's discharge valve with a non-qualified O-ring to prevent the leakage of refrigerant. Loctite gasket eliminator sealant will be applied to the paper gaskets of several valves on the refrigerant side of the unit. Additionally, included within the scope of this modification will be the replacement of the kinked 3/4-inch copper tubing to the condenser's shellside pressure transmitter. Revision 1 to this temporary modification, and associated Safety Evaluation 89-SE-039, adds the replacement of the nipples on each end of the 3/4-inch copper tubing that connects the condenser's shellsides and pressure transmitter. Revisions to the safety evaluations were issued to clarify statements made in the safety evaluations and to provide for the permanent replacement of the non-qualified O-ring with packing as soon as possible (reference Work Request 02819-89).

Safety Evaluation: The Control Room A/C unit is safety related and provides the Control Room personnel and equipment with a conditioned atmosphere during normal and accident conditions. This unit is in a mild environment post-accident (reference USAR Table 3.11(B)-3, Sheet 111); therefore, the qualifications of this unit need not meet the requirements for harsh environment exposure.

The O-ring to be utilized adequately fits the physical dimensions of the area to be sealed. The O-ring will be used on the discharge valve of the compressor which is only used during maintenance of the unit and is not manipulated during unit operation. Non-qualified O-rings have been used on the refrigerant side of an A/C unit at the plant with no adverse effects or leakage incurred.

The application of the gasket eliminator sealant, which has been used in the past on non-qualified A/C units, has proven to be of benefit. This sealant will enhance the refrigerant's pressure boundary by preventing leakage at the gasket. The replacement of the 3/4-inch copper tubing is with like material; therefore, system integrity is maintained.

The subject changes do not increase the probability or possibility of system malfunction because they all ensure the integrity of the refrigerant's pressure boundary. Loss of refrigerant could occur during normal system operation. This system failure would adversely affect the cooling capability of the unit. The subject changes made to the refrigerant side of the unit lack the potential to create a new or different type of system failure or malfunction from that previously evaluated because loss of refrigerant is foreseen as the limiting failure which can occur. The subject changes do not affect system setpoints or performance variables.

Therefore, the ability to maintain the Control Room within the allowable limits as specified by the Technical Specification is maintained. The subject changes do not affect the filtration or pressurization functions of the Control Room Heating, Ventilation, and Air Conditioning System.

SAFETY EVALUATION: 89-SE-041 Revision: 0 and 1

Title: Modification Of Class 1E Equipment Air Conditioning Unit

Description: This temporary modification replaces the worn out packing at the Class 1E Equipment air conditioning (A/C) unit (SGK05B) compressor's discharge valve with a non-qualified O-ring to prevent the leakage of refrigerant. Loctite gasket eliminator sealant will be applied to the paper gaskets of several valves on the refrigerant side of the unit. Revision 1 to the safety evaluation was issued to clarify statements made in the safety evaluation and to provide for the permanent replacement of the non-qualified O-ring with packing as soon as possible (reference Work Request 02819-89).

Safety Evaluation: The Class 1E Equipment A/C unit is safety related and provides the Class 1E Equipment with a conditioned atmosphere during normal and accident conditions. This unit is in a mild environment post-accident (reference USAR Table 3.11(B)-3, Sheet 111); therefore, the qualifications of this unit need not meet the requirements for harsh environment exposure.

The O-ring to be utilized adequately fits the physical dimensions of the area to be sealed. The O-ring will be used on the discharge valve of the compressor which is only used during maintenance of the unit and is not manipulated during unit operation. Non-qualified O-rings have been used on the refrigerant side of an A/C unit at the plant with no adverse effects or leakage incurred.

The application of the gasket eliminator sealant, which has been used in the past on non-qualified A/C units, has proven to be of benefit. This sealant will enhance the refrigerant's pressure boundary by preventing leakage at the gasket.

The subject changes do not increase the probability or possibility of system malfunction because they all ensure the integrity of the refrigerants pressure boundary. Loss of refrigerant could occur during normal system operation. This system failure would adversely affect the cooling capability of the unit. The subject changes made to the refrigerant side of the unit lack the potential to create a new or different type of system failure or malfunction from that previously evaluated because loss of refrigerant is foreseen as the limiting failure which can occur. The subject changes do not affect system setpoints or performance variables.

Therefore, the ability to maintain the Class 1E Equipment within the allowable limits as specified by the Technical specification is maintained. The subject changes do not affect the filtration or pressurization functions of the Class 1E Equipment Room Heating, Ventilation, and Air Conditioning systems.

SAFETY EVALUATION: 89-SE-042 Revision: 0

Title: Modification Of Control Building Air Conditioning Unit

Description: Due to lack of suitable safety related replacement material, this modification supplements the worn out packing at the Control Room air conditioning (A/C) unit (SGK04B) compressor's isolation valves with non-qualified O-rings to prevent the leakage of refrigerant. Loctite gasket eliminator sealant will be applied to the paper gaskets of several valves on the refrigerant side of the unit.

Safety Evaluation: The Control Room A/C unit is safety related and provides the Control Room personnel and equipment with a conditioned atmosphere during normal and accident conditions. This unit is in a mild environment post-accident (reference USAR Table 3.11(B)-3, Sheet 111); therefore, the qualifications of this unit need not meet the requirements for harsh environment exposure.

The O-rings to be utilized adequately fit the physical dimensions of the area to be sealed. These O-rings and the gasket eliminator sealant have been used on the refrigerant side of an A/C unit at the plant with no adverse effects or leakage incurred.

The packing already in the valves is not being removed. The valves are normally open isolation valves and any O-ring degradation due to contact with the refrigerant will not inhibit the valves from performing as they would with any normal packing degradation.

The subject changes do not increase the probability or possibility of system malfunction because they all enhance the integrity of the refrigerant's pressure boundary. Loss of refrigerant could occur during normal system operation. The subject changes lack the potential to create a new or different type of system failure or malfunction from that previously evaluated because loss of refrigerant is foreseen as the limiting failure which can occur. The subject changes do not affect system setpoints or performance variables.

Therefore, the ability to maintain the Control Room within the allowable limits as specified by the Technical Specification is maintained. The subject changes do not affect the filtration or pressurization functions of the Control Room Heating, Ventilation, and Air Conditioning System.

SAFETY EVALUATION: 89-SE-044 Revision: 0

Title: Temporary Procedure For Control Room Air Conditioning Condenser Flow Data

Description: This temporary procedure was developed in support of gathering system cooling water pressure data of the Control Room air conditioning units, SGK04A and B. Temporary pressure and differential pressure gauges are being installed by the procedure off of the drain and vent connections at each condenser. This instrumentation is not reflected in USAR Figure 9.4-1; therefore, the modification has introduced a change to the Control Building Heating, Ventilation and Air Conditioning (HVAC) System from its description in the USAR.

Safety Evaluation: The Essential Service Water (ESW) and the Control Building HVAC piping is Seismic Category I and its design pressure is 200 pounds per square inch gauge (psig). The total deadhead of an ESW pump is 361 feet, i.e., 156 psig. The commercial pipe fittings/connectors employed in attaching the temporary instrumentation are capable of maintaining system pressure. The added weight of approximately 5 pounds per gauge is not rigidly connected to the system, but are connected via a metal flex hose or equivalent. This temporary connection method does not alter the seismicity of the piping. Control Room air conditioning unit operability and reliability are not affected by the temporary instrumentation because this instrumentation does not interface or adversely affect system performance. Attaching the test gauges on the ESW and the Control Building HVAC piping does not increase the probability or possibility of the occurrence of equipment malfunction or failure nor increase the consequences thereof.

SAFETY EVALUATION: 89-SE-045 Revision: 0

Title: Addition Of Electrical Maintenance Shop Building

Description: This evaluation addresses the 30 feet by 75 feet addition to the Electrical Maintenance Shop Building, north and west of the Turbine Building.

Safety Evaluation: This addition does not introduce an impediment to the drainage around the plant. The initiators of a flood occurrence event have not been increased or affected by the Electrical Maintenance Shop Building addition. Review of the flood analysis has concluded that no increase in flood hazards has been incurred by incorporating the addition to the Electrical Maintenance Shop Building. The site flood hazards analysis has not been compromised by the introduction of this addition. An above plant grade flood level event has not been created by this change. This addition is remote to the buildings housing equipment important to safety and does not physically or electrically interface with any plant equipment. Therefore, this addition lacks the ability to increase the malfunction consequences of plant equipment or influence the operability of any plant equipment. A review of the Technical Specifications found no margins reduced as a result of this addition.

SAFETY EVALUATION: 89-SE-045 Revision: 0

Title: Auxiliary System Heating, Ventilation And Air Conditioning System Valve Lineup

Description: This procedure change is being made to change the normal position of globe valve GL V-148 from the open to closed position. The subject procedure specifies the normal Auxiliary Building Heating, Ventilation and Air Conditioning (HVAC) System valve lineup status. This valve is shown on USAR Figure 9.4-3 in the open position; hence, the procedure change introduces a change to the facility from its description in USAR. However, in USAR Section 9.4.3.2.3, the operation of the Auxiliary Building HVAC System is described. Review of this text material leads one to the conclusion that this valve should normally be in the closed position.

Valve GL V-148 is in the hard pipe portion of the connection between the Containment hydrogen purge subsystem (HPS) penetration piping and the HVAC ductwork of the Emergency Exhaust System (EES). This connection feature is provided to control the combustible gas concentration in Containment post-Loss Of Coolant Accident (LOCA). The penetration is provided with motor operated isolation valves which are normally closed.

Following a LOCA, if the HPS is used, the air purged from the Containment is ducted to the EES for processing and release through the Unit Vent. To protect the ductwork from over-pressurization and to provide a means of maintaining the HPS flow within design limits, globe valve GL V-148 is provided downstream of the outboard hydrogen purge Containment isolation valve. Valve GL V-148 is located in the South Electrical Penetration Room and is manually adjustable from there. Provided immediately downstream of the valve is a pressure indicator for monitoring system pressure. The system flow can be maintained within the design limits as the Containment pressure decreases by adjusting the valve as necessary to achieve the required downstream pressure.

Safety Evaluation: Changing the subject valve's status position to normally closed removes the probability and possibility of over-pressurization of the ductwork upon occurrence of an inadvertent opening of the HPS penetration post-LOCA. The ability to control the purging of Containment post-LOCA has not been compromised by the subject change. Containment integrity is not affected by the subject change because the Containment HPS isolation valves are not affected. After review and assessment of the subject change, it is concluded that the change does not increase the consequences of any previously evaluated USAR accidents or equipment malfunctions, nor does it increase the probability or possibility of these events.

SAFETY EVALUATION: 89-SE-047 Revision: 0

Title: Off-Normal Procedure Change

Description: The subject procedure change provides direction to the Control Room operators on how to mitigate a Steam Generator (SG) tube leak within the capacity of one Centrifugal Charging Pump (CCP). This procedure change was initiated as a result of a Westinghouse Owners Group letter on the potential for plug top leakage from installed Westinghouse mechanical SG tube plug(s) due to stress corrosion cracking.

The procedure actions added involve taking manual control of the Atmospheric Relief Valve (ARV) of the affected SG and closing it or removing it from operation by closing its manual block valve. This action is taken when shutting the plant down after the Reactor and Turbine are manually tripped at approximately 30 percent power. In the SG tube rupture (SGTR) USAR analysis, the Reactor trips automatically at 100 percent power and the ARV of the faulted SG is assumed in automatic control until RCS and secondary pressures are equalized. The Control Room operators would enter the emergency procedure in this situation as one CCP would not be capable of maintaining system pressure. Additional procedure changes call for using the leaking SG(s) with the least activity when the intact SGs are not available for cooling down and offsite power has been lost, i.e., steam dumps to the condenser are not available.

Safety Evaluation: These procedure changes were initially assumed to affect nuclear safety in a way not previously evaluated in the USAR. However, after reviewing the USAR, it is concluded that these procedure changes fall within the bounds of the SGTR accident analysis.

The Chapter 15 SGTR analysis considers a complete severance of a single SG tube with subsequent Reactor trip and a coincident station blackout. These plant conditions result in a steam discharge to the atmosphere through the SGs Safety and Relief Valves. The Control Room operators are expected to determine that a SGTR has occurred and to identify and isolate the affected SG within 30 minutes.

In calculating the radiological consequence of this accident, the steam releases from all the SGs to the atmosphere is considered until eight hours after the accident. This accident discharge assumes that 17 percent of the Reactor coolant leakage flashes to steam and is released directly to the environment along with all the noble gas activity in the leakage flow. The Residual Heat Removal (RHR) System is assumed to be in operation to cool down the plant eight hours after the accident.

The Off-Normal Procedure actions of isolating the leaking SGs and isolating its associated ARV are within the bounds of the previously evaluated USAR SGTR analysis. The procedure action of taking manual control or blocking an ARV is not limited to just one SG if more than one SG has a small primary to secondary leak. These actions are in agreement with the USAR mitigation actions, (i.e., identify, isolate, cooldown). The SGTR analysis assumes that the SGs are all controlled (automatically) at the ARV settings because it models the maximum activity release. The ARV is not essential for providing overpressure protection of its SG and associated piping because the Code

SAFETY EVALUATION: 89-SE-047 Revision: 0

Safety Evaluation: Continued

Safety Relief Valves remain available. Therefore, removing the operation of the affected SG(s) ARV does not create or increase the possibility of a different type of accident or equipment malfunction nor the consequences thereof. Failure of an ARV has been previously evaluated, (reference USAR Table 10.3-3). Only one ARV is required to cool the plant down to where RHR can be cut in.

The procedure does require that at least one SG be maintained available for cooldown. This action complies with the Technical Specification in that it does not allow for isolation of all SG ARVs. This situation is possible if one ARV is out-of-service, say for maintenance, another ARV is considered as a single failure and the remaining two SGs both have tube leaks. These leakage conditions would have to be within the capability of one CCP for the subject procedure to be used. It is considered more likely that this situation would be handled by the emergency procedure.

The radiological consequences of this plant event would remain within the bounds of the previously evaluated USAR SGTR analysis because the leakage flow would release less activity to the environment than a break flow. Additionally, this conclusion is further supported by the evaluation made on the impact of leakage from the secondary Code Safety Valves on the Chapter 15 Accident Analysis. This evaluation assumed a leakage from the Safety Valves of up to 66 pounds per minute per SG after isolation of the affected SG during the SGTR accident. The radiological consequences of this event were well within the consequences of the Chapter 15 SGTR analysis. The radiological consequences of using a leaking SG to cooldown the plant would be similar to those of a leaking safety valve during a SGTR which has been shown to be well within the bounds of the SGTR accident analysis.

SAFETY EVALUATION: 89-SE-048 Revision: 0

Title: Installation Of Locking Device On Generator Exciter Air Cooler Valve

Description: This temporary modification allows for the installation of a locking bar and backup locking device to generator exciter air cooler Closed Cooling Water System (CLCWS) outlet temperature control valve EB TV-36, to lock the valve in the fully open position. The operating lever to EB TV-36 broke between the valve operator and stem allowing the valve to go closed, cutting off the cooling water to the generator exciter coolers. By locking EB TV-36 in the fully open position, downstream gate valve EB V-14 can be throttled to control the temperature until EB TV-36 can be permanently repaired.

Safety Evaluation: The CLCWS receives heat from the Turbine Building miscellaneous plant equipment and rejects it to the Service Water System. The CLCWS serves no safety function and has no safety design basis. In the CLCWS heat exchanger, heat is rejected to the service water passing through the tubes.

The USAR states that cooling water flow rate to the electrohydraulic control (EHC) coolers, Steam Generator feed pump turbine lube oil coolers, and generator exciter air cooler is regulated by automatic control valves. Control valves in the cooling water outlet from these units are throttled in response to temperature signals from the fluid being cooled. The subject modification provides compensatory actions for the removal of this valve's function by manually throttling downstream gate valve EB V-014. This compensatory action is satisfactory for the exciter's air cooler operation. It is recommended that exciter air temperature be monitored and valve EB V-014 be throttled accordingly to meet cooling needs. Air side temperature alarms are provided; therefore, indication of high exciter air temperatures are provided by design.

The subject changes and compensatory actions do not increase the probability, possibility or consequences of any previously evaluated equipment important to safety malfunctions or accidents because they do not degrade or adversely affect any physical safety barriers nor safety system performance functions.

SAFETY EVALUATION: 89-SE-049 Revision: 0

Title: O-ring Replacement

Description: An emergency temporary modification installed a non-safety related, non-qualified O-ring from tool room stock to replace a damaged, safety related Viton O-ring between the check valve and four-way block valve on the Red Train hydraulic actuator of Feedwater Isolation Valve (FWIV) AE FV-40.

Safety Evaluation: The safety evaluation, completed after the installation of the emergency temporary modification, concluded that since the age, condition or material of the replacement O-ring is unknown or cannot be determined, the reliability of the valve to perform its safety function is indeterminate.

Upon verbal notification of the results of the safety evaluation, a 24-hour action statement was entered and the indeterminate O-ring was replaced with a qualified O-ring. The Plant Safety Review Committee concurred that since the potentially nonconforming material was replaced, an unreviewed safety question no longer exists.

SAFETY EVALUATION: 89-SE-050 Revision: 0

Title: Temporary Removal Of Acid Neutralization Tanks From Service

Description: This temporary procedure allows for the temporary plugging of the drain lines to acid neutralization tanks TLE03 and TLE04 and removing the tanks from service. These tanks need to be temporarily removed to facilitate inspection. After the tanks are removed the floor drains will be plugged and the pipes blind flanged at the tank.

Acid neutralization tank TLE03 is located at the north end of the Turbine Building at the 2000 feet elevation. The floor drains from the PK11, 12 (125 volt) battery room go to this tank. Acid neutralizing tank TLE04 is located in the Communication Corridor at the 2000 feet elevation. The floor drains from PK13, 14 (125 volt) battery room and the NK11, 12, 13, 14 (125 volt) battery rooms go to this tank.

Safety Evaluation: These tanks and associated drain systems are part of the Oily Waste collection system. The USAR describes how each battery room floor drain network is provided with an acid neutralization tank designed to neutralize the amount of acid contained within approximately 25 percent of the battery cells in the event of a break in the batteries. Temporarily removing the neutralizing tanks does not increase the probability of occurrence of previously evaluated accidents.

The amount of fluid contained within the batteries does not constitute a flood hazard. Any leakage will be confined to the battery room floors. In the case of gross breakage, the fluid could flow under the battery room doors and into the open Oily Waste floor drains of the adjoining rooms. In any case, the spilled electrolyte can be manually neutralized or diluted and the floors and drains flushed.

The consequences of this temporary change do not affect the Control Building positive pressurization capability. The potentially noxious and corrosive vapors will be vented from the rooms by the normal ventilation systems in the same manner as designed. No increase or different release pathway has been created by this temporary change. The Control Room habitability has not been compromised since the Heating, Ventilation and Air Conditioning Systems which provide a function important to safety have not been affected or been introduced to an increase in malfunction probability.

SAFETY EVALUATION: 89-SE-051 Revision: 0

Title: Scaffolding Request

Description: This evaluation approves the temporary placement of scaffolding inside the exhaust duct of the Diesel Building ventilation system. The load on the scaffolding deck shall be limited to less than 400 pounds. The load will be distributed on the turning vanes. The supports will be run above or as close as possible to the existing supports and will be secured to the vanes where possible to prevent movement. Scaffolding is to be held captive in the duct and introduces no adverse seismic concerns.

Safety Evaluation: Placing scaffolding inside the exhaust duct of the Diesel Building ventilation system will block approximately 25 percent of the exhaust duct cross sectional areas. This will not affect the Train "A" Emergency Diesel Generator operation if the supply air system is operating because the supply air system is the primary source of combustion air for the diesel engine.

However, to assure a source of combustion air, regardless of the operating status of the supply air system, exhaust damper GM HZ-9 opens automatically upon a diesel start. Therefore, the exhaust duct serves as a backup source of combustion air.

To maintain the assurance of adequate combustion air, damper GM TZ-1A in the supply ductwork will be opened for the duration of the exhaust duct blockage. Ventilation fan CGM01A does not need to operate to provide combustion air.

SAFETY EVALUATION: 89-SE-052 Revision: 0
and 89-SE-053 Revision: 0

Title: Emergency Exhaust Heater Control Jumpers

Description: These temporary modifications allow temporary jumpers around the master and slave silicon control rectifier (SCR) power controllers in the Emergency Exhaust heating coils, EGG10A and EGG10B. The SCR power controllers receive input from moisture detectors and act to ensure relative humidity is maintained below 70 percent. These modifications are being made due to malfunctioning of the SCR power controllers to maintain operability of the EGG10A and EGG10B until suitable repairs can be completed. This modification will apply full voltage to the heaters at all times when exhaust fans CGG02A and CGG02B are operating.

Safety Evaluation: The Emergency Exhaust System is safety related and is required to function following a design basis accident and to maintain the plant in a safe shutdown condition. These modifications will assure that incoming air to emergency filter adsorber units FGG02A and FGG02B is maintained below 70 percent humidity as required by USAR Section 9.4.2.2.3. This configuration will not disturb the high temperature alarms associated with the charcoal filters for FGG02A and FGG02B. Addition of the jumper will not affect the seismic response of the units.

SAFETY EVALUATION: 89-SE-054 Revision: 0

Title: Reactor Coolant Pump Seal Return Alternate Flowpath

Description: In order to facilitate the Local Leak Rate Testing (LLRT) of Penetration P-24 in the Reactor Coolant Pump (RCP) seal water return line, all flow through the penetration must be stopped. This can be accomplished by diverting the RCP seal water return flow to the Reactor Coolant Drain Tank (RCDT), THB09. This procedure places a jumper from a drain connection in the seal return line to a drain connection in the excess letdown line to the RCDT. The jumper is upstream of Penetration P-24 and permits isolation of the penetration valves for LLRT. All RCP seal return flow is diverted through the jumper into the excess seal return line to the RCDT. The seal return line nominal flow is 12 gallons per minute (gpm). The excess letdown line is designed for a flow rate of 24 gpm. Thus, a minimum seal water flow rate can be maintained through the excess letdown line to the RCDT.

Safety Evaluation: The jumper is one inch nominal pipe size, as are the drain connections downstream of the excess letdown to seal water heat exchanger line drain valve BG V-454, and the excess letdown to RCDT line drain valve BG V-580, to which the jumper would be connected. The seal return line is a two-inch line and the excess letdown line is a one-inch line. However, due to pressure reduction in the RCP seals and throttling on combined RCP seal number 1 leak-off return throttle valve BG V-202, the one-inch jumper and one-inch excess letdown lines are adequately sized to accept the seal return flow and not cause an overpressure situation in the lines nor cause increased back pressure on the RCP seals.

The temporary jumper is a stainless steel, double braided flexible hose or equivalent. Being flexible, the drain lines that are connected by this jumper will not be rigidly connected. The drain line at BG V-454 is off a Seismic Category I line and the drain line BG V-580 is off a non-Seismic Category I line. The flexible hose ensures that the seismic qualification of the Category I line is not effected and is maintained. Failures of the drain line to piping connections, as a type, are discussed in USAR Section 3.6.2.1.1.b. The hose has a working pressure of 1000 pounds per square inch (psi), and a test pressure of 1500 psi. The piping to which the jumper is connected is 150 pound design line. The hose is non-Qualified but all fluid passing through it will be going to radwaste.

Installing the jumper and rerouting the seal water return flow will not increase the probability of occurrence of a previously evaluated accident. Any seismic concern presented by the jumper is eliminated by the use of a flexible hose.

The routing of the seal water return flow is not important to safety. The Containment isolation valves, which are bypassed by this procedure, will remain operable. The back pressure on the RCP seals is maintained by the same throttle valve (BG V-202) as normal.

The seal water return, in the event of an accident, will remain in the Containment. This is true for the normal return path as well as the excess letdown flow path to the RCDT because both discharge paths from Containment isolate on Containment Isolation Signal Phase "A".

SAFETY EVALUATION: 89-SE-054 Revision: 0

Safety Evaluation: Continued

The operation of the RCDT is not affected. The operation of Containment isolation valves is not affected. The seal water return serves no safety related function. The consequences of a malfunction of equipment important to safety is not increased.

If either end of the jumper were to fail, this would be the same as if the drain line to BG V-454 had failed and would be an ASME Class 2 branch intersection break which has been analyzed in USAR Section 3.6.2.1.1.b.

The Containment isolation valves on the seal water return line are not affected by this procedure. They will continue to be operable. There is no other equipment important to safety involved with this procedure.

Seal water return is not discussed in Technical Specifications.

SAFETY EVALUATION: 89-SE-056 Revision: 0

Title: Essential Service Water System Chemical Treatment Program

Description: This temporary modification will inject a biocide and corrosion inhibitor into the Essential Service Water (ESW) Train "A" supply line in the basement of the Control Building at the one-inch drain connection EF V-103 to help formulate what permanent design changes should be made for the implementation of a chemical treatment program to mitigate corrosion and biofouling. The injection method will use metering pumps taking suction from a 55 gallon drum, and by way of stainless steel tubing, inject into the ESW line. This injection process is not reflected on USAR Figure 9.2-2; therefore, the temporary modification has introduced a change to the ESW System from its description in the USAR.

Safety Evaluation: The ESW drain line is Seismic Category I and has a design pressure of 200 pounds per square inch gauge (psig). The total deadhead of the ESW pump is 361 feet, i.e., 156 psig. The commercial pipe fittings and tubing connected at the drain connection shall maintain system design pressure. The tubing does not rigidly couple the injection equipment loads to the ESW System. The seismicity of the drain connection is not adversely affected. A check valve is provided in the discharge of the metering pump. In the unlikely event the tubing is severed, the calculated flow loss at the total developed head pressure of the pump would be approximately 13 gallons per minute (gpm). This amount of cooling water loss is insignificant upon system operation when compared to the required design flow of 13,563 gpm and current ESW pump flow test data.

The injection probe penetrates into the 30-inch main header. This probe is made of stainless steel and is approximately 3/8 inch outside diameter. It is highly unlikely for a portion of this stainless steel probe to break; but if it did, it would represent a small piece of debris in the open cycle ESW cooling circuit. This debris would most likely remain on the bottom of the 30-inch supply header in the basement of the Control Building and not be swept up in the flow to a higher elevation. This piece of debris is deemed not capable of causing any immediate or significant degradation to any safety related heat exchanger such that it would compromise its function because of the debris' small size, low pressure (less than 200 psig), and temperature (less than 95 degree Fahrenheit) environment exposure. Heat exchanger tube failure, which is remotely possible, is not to be considered as a different type of malfunction because this malfunction has been evaluated.

Chemical review of the pyrophosphate inhibitor, slimicide microbial control agent, and the calcium phosphate scale inhibitor by Chemistry personnel has concluded that these chemicals pose no more of a health hazard than chemicals or cleaning agents already in use or stored at the plant (e.g., chlorine, hydrogen, carbon dioxide, sulfuric acid, sodium hydroxide). The biocide chemicals and inhibitor placed in the basement of the Control Building, if spilled, would not introduce a hazardous chemical release. These chemicals pose no threat to the habitability of the Control Room. Habitability of the Control Room due to an unlikely spill of the biocide and inhibitors is not compromised because evaluation of these chemicals has shown them to be non-toxic. A berm is provided to contain any spills if they occur. Acid leaks and subsequent noxious gases have been evaluated within the Control Building because of the battery banks. The

SAFETY EVALUATION: 89-SE-056 Revision: 0

Safety Evaluation: Continued

discharge of the fire extinguishers, Halon system discharges into the cable trenches and chases, and the leakage of the Control Room air conditioning unit refrigerant have also been evaluated within the Control Room. These events bound any possible hazards which could result from an unlikely spill of the biocide and inhibitor fluids in the Control Building basement.

SAFETY EVALUATION: 89-SE-057 Revision: 0 and 1

Title: Service Water System Chemical Treatment Program

Description: This temporary modification will provide the flexibility to inject chemicals into the Service Water System (SW) by connecting injection equipment on the discharge line from Service Water Pumps "A" or "C" at one-inch drain connections located in the Circulating Water Screenhouse (CWSH). This flexibility provides the ability to move the injection point to the discharge of an operating Service Water Pump in case a pump is taken out of service. The potential chemical injection points are not reflected on USAR Figure 9.2-1; therefore, the temporary modification has introduced a change to the SW from its description in the USAR.

Safety Evaluation: The SW is not Seismic Category I and serves no safety related function. The CWSH has no nuclear safety design and contains no safety related equipment. Connecting the injection equipment on the SW does not degrade any nuclear safety feature of this system because it has none. The chemical drum will be provided with a berm to contain any possible spills. During normal plant operations, the SW provides cooling water to the ESW loads in addition to the SW loads. If the 3/8-inch stainless steel injection probe broke off, which is deemed highly unlikely, it would be captured by the in-line SW strainer which has 1/16-inch wide stainless steel strainer elements. It is not possible that this debris could be swept into the ESW.

Chemical review of the tolytriazole-type corrosion inhibitor and the calcium phosphate scale inhibitor by Chemistry personnel has concluded that these chemicals pose no more of a health hazard than chemicals or cleaning agents already in use or stored at the plant (e.g., chlorine, hydrogen, carbon dioxide, sulfuric acid, sodium hydroxide). Tolytriazole is a chemical currently used at the plant. These corrosion and scale inhibitors, if spilled, would not introduce a hazardous chemical release. These chemicals pose no threat to the habitability of the Control Room.

Assessment of the effects this modification has on the malfunction probability or possibility of equipment important to safety has concluded no increase in the frequency of this equipment's malfunction occurrence. The reliability, capability, and integrity of the ESW in providing cooling flow to the plant during accident conditions has not been degraded by the subject temporary modification.

SAFETY EVALUATION: 89-SE-059 Revision: 0

Title: Monitoring Of The Essential Service Water System Chemical Treatment Program

Description: This temporary modification is to monitor the effectiveness of a chemical treatment program to mitigate corrosion and biofouling by connecting monitoring equipment to the Essential Service Water (ESW) Train "A" supply line in the ESW Pumphouse at 3/4-inch vent EF V-126. The method of monitoring the ESW cooling water is by using a hose from the vent connection to bring a water sample to the monitoring equipment. This monitoring capability is not reflected on USAR Figure 9.2-2; therefore, the temporary modification has introduced a change to the ESW System from its description in the USAR.

Safety Evaluation: The ESW vent connection is Seismic Category I and has a design pressure of 200 pounds per square inch gauge (psig). The total deadhead of the ESW pump is 361 feet, i.e., 156 psig. The commercial pipe fittings and hose connected at the vent connection shall maintain system design pressure. The hose between the monitor and hard pipe does not rigidly couple the monitoring equipment loads to the ESW System. The seismic design of the vent connection is not adversely affected by the mechanical connection introduced by the modification. The hose shall be secured to prevent adverse whip and spray effects in the unlikely event its severance. If severed, Pumphouse flooding is not possible as adequate drainage is provided. If the hose is severed, the calculated flow out of the 3/4-inch globe valve with it wide open at the total developed head pressure of the pump would be approximately 88 gallons per minute (gpm). This amount of cooling water loss is insignificant upon system operation when compared with the design requirement flow of 13,563 gpm and current ESW pump flow test data.

Assessment of the effects this modification has on the malfunction probability or possibility of the ESW System has concluded no increase in the frequency of ESW equipment malfunction occurrence. The reliability, capability, and integrity of the ESW System in providing cooling flow to the plant during accident conditions has not been degraded by this temporary modification.

SAFETY EVALUATION: 89-SE-060 Revision: 0

Title: Central Chilled Water Heat Exchanger Chemical Treatment Program

Description: This temporary modification is being implemented to test the treatment of Central Chilled Water heat exchanger SGB01A with an iron corrosion inhibitor and a biocide. The modification connects injection equipment to the Service Water System supply line at the 1-inch connection EA V-086 located in the Communications Corridor. This modification is to be accomplished by using metering pumps taking suction from a 55 gallon drum and injecting through tubing into connection EA V-086. This injection process is not reflected on USAR Figure 9.2-1; therefore, the temporary modification has introduced a change to the Service Water System (SW) from its description in the USAR.

Safety Evaluation: The SGB01A heat exchanger is part of the Central Chilled Water System and this system serves no safety function. The modification is localized to the Communications Corridor which has no nuclear safety design and contains no safety related equipment. The chemicals will be drawn from the drum which will have a berm for containment of any possible spills. The Communications Corridor is outside of the Control Building. Unlikely failure of the stainless steel injection probe would introduce a piece of debris in the open SW. This debris would not introduce any adverse conditions to any equipment important to safety because there is none of this type of equipment in the downstream flow path. The injection connection is not Seismic Category I and is designed to B31.1 pipe code. The commercial pipe fittings and tubing connected at the vent connection maintains system design pressure.

Chemical review of the tolytriazole-type inhibitor, slimicide microbial control agent, and the pyrophosphate inhibitor by Chemistry personnel has concluded that these chemicals pose no more of a health hazard than chemicals or cleaning agents already in use or stored at the plant (e.g., chlorine, hydrogen, carbon dioxide, sulfuric acid, sodium hydroxide). Tolytriazole is a chemical currently used at the plant. These chemicals, if spilled, would not introduce a hazardous chemical release. The chemicals pose no threat to the habitability of the Control Room.

Assessment of the effects this modification has on the malfunction probability or possibility of equipment important to safety has concluded no increase in the frequency of this equipments' malfunction occurrence. The reliability, capability, and integrity of equipment important to safety that provides cooling flow to the plant during accident conditions has not been degraded by the subject temporary modification.

SAFETY EVALUATION: 89-SE-062 Revision: 0

Title: Administrative USAR Changes

Description: The subject USAR change addresses administrative changes. The changes occur in USAR Section 13.1, "Organizational Structure of the Operating Agent." The area of change is in the responsibility of the Supervisor Operations and the Supervisor Operations Support. The Fire Protection Coordinator will no longer be responsible to the Supervisor Operations Support but to the Supervisor Operations. The Supervisor Radwaste will no longer report directly to the Manager Operations but to the Supervisor Operations, who still reports to the Manager Operations. The newly created position of Water Treatment Coordinator will report to the Supervisor Operations.

Safety Evaluation: No safety barriers, physical or operational, have been affected by this change. Malfunction of equipment probabilities and consequences have not been increased by the subject change. Plant hardware is not affected by this change. The functional requirements of the onsite and offsite organizations and the qualification requirements of the unit staff as specified by Technical Specifications 6.2.1 and 6.2.2 are maintained with no reduction introduced.

SAFETY EVALUATION: 89-SE-063 Revision: 0

Title: Removal Of Door For Tendon Surveillance Ram Passage

Description: Pressure Door 15011 is being removed for approximately four hours to permit passage of a hydraulic ram used for testing the Containment tendons. The ram is cylindrical in shape and is approximately 30 inches in diameter and 6 feet in length. The subject door is on the 2047 level of the Auxiliary Building and provides a pressure boundary and fire barrier. This doorway is not part of the Control Room boundary but is part of the Control Room pressurization boundary. This door is not required to be leak tight.

Safety Evaluation: When the door is removed, a fire impairment shall be implemented to prevent any increase in fire hazards from occurring. Should a Control Room Ventilation Isolation Signal (CRVIS) occur when the door is removed, the doorway shall be sealed off with 3/4-inch fire retardant plywood and taped. The plywood will overlap the door opening and will be provided with 2-inch by 4-inch stiffeners for additional strength. This action will ensure the operability of the Control Room Emergency Ventilation Systems (CREVS) in maintaining a positive pressure of 1/4-inch water gauge (w.g.) in the Control Room.

Technical Specification 3/4.7.6 requires two independent CREVSs to be operable in all modes. The CREVS has never been tested in the CRVIS alignment with this passage way open. Therefore, it is unknown what affect this will have on the system. To remove this doubt, the corrective action of sealing the passage way is to be taken if a CRVIS should occur when the door is removed. This action shall be coordinated between the work group and the Control Room.

This door provides access to the Train "B" CREVS Room. This room is in a mild environment post-accident, (reference USAR Table 3.11(B)-2). The exposure of the tape to chlorine is of no consequence because the pressurization fans are secured during a chlorine event. The subject modification provides corrective actions for ensuring the fulfillment of the safety functions of the CREVS during CRVIS, therefore, maintaining the plant within previously evaluated accident consequences.

All accidents in Chapter 15 of the USAR were considered. No probabilities were increased for any accidents postulated by briefly removing the subject door because it does not affect the initiator variables of these accident occurrences. The door being removed briefly does not increase the probability or consequences of malfunctions to equipment due to missiles, tornado, or seismic events because it provides none of these types of protection barriers. Appropriate fire protection and compensatory pressurization actions will be taken when the door is removed. Radiological and toxic gas accidents have been evaluated. Assessment of the subject change concludes that it lacks the potential to introduce a different type of accident. The consequences of a radiological or chlorine event has not been increased because infiltration and exfiltration rates have not been compromised. Control Room isolation dampers, pressurization, and filtration equipment will not be impaired. Loss of pressurization function has not been introduced by removing the door briefly because adequate measures are provided to compensate for any loss in pressurization ability. With compensatory measures in place, the operability of the CREVSs to perform their function as defined in Technical Specification 3/4.7.6 bases is maintained.

SAFETY EVALUATION: 89-SE-065 Revision: 0 and 1

Title: Demineralized Water Storage Tank Low Level Switch

Description: This temporary modification allows for the simulation of a normal tank level for the Demineralized Water (DW) Storage Tank. The recent cold weather has frozen the level instrument sensing line off of the DW Storage Tank located in the plant yard. This condition has caused the instrument to fail low actuating the low level switch which prevents transfer pump operation. This temporary modification will allow operation of the transfer pumps for plant demineralized water needs.

Safety Evaluation: The Demineralized Water Storage and Transfer System (DWSTS) stores water for use upon demand for makeup within the plant. The DWSTS receives filtered and demineralized water from the Demineralized Water Makeup System (DWMS). The system consists of one DW Storage Tank, two redundant transfer pumps connected in parallel, one degasifier and associated piping, valves, controls, and instrumentation. The DWSTS has no active or passive safety function, has no safety design basis, and is not required to achieve or maintain safe shutdown.

The automatic low level switch feature is provided for economic reasons to protect the pumps from damage during low tank levels. These pumps are a part of the DWSTS which provides no active or passive safety function. Local tank level indication is available for manual pump operation. Defeating the low level switch function does not increase the malfunction probability, possibility, or consequences of equipment important to safety malfunction because this equipments' seismic, environmental, Class 1E electrical, or physical protection features have not been affected.

SECTION III

CORRECTIVE WORK REQUEST DISPOSITION: 02691-86 Revision: 1
and 91744-86 Revision: 1
and 00392-87 Revision: 0

Title: Essential Service Water System Valves Replacement Torque Switch Limiter Plates

Description: This disposition allows for the purchase or fabrication of new limiter plates or the modification of limiter plates with a smaller setting number for use as replacement torque switch limiter plates. Corrective Work Request Disposition 02691-86, Revision 1, addresses the limiter plate for Essential Service Water (ESW) "A" to Containment air coolers isolation valve EF HV-033, which has been evaluated for sub-part classification and has been classified as non-safety related and non-seismic. Corrective Work Request Disposition 91744-86, Revision 1, addresses the limiter plate for ESW "A" from Containment air coolers isolation valve EF HV-045, which has been evaluated for sub-part classification and has been classified as non-safety related and non-seismic. Corrective Work Request Disposition 00392-87, Revision 0, addresses the limiter plate for ESW "B" to Ultimate Heat Sink isolation valve EF HV-038, which has been evaluated for sub-part classification and has been classified as non-safety related and non-seismic.

All motor operated valves were designed to have limiter plates. The limiter plate is a small metal part on the torque switch to limit the torque switch setting to a maximum design value. It provides a physical administrative limit to prevent a crafts person from setting the torque switch above that limit without additional technical direction. During normal torque switch actuation, the limiter plate is not used to transmit any load; however, the limiter plate provides a backup function in case of failure at the setting screw.

Safety Evaluation: The limiter plates do not control the valves' ability to open or close, maintain pressure boundary, contribute debris to a fluid system, or impact any other safety related item. The limiter plates are not Seismic Category I or II/I. The limiter plates cannot create a different type of malfunction than what has already been evaluated in the USAR. The margin of safety of Technical Specification 3/4.7.4 Essential Service Water System Bases will not change with this design change. The Essential Service Water System will have sufficient cooling capacity for continued operation of safety related equipment during normal and accident conditions.

CORRECTIVE WORK REQUEST DISPOSITION: 04886-86 Revision: 1

Title: Residual Heat Removal System Valve Replacement Torque Switch Limiter Plate

Description: This disposition allows for the purchase or fabrication of a new limiter plate or the modification of a limiter plate to obtain the desired thrust and limiter plate setting for use as a replacement torque switch limiter plate for Containment recirculation sump to Residual Heat Removal (RHR) pump "A" suction isolation valve EJ HV-8811A. The limiter plate for EJ HV-8811A has been evaluated for sub-part classification and has been classified as non-safety related and non-seismic.

All motor operated valves were designed to have limiter plates. The limiter plate is a small metal part on the torque switch to limit the torque switch setting to a maximum design value. It provides a physical administrative limit to prevent a crafts person from setting the torque switch above that limit without additional technical direction. During normal torque switch actuation, the limiter plate is not used to transmit any load; however, the limiter plate provides a backup function in case of failure at the setting screw.

This valve is a torque closed gate valve whose safety function is to open on a Safety Injection Signal and two-out-of-four Refueling Water Storage Tank "low-low level" signals. The failure of the close torque switch setting screw and a seating thrust greater that the operator capability would have to occur simultaneously to prevent the valve from performing its safety function.

Safety Evalution: A failure of the limiter plate will not change the result of a failure of EJ HV-8811A and will not increase the consequences of a malfunction in the Train "A" RHR System. The limiter plate does not control the valve's ability to open or close, maintain pressure boundary, contribute debris to a fluid system, or impact any other safety related item. The limiter plate is not Seismic Category I or II/I. The limiter plate cannot create a different type of malfunction than what has already been evaluated in the USAR. The margin of safety of Technical Specification 3/4.5.2, 3/4.5.3, 3/4.5.4, 3/4.7.4 Emergency Core Cooling System (ECCS) Bases will not change with this design change. The ECCS Subsystem (RHR) will provide long term core cooling capability in the recirculation mode during the accident recovery period.

CORRECTIVE WORK REQUEST DISPOSITION: 05142-86 Revision: 1

Title: Reactor Coolant System Valve Replacement Torque Switch Limiter Plate

Description: This disposition allows for the fabrication of a new limiter plate or the modification of a limiter plate to obtain the proper setting for use as a replacement torque switch limiter plate for Pressurizer power operated relief valve inlet isolation valve BB HV-8000A. The limiter plate for BB HV-8000A has been evaluated for sub-part classification and has been classified as non-safety related and non-seismic.

All motor operated valves were designed to have limiter plates. The limiter plate is a small metal part on the torque switch to limit the torque switch setting to a maximum design value. It provides a physical administrative limit to prevent a crafts person from setting the torque switch above that limit without additional technical direction. During normal torque switch actuation, the limiter plate is not used to transmit any load; however, the limiter plate provides a backup function in case of failure at the setting screw.

This backup function for the motor operated gate limit close valves only would be used if the valve hits an obstruction or the operator has a failure, i.e. position switch failure or internal friction in the open direction since the torque switch is not wired in the close circuit.

Safety Evaluation: A failure of the limiter plate will not change the result of a failure of BB HV-8000A to close on demand since Pressurizer vent flow isolation is provided by the alternate series isolation valves. The limiter plate does not control the valve's ability to open or close, maintain pressure boundary, contribute debris to a fluid system, or impact any other safety related item. The limiter plate is not Seismic Category I or II/I. The limiter plate cannot create a different type of malfunction than what has already been evaluated in the USAR.

The margin of safety of Technical Specification 3/4.4.4 Reactor Coolant System, 3/4.7.4 Relief Valves will not change with the design change. The remotely operated block valves provides a positive shut-off capability should a relief valve become inoperable.

CORRECTIVE WORK REQUEST DISPOSITION: 06331-88 Revision: 0

Title: Teflon Gaskets Replacement

Description: This corrective work request identifies Teflon gaskets supplied for the boric acid transfer pump were installed in the boric recycle pumps and the waste evaporator distillate pump.

Safety Evaluation: The Teflon gasket is the correct gasket and material for the boron recycle pumps. The waste evaporator distillate pump should use a Hycar Buna N gasket but per the vendor, the Teflon gasket is acceptable. The gasket material (Teflon or Hycar Buna N) serves no safety design basis with the referenced pump which is installed for non-safety related, non-special scope application.

CORRECTIVE WORK REQUEST DISPOSITION: 06336-88 Revision: 0

Title: Teflon Gaskets Replacement

Description: This corrective work request identifies Teflon gaskets supplied for the recycle evaporator feed pump were installed in the boric acid transfer pumps.

Safety Evaluation: Per the vendor, the Teflon gasket is suitable for either application. However, Hycar Buna N is the material of choice for the boric acid transfer pumps.

The boric acid transfer pumps are listed as safety related in the quality list because part of this system functions along with other systems to borate the Reactor Coolant System to cold shutdown conditions. The pumps' function is not necessary to assure the Reactor Coolant pressure boundary.

CORRECTIVE WORK REQUEST DISPOSITION: 06338-88 Revision: 0

Title: Deflector Replacement

Description: This corrective work request identified a concern that two deflectors originally supplied for boron injection makeup pump PBG08 were installed in waste evaporator concentrates pump SHB09 (ASME III, Class 3) and waste monitor tank pump PHB01B (ASME III, Class 3). The waste evaporator concentrates pump and the waste monitor tank pump are classified as special scope. The subject deflector was supplied as Quality Assurance Code "Commercial/Nonsafety". The waste evaporator concentrates pump and the waste monitor tank pump are both Goulds model 3196 ST pumps. All Gould model 3196 pumps (regardless of size) have a standard oil deflector which is made of a glass reinforced nylon material.

Safety Evaluation: The deflectors installed in SHB09 and PHB01B are the correct deflectors. The only function the deflector serves is to prevent oil from splashing. Regardless of whether the deflector is located in a safety related or non-safety related pump, it serves no safety related function. Therefore, the safety design bases of PHB01B and SHB09 have not been adversely affected by the application of the subject deflectors.

CORRECTIVE WORK REQUEST DISPOSITION: 06472-88 Revision: 0

Title: Torque Arm Assembly Replacement

Description: This disposition addresses the use of a torque arm assembly procured for Reactor Coolant Loop drain header isolation valve HB 7174 in safety related Loop 3 hot-leg resistance temperature detector (RTD) manifold outlet valve BB 8073C. Additionally, this disposition addresses a concern that the subject torque arm assembly was procured under Quality Assurance Code "Commercial" and used in a safety related application.

Safety Evaluation: Review has determined that the subject valves are identical ASME Section III, Class I, 1525 pound rating, three-inch manual gate valves per the vendor drawings. Therefore, technically the torque arm assembly will fit in both valves.

Loop 3 hot-leg RTD manifold outlet valve BB 8073C performs a passive safety related function. It is normally open and maintains Reactor Coolant System pressure boundary integrity. It is not required to operate under any plant modes or for any design basis accident conditions. The torque arm assembly which is installed on the valve stem has no safety function. Its failure is unlikely and in the remote possibility of its failure, the valve's safety function is not impacted. Therefore, using a commercial grade torque assembly is acceptable and does not constitute a non-conformance.

CORRECTIVE WORK REQUEST DISPOSITION: 06482-88 Revision: 0

Title: Gaskets Replacement

Description: This corrective work request identified a concern that a gasket set supplied for use in Residual Heat Removal (RHR) to Safety Injection System relief valve EJ V-8842 and RHR to accumulator injection discharge loops relief valves EJ V-8856A and EJ V-8856B was installed in RHR Pump "A" Component Cooling Water outlet relief valve EJ V-0156.

Safety Evaluation: The subject gaskets do not serve as part of the pressure boundary and do not serve any safety design basis. Therefore, the application of the subject gaskets in EJ V-0156 is acceptable for use-as-is.

CORRECTIVE WORK REQUEST DISPOSITION: 06695-88 Revision: 0

Title: Waste Monitor Tank Pump Rotary Unit Seal

Description: This disposition addresses the installation of the rotary unit seal on waste monitor tank pump PHB01B that was supplied either for the Reactor Coolant drain tank pumps, PHB02A and PHB02B, or the waste evaporator concentrate pump, SHB09. Evaluation of mechanical-seal assembly drawings revealed the identical design configuration for these pumps except for materials of manufacture: materials for PHB01B, PHB02A and PHB02B are the same for water service, whereas the materials for the mechanical-seal assembly for SHB09 are special for boric acid service. A rotary unit seal supplied for PHB02A or PHB02B is identical to the rotary unit seal specified for PHB01B. A rotary unit seal supplied for SHB09 can be used, with qualifications for PHB01B. Since it is uncertain whether the rotary ring is tungsten carbide or carbon, the disposition for this corrective work request is "use-as-is" with qualification: a continuous flush is required to assure proper lubrication between the rotary and stationary rings.

Safety Evaluation: Use of the subject rotary unit seal with flush will not increase the probability or consequences of radioactive-liquid-waste leakage. Use of the subject rotary unit seal with flush will not create any different type of accident other than the previously postulated radioactive-liquid-waste leakage/spill. Use of the subject rotary unit seal with flush will not increase the probability or consequences of PHB01B pump failure/leakage and subsequent radioactive-liquid-waste leakage/spill. Use of the subject rotary unit seal with flush will not create any different type of malfunction other than the previously possible PHB01B pump failure/leakage, which is not any more serious than the previously evaluated radioactive-liquid-waste leakage/spill. Use of the subject rotary unit seal with flush does not decrease any safety criteria bases defined in the Technical Specifications.

CORRECTIVE WORK REQUEST DISPOSITION: 00393-89 Revision 0

Title: Control Building Air Flow Rebalance

Description: This disposition allows the Control Building Heating, Ventilation, and Air Conditioning System (HVAC) air conditioning (A/C) units supply air and return air distribution systems to be rebalanced. The air flows are being rebalanced to reduce air flow rates in the occupied "operator area" to a total of 2812 cubic feet per minute (CFM), plus or minus ten percent, and increase air flow rates in the equipment rack area to 17600 CFM, plus or minus ten percent. This change will permit continuous operation of the A/C units at the present setpoint while maintaining the "operator area" approximately five degrees Fahrenheit warmer than the equipment rack area.

Safety Evaluation: The redistribution of air within the Control Room is being completed to improve operator comfort and will not increase the probability of occurrence or the consequences of an evaluated accident. Redistribution of the air flow will not create the possibility of an accident or equipment malfunction of a different type than any previously evaluated. The consequences of an equipment malfunction will not be affected by this modification. The design operating temperature in the Control Room is 78 degrees Fahrenheit and the Technical Specification high limit is 84 degrees Fahrenheit. The redistribution of air flow should result in Control Room temperatures of 70 degrees Fahrenheit or below, allowing the Technical Specification limit to be met while improving operator comfort. Thus, the probability of equipment malfunction will not be increased and the margin of safety as defined in the Technical Specifications will not be reduced.

CORRECTIVE WORK REQUEST DISPOSITION: 00625-89 Revision: 0

Title: Repair Of Stripped Ground Screw Holes

Description: This disposition allows for the repair of a stripped ground screw hole found on one of the two card frame holes for Card Frame 2/Protection Set I. The repair uses a lockwasher and nut to attach the ground screw and ground strapping lugs to the card frame. The lockwasher is used to insure that the screw and nut remain tightly fastened over time.

Safety Evaluation: This method of fastening will be equivalent to, if not better than, the original design. The new replacement parts have been previously approved for use in safety related systems and therefore, will not reduce safety factors. This disposition will not make changes to the USAR nor alter Technical Specifications in any way.

CORRECTIVE WORK REQUEST DISPOSITION: 03357-89 Revision: 0

Title: Control Room Air Conditioning Compressor

Description: This evaluation provides a use-as-is disposition for the installation of suction cut-off type compressor cylinder unloaders on the Control Room air conditioning (A/C) unit (SGK04B) compressor in lieu of the hot-gas bypass type unloaders originally supplied with the compressor.

Safety Evaluation: The suction cut-off type unloaders installed on the SGK04B compressor are the standard replacement part supplied by the vendor to replace the hot-gas bypass type unloaders. The suction cut-off type unloaders perform the same function as the original unloaders and improve compressor efficiency. In addition, the suction cut-off type unloaders will result in lower compressor head temperatures thereby reducing maintenance problems that have plagued the compressor. The suction cut-off type unloaders were evaluated and determined to be a plant enhancement. The cooler head operating temperatures will reduce maintenance and improve system availability and reliability. The suction cut-off type unloaders perform the same function as the original unloaders and have been seismically qualified. Therefore the possibility of an unevaluated accident has not been created. The use of suction cut-off type unloaders will have no affect on the consequences of an accident. The loss of one refrigerant system has been evaluated (USAR 9.4.1) and this change will not affect the redundant train. The margin of safety defined in the Technical Specifications will not be reduced because the subject unloaders were procured to the same technical requirements as the original compressor parts.

CORRECTIVE WORK REQUEST DISPOSITION: 03413-89 Revision: 0

Title: Pressure Transmitter Replacement Part Number

Description: This disposition allows for use-as-is of the Class 1E Switchgear Room air conditioning (A/C) condensing unit pressure transmitter, GK PT-0767A. The part number on the installed pressure transmitter GK PT-0767A does not correspond with the part number specified in the vendor manual or the vendor equipment drawing. The disposition also approves for use the latest model number as the replacement part number for the pressure transmitter.

Safety Evaluation: The part numbers specified in the vendor manual and the vendor equipment drawing are obsolete part numbers which were superseded by the part number on the installed transmitter.

Per a telecon with the vendor, it was determined that the part number listed in the vendor manual was changed by the manufacturer during the design phase of the project to the part number listed on the vendor equipment drawing. The part number listed on the drawing was the pressure transmitter actually qualified in the original seismic qualification. The change from the part number listed on the drawing to the one installed was the result of a change in the meter body resulting in an increase in maximum design pressure from 2000 pounds per square inch (psi) to 3000 psi. This revision in part number was an enhancement which had no adverse impact to original environmental and seismic qualification, or the fit or function of the pressure transmitter.

An additional model number change has occurred since the original procurement of the pressure transmitter. The latest model number for the pressure transmitter reflects a revision in the transmitter junction box to explosion proof. This revision was an enhancement and resulted in no adverse impact to the original environmental and seismic qualification, or to the form, fit or function of the pressure transmitter. This revision increased the weight of the transmitter by 10.5 ounces. The vendor has certified that the increased weight will not invalidate the existing seismic qualification of the Class 1E Switchgear Room A/C units.

The changes in the part have been analyzed and the seismic qualification verified. The pressure transmitters perform the same function as those originally specified and have been determined to be an acceptable replacement for the originally supplied part. Therefore, the possibility or consequences of a previously evaluated accident has not been created or increased. The margin of safety defined in the Technical Specifications will not be reduced because the subject pressure transmitters meet the same technical requirements as the original pressure transmitters.

CORRECTIVE WORK REQUEST DISPOSITION: 04432-89 Revision: 0

Title: Control Room Air Conditioning Compressor Unloader

Description: This disposition allows use of suction cut-off type unloader as a standard replacement for the hot-gas bypass type unloader heads on the Control Room Air Conditioning compressors, SGK05A and SGK05B. Currently, the compressor unloader on SGK05B is malfunctioning and an approved replacement is not onsite. The SGK05A and SGK05B compressors were originally supplied with hot-gas bypass type cylinder unloaders. As documented in the past, these unloaders have been the source of many maintenance problems.

Safety Evaluation: The suction cut-off type unloaders perform the same function as the original unloaders and improve compressor efficiency. The suction cut-off type unloaders will result in lower compressor head temperatures, thereby reducing maintenance problems on the referenced compressors. The suction cut-off unloaders have proved more reliable than the originally supplied unloaders.

The suction cut-off type unloaders were evaluated and determined to be a plant enhancement. The cooler head operating temperatures will reduce maintenance and improve system availability and reliability. The suction cut-off type unloaders will have no effect on the consequences of an accident. The suction cut-off type unloaders perform the same function as the original unloaders and have been seismically qualified. Therefore, the possibility of an unevaluated accident has not been created. The loss of one refrigerant system has been evaluated (USAR 9.4.1) and this change will not affect the redundant train. The margin of safety defined in the Technical Specifications will not be reduced because the subject unloaders were procured to the same technical requirements as the original compressor parts.

USAR CHANGE REQUEST: 88-022

Title: Change To Domestic Water System Requirements

Description: The Domestic Water System (DoWS) provides chlorinated potable water for drinking, cooking, showers, laundry and toilet facilities within the standardized power block. This system serves no safety function and has no safety design basis (reference USAR Section 9.2.4.1.1). All codes regarding the DoWS are designed to maintain the quality of water at standards established for safe drinking. These standards are set and enforced in the State of Kansas by the Kansas State Department of Health and Environment (KDHE) (reference KSA 64-171h). The Potable Water Distribution system has been approved by KDHE (Permit 17812).

Section 9.2.4.2.2 of USAR states the DoWS was designed in compliance with the Wisconsin Administrative Code Sections H62.13 and H62.14, the Uniform Plumbing Code (UPC) and OSHA Sections 1910.141 and 1910.151. The Wisconsin Administrative Code (WAC) is not a code used in the State of Kansas and compliance with this code is inappropriate; i.e., requires any changes to the plans be approved by the State of Wisconsin Health and Social Services Department, and all work to be done requires a plumber licensed by the State of Wisconsin Health and Social Services Department. This code should be deleted. The USAR presently has no commitment for meeting KDHE requirements. Commitment to KDHE requirements should be added.

Safety Evaluation: The intent of the Wisconsin Administrative Code, the UPC, or Kansas State Department of Health and Environment Minimum Standards is to provide for the health and welfare of the public when consuming potable water. Kansas state law KSA65-171h authorizes and empowers the Secretary of KDHE to develop, assemble, compile, approve and publish minimum standards of design, construction and maintenance of public water supplies. Wolf Creek's potable water supply is classified as a public system because it serves at least 25 individuals daily. While there are differences in the KDHE minimum standards and the Wisconsin Administrative Code, i.e., the WAC does not meet all the KDHE minimum standards and in some cases the WAC exceeds the KDHE Minimum Standards, the differences have been evaluated and it has been determined that there will be no detrimental effect.

All requirements found in Section H62.13 and H63.14 of the Wisconsin Administrative Code are addressed in either the KDHE policy, UPC or are not applicable to Wolf Creek Nuclear Operating Corporation. The Wisconsin Administrative Code requires submittal to the Wisconsin Department of Health and Social Services and a plumber licensed in the State of Wisconsin. In addition, the WAC does not meet all the minimum standards of the KDHE policies and the WAC is not enforceable in the State of Kansas. Deleting the inappropriate Wisconsin Administrative Code and adding the requirements of the Kansas State Department of Health and Environment will not cause an accident previously evaluated in the USAR or affect any safety related equipment. There is no change to a safety related system or safety design basis.

USAR CHANGE REQUEST: 89-035

Title: Requisition And Procurement Process Revision

Description: This USAR Change revises a form title and reflects the re-organization related to requisition and procurement within the Engineering and Technical Services Department.

Safety Evaluation: This USAR Change is limited to revising a form title and the re-organization within the Engineering and Technical Services Department. Neither change affects the technical design basis or Quality Program requirements of Wolf Creek Generating Station.

USAR CHANGE REQUEST: 89-058

Title: Quality Program Documentation Revision

Description: This USAR Change includes editorial, organizational, clarification changes and changes USAR 17.2.2.4 to accurately reflect present operating Quality Program documentation.

Safety Evaluation: The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously analyzed or evaluated in the USAR will not be increased as a result of this change. The possibility for an accident or malfunction of a different type that evaluated is not created by this change. The margin of safety as defined in the bases of Technical Specifications is not reduced as a result of this change. The change adds newly issued documents and programs to the discussions in Chapter 17.2 and clarifies program requirements for consistent program implementation.

UNREVIEWED SAFETY QUESTION DETERMINATION: 98-005 Revision: 0

Title: Spent Fuel Pool Cooling Capacity Under Increased Heat Loads

Description: As a result of the longer operating fuel cycles, the decay heat generated by the spent fuel assemblies will be increased. In addition to the criticality analysis for the spent fuel storage racks, the thermal and hydraulic aspects of the Spent Fuel Pool (SFP) have to be evaluated to reconfirm that the existing Spent Fuel Pool Cooling System is capable of handling the higher decay heat loads. This evaluation examines the temperature changes and heatup rates for the Loss Of Cooling Accident (LOCA) under normal refueling and full core off-load conditions. In addition, natural circulation cooling of the SFP under total loss of cooling was evaluated and it was ascertained that no boil-off occurs under all design basis conditions.

Safety Evaluation: Accidents previously evaluated in the USAR included the loss of spent fuel cooling for two hours and the heat exchanger derating for post-LOCA conditions. Increased SFP heat loads do not impact the probability of occurrence of these accidents.

The consequences of the previously evaluated accidents are measured in terms of the yielded maximum SFP bulk temperatures. As stated in the USAR, the limits of the maximum SFP bulk temperature corresponding to the specified design bases conditions were established as follows: 135 degrees Fahrenheit for Design Basis Condition 1, normal refueling; 160 degrees Fahrenheit for Design Basis Condition 2, full core off-load; and 200 degrees Fahrenheit for Design Basis Condition 3, full core off-load following a two hour loss of SFP cooling. Analysis for the increased decay heat loads including an assumed five percent of tubes plugged in the SFP cooling heat exchanger reconfirm that the maximum SFP bulk temperatures following these accidents and under normal conditions fall below the established temperature limits. Calculations also reassure that the spent fuel assemblies in the SFP will be adequately cooled and free from boiling under all design basis conditions. Thus, the consequences of an accident previously evaluated in the USAR are not increased.

The possibility that an accident of a different type from any evaluated previously will not be created since the increased SFP heat loads expected for Cycle 4 and beyond will not affect initiators of other events.

The increased heat load will not increase the frequency at which equipment important to safety is actuated to protect the Reactor core nor does it alter the characteristic manner in which equipment important to safety responds once required to actuate. Furthermore, the SFP increased heat load will not degrade the performance of any safety system assumed to function in the accident analysis in order to mitigate the consequences of any accident. Therefore, the probability of malfunctions is not increased.

Increased SFP heat loads do not increase the probability of malfunction of equipment important to safety. In like manner, because the increased heat loads do not involve or create malfunctions previously evaluated, consequence of malfunctions are not increased.

The changes do not affect the initiators of any events and therefore will not create the possibility of any credible equipment malfunction not previously evaluated.

UNREVIEWED SAFETY QUESTION DETERMINATION: 88-005 Revision: 0

Safety Evaluation: Continued

The proposed changes impact the analysis assumptions, heat loads and inputs used in the previous analysis for SFP cooling. The re-analysis using increased heat loads proved that the maximum SFP temperatures are below the established temperature limits stated in the USAR. Therefore, the margin of safety as defined in the design bases has not been reduced.

UNREVIEWED SAFETY QUESTION DETERMINATION: 89-001 Revision: 1 and 2

Title: Power Calorimetric Using Steam Flow Measurement

Description: This evaluation is being conducted to evaluate the use of steam flow measurement in place of the currently used feedwater flow measurement for the daily secondary side calorimetric. Recently, an investigation of a power reduction of approximately 1.75 percent led to the determination that the cause of the power reduction was due to feedwater venturi fouling. Venturi fouling is the buildup of corrosion products in the venturis which causes an increase in delta pressure (delta-P) between the high and low pressure taps. Since delta-P is used for feedwater flow measurements, the result is a measured feedwater flow which is higher than actual. Since measured reactor power is proportional to measured feedwater flow, measured core thermal power is higher than actual. The result is less than 100 percent electrical output since indicated core thermal power must remain at or below 100 percent. In order to return core thermal power to its licensed level the daily secondary side calorimetric is being modified by substituting steam flow for feedwater flow.

Wolf Creek currently calibrates the Nuclear Instrumentation System (NIS) power range channels against a daily secondary side heat balance using feedwater flow measurements. Technical Specifications 3.3.1 and 4.3.1.1 require that each of the NIS power range indications be within plus or minus 2.0 percent of the calculated core power.

The uncertainty in calculated core power is included in the initial power level assumed in the USAR safety analyses and certain trip setpoints. The initial powers assumed in the USAR and trip setpoints currently assume a core power uncertainty of plus or minus 2.0 percent.

Safety Evaluation: The probability of occurrence of an accident previously evaluated in the USAR will not increase because the change to the use of steam flow in the daily calorimetric produces a power uncertainty within the currently assumed plus or minus 2.0 percent Rated Thermal Power. The use of a steam flow calorimetric will not affect the initiators of any design bases accident in such a manner as to cause an increase in the probability of occurrence.

The consequences of an accident previously evaluated will not be increased since the power uncertainty remains below the currently assumed plus or minus 2.0 percent Rated Thermal Power. The consequences of an accident will remain unchanged since the assumptions in the USAR have not been changed.

The possibility that an accident of a different type from any evaluated previously will not be created since the changes will not affect the initiators of any events. There is no credible accident possible due to the change to a steam flow calorimetric that has not already been evaluated.

The probability of occurrence of malfunctions of equipment important to safety previously evaluated in the USAR will not be increased. The proposed changes will not increase the frequency at which equipment is actuated and will not alter the characteristic manner in which equipment responds once required to actuate.

UNREVIEWED SAFETY QUESTION DETERMINATION: 89-001 Revision: 1 and 2

Safety Evaluation: Continued

The consequences of a malfunction of equipment important to safety previously evaluated in the USAR will not be increased. The changes do not involve the malfunction of equipment important to safety. No assumptions in the USAR accidents involving equipment malfunction have been changed therefore, consequences of an equipment malfunction remain the same.

The possibility that a malfunction of equipment important to safety of a different type than any evaluated previously in the USAR has not been created. The use of a steam flow calorimetric will not affect the initiators of any events and therefore will not create the possibility of an equipment malfunction not previously evaluated.

The change will not result in a reduction in the margin of safety as defined in the bases for any Technical Specification since the power uncertainty assumed remains at the current value of plus or minus 2.0 percent Rated Thermal Power.

LETTER: NP 89-0169

Title: Fuel Oil Sump

Description: The subject modification facilitates cleanup of fuel oil that has leaked from the return line of the fuel oil and supply for the fuel oil storage tank into the soil/backfill matrix underneath and in the vicinity of the Reactor Building emergency hatch.

The sole purpose of the modification is to provide a temporary means of collecting spilled fuel oil/ground water mixture and transferring such to a nearby storm sewer manhole. From the manhole, processing would take place at the Oily Waste Separator. Power to the sump pump will be provided by the construction power distribution line.

The sump will be located at least four feet away from the power block and not more than 10 feet from column line A-A to avoid interference with foundations or appurtenances. Pumping will be monitored so that sudden changes in the natural water table does not occur. Once the pumping operation is completed, the sump installation will be removed and area restored to its original configuration.

Safety Evaluation: The modification will serve no safety function and will not interface with any safety related component or system. The modification will not create a hazard (i.e., II/I, missile, pipe break, fire, flooding) for any safety related component. The modification does not impact any safety related function of any system. Therefore, the probability or consequence of a previously evaluated accident is not increased, the possibility of a new or different type of accident is not created and the probability or consequence of malfunctions of any equipment will not result.

SECTION IV

CORRECTIVE WORK REQUEST DISPOSITION: 04494-87 Revision: 0

Title: Safety Injection And Centrifugal Charging Pump Temperature Indicators

Description: This disposition addresses a nonconforming condition. The design drawings for Safety Injection and Centrifugal Charging Pump skid, well-mounted temperature indicators show the Ashcroft series designation as "BI". The units installed in the field are type "EI" or "CI". Ashcroft has never made a series "BI" temperature gauge. The two gauges suitable for this application are the series "EI" or "CI". "EI" has a zero adjust; "CI" does not. The Wolf Creek Cross Reference List and Procurement Data Base will be updated to reflect either Ashcroft series "CI" or "EI" thermometers are acceptable for use in these applications and substitutions between series "CI" and "EI" are permissible (This disposition includes the following temperature indicators: BG TI-0036, BG TI-0037, BG TI-0040, BG TI-0041, EM TI-0001A, EM TI-0001B, EM TI-0002A and EM TI-0002B.)

Safety Evaluation: This disposition allows interchangeability between either "EI" or "CI" gauges in the four locations. The gauges are mounted in thermowells, considered to be safety related only due to pressure boundary criteria. The "EI"/"CI" Ashcroft gauges are not safety related.

CORRECTIVE WORK REQUEST DISPOSITION: 04768-88 Revision: 1

Title: Broken Ceramic Insulating Ring

Description: This disposition allows removal of the ceramic insulating ring used on the neutron flux detector SE NE-32/36 to insulate the detector lift cable from the detector housing assembly. The ceramic insulating ring was broken during the performance of maintenance activities. This disposition allows repair by covering all exposed metallic portions of the lift cable with Scotch 69 tape so that the cable cannot come in contact with ground.

Safety Evaluation: The detector housing assembly must be isolated from ground to ensure accurate performance of the Nuclear Instrumentation System. The insulator isolates the detector housing from being grounded via the lift cable. With the removal of the ceramic insulator, the detector housing contacts the lift cable, providing a potential path to ground if a metallic portion of the lift cable contacts ground. By installing the Scotch 69 tape to the exposed metallic portions of the cable, isolation of the detector housing assembly from ground is maintained and the function of the detector and the Nuclear Instrumentation System is not affected in any manner.

CORRECTIVE WORK REQUEST DISPOSITION: 05175-88 Revision: 0

Title: Jacket Water Cooling Pump Stud Hole

Description: This disposition allows operating Emergency Diesel Generator jacket water cooling pump PKJ06A with eleven bolts holding the suction housing to the pump casing, instead of the twelve bolts per design, until a permanent repair of a damaged stud hole can be implemented.

Safety Evaluation: An evaluation of operating the pump as-is (with eleven bolts holding the suction housing to the pump casing,) on an interim basis has been performed. The results of the evaluation show that the stress on each stud as a result of using eleven instead of twelve studs does not exceed the allowable stresses. This evaluation took into account the forces of pump operation and the forces of a safe shutdown earthquake. The remaining studs have sufficient strength to provide reasonable assurance that the jacket water cooling pump will perform its safety related design function.

CORRECTIVE WORK REQUEST DISPOSITION: 05180-88 Revision: 0
and 05181-88 Revision: 0
UNREVIEWED SAFETY QUESTION DETERMINATION: 88-008 Revision: 0

Title: Fuel Rod Reconstitution For Cycle 4

Description: During the fuel inspection at the end of Cycle 3, fuel assembly D29 was identified as having a failed rod, I01, and fuel assembly D33 was identified as having a failed rod, B02. The failed rods will be replaced with stainless steel filler rods as allowed in Amendment 19 to the Wolf Creek Technical Specifications.

Corrective Work Request (CWR) Disposition 05180-88 addresses acceptability of reconstituted fuel assembly D29, rod I01 for load in Cycle 4, and CWR Disposition 05181-88 addresses acceptability of reconstituted fuel assembly D33, rod B02. Unreviewed Safety Question 88-008 addresses the replacement of the failed rods with stainless steel filler rods.

Safety Evaluation: The probability of occurrence of an accident previously evaluated in the USAR will not increase due to the replacement of the fuel rods with the stainless steel filler rods. Any accidents assumed to occur will not occur at any greater frequency due to the change. The basis for this is the continued applicability of the safety analysis design parameters. The replacement will not affect the initiators of an event, and thus the probability of occurrence is not increased.

The consequences of an accident previously evaluated in the USAR will not increase. The effects of the two stainless steel rods were evaluated in the Cycle 4 reconstituted fuel assemblies safety evaluation for the Westinghouse prepared non-Loss Of Coolant Accident (LOCA) safety analysis results and were found to have no significant effect since the Cycle 4 safety analysis design parameters remain valid. The Wolf Creek specific accident analyses, Steam Generator Tube Rupture and the Boron Dilution Event also experience no significant effect due to fuel rod replacement with the filler rods since the Cycle 4 safety analysis parameters remain valid. The presence of the two stainless steel rods has a negligible affect on the design kinetics parameters, control rod worths, core peaking factors, and peak linear power levels. The increases on local power peaking factors and F-delta-H are also negligible. The core kinetic parameters and control rod worths/requirements remain the same as those given in the Cycle 4 Reload Safety Evaluation. Thus the consequences will not increase for non-LOCA events. The consequences are also not increased for LOCA events. The insertion of two stainless steel filler rods in the Cycle 4 core will have a negligible affect on the peak cladding temperature for a hypothetical LOCA. Since the filler rods are non-heat generating rods, the rod average power will increase 0.004 percent as stated in the Cycle 4 reconstituted fuel assemblies safety evaluation. The evaluation of the effect of this change predicted a change of the calculated peak clad temperature of less than 1 degree Fahrenheit. Margin to the 2200 degrees Fahrenheit limit exists to absorb this penalty, and thus the consequences are not increased for LOCA events.

CORRECTIVE WORK REQUEST DISPOSITION: 05180-88 Revision: 0
and 05181-88 Revision: 0
UNREVIEWED SAFETY QUESTION DETERMINATION: 88-008 Revision: 0

Safety Evaluation: Continued

The possibility of an accident of a different type than previously evaluated will not be increased. The fuel assemblies with stainless steel filler rods satisfy the same design criteria as other fuel assemblies, and replacing the failed fuel rods with filler rods protect the core by removing the damaged rods from the core. The change also protects the core from exceeding safety limits given an accident or operational transient due to the failed fuel rods.

The probability of a malfunction of equipment important to safety as previously evaluated will not be increased. The replacement of fuel rods with stainless steel filler rods will not increase the frequency at which equipment important to safety is actuated. Also, the replacement does not alter the manner in which equipment responds once required to actuate. The replacement will not degrade the performance of any safety system assumed to function in the accident analyses. Therefore the probability of malfunctions is not increased.

The consequences of a malfunction of equipment important to safety previously evaluated will not be increased. The impact of the changes on the safety analyses has been evaluated and the results indicate that safety limits continue to be met as detailed in the Cycle 4 reconstituted fuel assemblies safety evaluation.

The possibility of equipment malfunction of a type other than previously evaluated is not created. There are no unique or different challenges to equipment due to the fuel rod replacement with the stainless steel filler rods, nor is there any degradation of equipment created due to the change. The change is not such as to cause equipment malfunctions of any kind.

The margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of the change. The use of the stainless steel filler rods will not result in any existing design limit being exceeded. The reconstituted fuel assemblies satisfy the same design criteria as the other fuel assemblies and their use will not result in a change to existing safety criteria or design limits. Therefore this change does not reduce the margin of safety.

CORRECTIVE WORK REQUEST DISPOSITION: 05922-88 Revision: 0

Title: Repair Of Limit Switch Mounting Assembly

Description: This disposition recommends repairing the mounting hole on the Class 1E Lower Medium Voltage System circuit breaker elevating mechanism upper limit switch. The mounting hole for the limit switch has been stripped out.

The mounting hole for the circuit breaker elevating mechanism upper limit switch mounting bracket shall be tapped for use with an ASTM A-307 Grade A 5/16-18 bolt. In addition to this bolt, a carbon steel flat washer and lock washer shall be used to mount the limit switch assembly. The carbon steel mounting components are recommended in lieu of the temporarily installed stainless steel mounting components to minimize the possibility of stripping out the mounting hole in the future.

The limit switch shall be adjusted to assure functionality after the described repair is implemented. In addition, it is recommended that the other safety related Magne-blast circuit breakers be inspected for similar problems.

Safety Evaluation: The described repair will not impact the environmental or seismic qualification of the subject switchgear. The design function of the Class 1E Lower Medium Voltage System is to provide a highly reliable and diverse source of elective power to plant equipment necessary to assure the integrity of the Reactor Coolant System pressure boundary, the capability to shutdown the Reactor and to maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of accidents which could result in potential off site exposures comparable to those referred to in 10CFR100.

The subject circuit breaker is designed to carry the full load current and starting current of the safety injection pump motor and to interrupt the full load current and the maximum available fault current. The subject limit switch is used to stop the breaker elevating mechanism when the breaker reaches the fully elevated position. The limit switch does not perform a safety related design function. However, if the limit switch assembly were to fall off, proper breaker operation could not be assured.

The recommended replacement hardware (ASTM A-307 Grade A) is made from carbon steel; compatible in strength and chemistry with the angle iron to which it will be attached. This hardware has sufficient strength to maintain the load of the limit switch assembly for normal operating conditions and postulated design basis events. There are no other safety functions associated with the subject limit switch.

CORRECTIVE WORK REQUEST DISPOSITION: 06284-88 Revision: 0

Title: Replacement Spiral Pin For Isolation Valve

Description: A spiral pin originally supplied for the excess letdown heat exchanger outlet to pressurizer relief tank isolation valves, BB HV-8157A and BB HV-8157B, was inadvertently installed in the Centrifugal Charging Pump "A" discharge to seal water injection filters isolation valve, BG HV-8357A. The spiral pin is a spring-like device inside the plunger assembly which centers the valve rod. This disposition allows for use-as-is of the subject spiral pin application.

Safety Evaluation: The spiral pin installed in BG HV-8357A is the correct spiral pin for this valve. Valve BG HV-8357A is a one-inch Target Rock throttling valve as are BB HV-8157A and BB HV-8157B. Isolation valves BG HV-8357A, BB HV-8157A and BB HV-8157B are safety related, ASME III, Class 2 valves.

Valve BG HV-8357A directs a portion of the charging flow to the Reactor Coolant Pumps (nominally 8 gallons per minute per pump) through a seal water injection filter upon receipt of a safety injection signal. The form, fit and function of valve BG HV-8357A has not been altered by the installation of the subject spiral pin. The safety related design bases of BG HV-8357A has not been adversely affected by the installation of this spiral pin.

The subject spiral pins are supplied by the vendor as Quality Assurance Code "Commercial/Non-safety". The subject spiral pin is identical to the originally installed spiral pin and is interchangeable with the originally installed pin. The subject spiral pin has no safety design basis. The failure of the spiral pin will not prevent valve BG HV-8357A from failing open.

CORRECTIVE WORK REQUEST DISPOSITION: 06305-88 Revision: 0

Title: Installation Of Cap Gaskets

Description: This disposition allows the use of two Westinghouse cap gaskets in the boric acid transfer (BAT) to Volume Control Tank (VCT) discharge control valve, BG FCV-110B, and the Accumulator Tank "A" test line isolation valve, EP HV-8879A. These safety related valves are ASME III, Class 2 valves. Westinghouse has classified the cap gaskets as Quality Assurance Code "Commercial/Non-safety".

The cap gasket is a soft lead gasket used for Conoflow Airpak filter-regulator combinations. The Conoflow regulators are used for numerous Westinghouse supplied air operated valve applications. The filter-regulator assembly for each air operator valve filters and controls the pressure of the air supply to the solenoid valve and the valve actuator. There is one filter-regulator assembly per valve; the assembly is not valve mounted.

Safety Evaluation: The Wolf Creek applications for the air operated valves with Conoflow filter-regulators are for valves that either fail open or fail closed in the safe position. Thus, even in the event that a gasket was to fail, and in turn the filter-regulator would bleed air pressure, the valves in service would move to the safe position. A review has been performed of design documentation which verifies that there are no other applications of the subject Conoflow Airpak filter-regulator at Wolf Creek.

CORRECTIVE WORK REQUEST DISPOSITION: 06337-88 Revision: 0

Title: Replacement Gasket On Secondary Spent Resin Storage Tank

Description: This disposition allows the asbestos gasket procured for the Pressurizer Relief Tank (PRT) to be used as a one-time substitution for the gasket in the Secondary Spent Resin Storage Tank. It is intended that future replacement of this part be in accordance with original documentation.

Safety Evaluation: The gasket used in the Secondary Spent Resin Storage Tank is of the same material, part number, vendor and rating. Per this disposition, a J-M style number 60 gasket suitable for an 18 inch ANSI 150 pound rating raised face flange in the PRT, procured in accordance with Westinghouse Quality Assurance Code D has been used on an 18 inch ANSI 150 pound rating raised face flange in Secondary Spent Resin Storage Tank. The procurement process under which the subject gasket was obtained ensured that the gasket is indeed J-M style number 60 suitable for an 18 inch ANSI 150 pound rating raised face flange. Since the vendor who furnished the Secondary Spent Resin Storage Tank also specifies the use of J-M style number 60 gasket, this application of the gasket does not raise any safety concerns.

CORRECTIVE WORK REQUEST DISPOSITION: 06382-88 Revision: 0

Title: Deformation In Pressurizer Auxiliary Spray Line

Description: Application of a freeze seal on the Pressurizer Auxiliary Spray supply line, BG026BCB-2", apparently caused a slight deformation of the pipe. In the two measurement locations representing the maximum deformation, the reported change in the piping outside diameter was 0.003 inch. This disposition determined the apparent deformation is acceptable for "use-as-is".

Safety Evaluation: The Pressurizer Auxiliary Spray supply line is part of the Reactor Coolant System pressure boundary. The slight bulge in the piping represents a potential weakened area where a leak could occur. However, evaluation of the various design documents applicable to this line has determined that an adequate margin of safety still exists. As a result of these reviews, it has been verified that the Pressurizer Auxiliary Spray supply line can perform its design function as a Reactor Coolant System pressure boundary during all modes of normal and emergency operation.

CORRECTIVE WORK REQUEST DISPOSITION: 06429-88 Revision: 0

Title: Floor Drain Tank Pump Inboard Ball Bearings Replacement

Description: This disposition accepts as-is the application of six vendor supplied inboard ball bearings installed in the floor drain tank pump and the waste evaporator package concentrate pump.

Safety Evaluation: All Goulds model 3196 pumps (regardless of size) have a standard radial bearing which is made of steel. The subject bearing was supplied by the vendor as Quality Assurance Code "Commercial/Non-safety". The floor drain tank pump and the waste evaporator package concentrate pump are both Goulds model 3196ST pumps. Therefore, based on the above discussion, the subject inboard bearing is interchangeable with the floor drain tank pump and the waste evaporator package concentrate pump.

The subject replacement ball bearings are identical to the originally installed ball bearings, therefore the function of the floor drain tank pump and waste evaporator concentrate pump is not adversely affected. Neither the waste evaporator concentrate pump nor the floor drain tank pump serve any safety design basis.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the basis for any Wolf Creek Generating Station (WCGS) Technical Specification is not reduced. There is no impact on any WCGS Technical Specification or associated bases.

CORRECTIVE WORK REQUEST DISPOSITION: 06433-88 Revision: 0

Title: Replacement Jam Nut

Description: This disposition allows installation of a jam nut to secure the handwheel of HA V-177, the non-safety related two inch manually operated diaphragm valve that serves as a header isolation between the gas decay tanks (GDT) and the gaseous radwaste drain collection tank. The handwheel nut was identified as missing during a walkdown. The installed nut was not procured specifically for this valve although it is of the same size and materials and meets the requirements on the valve drawing. The jam nut, dedicated for a safety related valve, is installed on a non-safety related valve. This disposition is for one-time only replacement and future replacements of this jam nut will be in accordance with original documentation.

Safety Evaluation: The Gaseous Radwaste System serves no safety function and has no safety design bases. There is no effect on the USAR and no changes are being made to any design documentation. There is no impact on any Wolf Creek Generating Station (WCGS) Technical Specification or associated bases.

CORRECTIVE WORK REQUEST DISPOSITION: 06437-88 Revision: 0

Title: Replacement Gaskets On Volume Control Tank Purge Flow And Pressure Control Valves

Description: This disposition allows the asbestos gaskets procured for the Reactor coolant drain tank hydrogen purge control valve to be installed in the Chemical and Volume Control System (CVCS) volume control tank purge flow control valve and the CVCS volume control tank purge pressure control valve.

Safety Evaluation: The gaskets used in the CVCS volume control tank purge flow control valve and the CVCS volume control tank purge pressure control valve are the correct gaskets for these applications. The design change does not affect the capability of the valves to fulfill their design function. The valve systems serve no safety function and have no safety design bases. There are no changes to the USAR or to any design documentation. There is no impact on any Wolf Creek Generating Station (WCGS) Technical Specification or associated bases.

CORRECTIVE WORK REQUEST DISPOSITION: 06439-88 Revision: 0

Title: Boric Acid Transfer Pumps Bearing Replacement

Description: This disposition allows the bearings procured for the recycle evaporator feed pumps (PHE01A/B) to be used in the boric acid transfer pumps (PBG02A/B). The recycle evaporator feed pumps are classified special scope, whereas the boric acid transfer pumps are safety related. The pumps, made by the same manufacturer, use the same bearing part number.

Safety Evaluation: A review of the purchase order shows that the subject bearing was procured with quality program requirements imposed on the vendor and as safety related (10CFR21 applied). Therefore, this substitution does not constitute any nonconformance.

Based on the above, the probability or consequence of a previously evaluated accident is not increased, the possibility of a new or different type of accident is not created and the probability or consequence of malfunctions of any equipment will not result.

CORRECTIVE WORK REQUEST DISPOSITION: 06444-88 Revision: 0

Title: Modification Of Replacement Control Units

Description: This disposition allows an additional resistor to be installed in parallel with the 470K ohm resistor (R25) on new replacement control units for the motor driven Auxiliary Feedwater (AFW) pump isolation/control valves (AL HV-5, 7, 9 and 11) to decrease the resistance to approximately the original value. On new replacement control units, the vendor has narrowed the deadband to provide better positioning accuracy by increasing the value of a resistor in the deadband adjustment circuitry.

Safety Evaluation: Installation of the modified replacement control units will not affect the operating characteristics of the AFW valves in any manner. The motor driven AFW pump isolation/control valves utilize these control units for positioning the valves. During startup of the AFW System, it was found that a deadband of five percent was needed to prevent the valves from "hunting", or continuously operating to achieve the flow setpoint. As a result of the change by the vendor to a narrower deadband on new control units, a five percent deadband is now out of the adjustable range. By installing the additional resistor on the new control units and thereby decreasing the resistance to the original value, the adjustable deadband range will be restored to the original configuration.

CORRECTIVE WORK REQUEST DISPOSITION: 06460-88 Revision: 0

Title: Replacement Washer On RTD Manifold Outlet Valve

Description: This disposition accepts as-is the application of a spherical washer procured for the Reactor Coolant Loop drain header isolation valve HB 7174, installed in the Loop 3 hot leg resistance temperature detector (RTD) manifold outlet valve, BB 8073C. Valve BB 8073C is safety related but the washer was supplied for use in valve HB 7174, a non-safety related valve.

Safety Evaluation: Per a vendor letter, this washer is interchangeable between these two valves. The design change does not adversely affect the capability of the valve to fulfill its safety related design function. There are no changes to the USAR or to any design documentation. There is no impact on any Wolf Creek Generating Station (WCGS) Technical Specification or associated bases.

CORRECTIVE WORK REQUEST DISPOSITION: 06510-88 Revision: 0

Title: Use Of Lockwire On Incore Thermocouples

Description: This disposition accepts as-is the application of lockwire supplied by the vendor for the Control Rod Drive Mechanism (CRDM) air cooling baffles installed on the safety related incore thermocouples. All lockwire, specifically that supplied by Westinghouse, is supplied as commercial grade, including lockwire that is used on safety related equipment. Failure of the lockwire would not, in itself, cause a condition where the component could not fulfill its intended safety function because the purpose of lockwire is as a backup measure only.

The concerns with using a different lockwire for an application are for size and material. In this case, the lockwire used is .040-inch diameter stainless steel, and the lockwire required for use on the incore thermocouples is .040-inch diameter stainless steel. This disposition is for one time only to allow use-as-is. It is intended that future replacements of the lockwire will be in accordance with original documentation.

Safety Evaluation: The form, fit and function of the lockwire that was used in this application are as designed. The lockwire used is the diameter and material as that specified by the vendor for this application. The substitution does not adversely affect the capability of the incore thermocouples to perform their design function. There are no changes to the USAR or to any design documentation. There is no impact on any Wolf Creek Generating Station (WCGS) Technical Specification or associated bases. Based on the above, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated is not increased; the possibility for an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the basis for any WCGS Technical specification is not reduced.

CORRECTIVE WORK REQUEST DISPOSITION: 06512-88 Revision: 0

Title: Boric Acid Transfer Pump And Waste Evaporator Distillate Pump Bearing Replacement

Description: This disposition allows the bearings procured for the recycle evaporator feed pumps (PHE01A/B) to be used in the boric acid transfer pump (PBG02B) and the waste evaporator distillate pump (SHB02). The recycle evaporator feed pump and the waste evaporator distillate pump are not classified safety related whereas the boric acid transfer pump is safety related. The pumps, made by the same manufacturer, use the same bearing part number.

Safety Evaluation: A review of the purchase order shows that the subject bearing was procured with quality program requirements imposed on the vendor and as safety related (10CFR21 applied). Therefore, this substitution does not constitute any nonconformance.

Based on the above, the probability or consequence of a previously evaluated accident is not increased, the possibility of a new or different type of accident is not created and the probability or consequence of malfunctions of any equipment will not result.

CORRECTIVE WORK REQUEST DISPOSITION: 06592-88 Revision: 0

Title: Waste Evaporator Condensate Tank Pump Inboard Ball Bearings Replacement

Description: This disposition accepts as-is the application of six vendor supplied inboard ball bearings installed in the waste evaporator condensate tank pump. The subject ball bearings are applicable to the recycle waste evaporator concentrate pump.

Safety Evaluation: All Goulds model 3196 pumps (regardless of size) have a standard radial bearing which is made of steel. The subject bearing was supplied by the vendor as QA Code Commercial/Non-safety. The recycle evaporator concentrate pump and the waste evaporator condensate tank pump are both Goulds model 3196ST pumps. Therefore, based on the above discussion, the subject inboard bearing is interchangeable with the waste evaporator condensate tank pump.

The subject replacement ball bearings are identical to the originally installed ball bearings, therefore the function of the waste evaporator condensate tank pump is not adversely affected. The waste evaporator condensate tank pump does not serve any safety design basis.

Based on the above, the probability of occurrence or the consequences of an accident or malfunction of a different type than any evaluated previously is not created; and the margin of safety as defined in the basis for any Wolf Creek Generating Station (WCGS) Technical Specification is not reduced. There is no impact on any WCGS Technical Specification or associated bases.

ENGINEERING EVALUATION REQUEST DISPOSITION: 88-HB-06 Revision: 0

Title: Installation Of Duratek Skid

Description: This disposition supplements the existing safety evaluations performed in support of the temporary installation of the Duratek liquid radwaste processing skid in Low Level Storage Room 7225. This evaluation is to verify that this installation satisfies commitments to Regulatory Guide 1.143, specifically Sections 1.1.3 and 5.

Safety Evaluation: Calculation XX-FH-008, Revision 0, was performed to qualify Low Level Storage Room 7225 and base mat to the requirements of Regulatory Guide 1.143, Section 5. The concrete walls and base mat were evaluated, with an input motion at the foundation, defined by normalizing the Regulatory Guide 1.60 Spectra to Operating Basis Earthquake maximum ground acceleration of 0.12 G. A very conservative amplification factor to account for multifrequency excitation and multimode response of the structure to this ground motion was used. Also, a 1.50 multiplication factor was added to the above amplification for structural response, to account for static analysis. It was found that there was about 30 percent reserve in the concrete reinforcing steel for the walls and even greater reserve for reinforcing steel in the concrete mat.

Also, a thorough comparison with the existing Radwaste Building, which is designed to the requirements of Regulatory Guide 1.143, was made. The Radwaste Building is a multi-level structure which houses significant amounts of equipment. The wall thicknesses and reinforcing are similar to those provided in Low Level Storage Room 7225 and the base mat.

Hence, based on the analysis and comparison discussed above, Low Level Storage Room 7225 and base mat, which houses the Duratek liquid radwaste processing system meets the seismic requirements of Regulatory Guide 1.143, Section 5.

In addition, the floor area around the Duratek liquid radwaste processing system in Room 7225 and drains, slope to a sump which is a part of the Radwaste System. Any leak from the Duratek liquid radwaste processing system or its hoses would be contained by the sump. The sump has two redundant pumps. A stainless steel liner is located in the trench which passes over the isolation joint, separating the buildings. This will prevent leakage to the ground. The sump and the trench capacity is approximately 1800 gallons. In the event that this sump overflows, (all areas served by this sump are surrounded by a 6 inch curb, except for the area north of the drywaste compactor, Room 7228) wastewater would be contained by the floor drain at the north end of Room 7228. This drain is connected to the independent sump in Room 7113 of the Radwaste Building. Also, either an operator or Duratek technician is always monitoring the liquid radwaste processing. If the drains in Room 7225 are clogged for any reason the door opening is surrounded by a 6 inch curb. This in itself provides sufficient capacity for any spills. Hence, spill containment is not a concern.