New Hampshire
Yankee

Ted C. Feigenbaum
Senior Vice President and
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NYN-90118

May 30, 1990

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

References: a) Facility Operating License NPF-67, Docket No. 50-443

b) Facility Operating License NPF-86, Docket No. 50-443

c) PSNH Letter (SBN-1211) dated October 9, 1986, "10CFR50.59 Evaluation," G. S. Thomas to V. S. Noonan

d) New Hampshire Yankee Letter NYN-90051 dated March 1, 1990, "10CFR50.59 Quarterly Report", T. C. Feigenbaum to USNRC

Subject: 10CFR50.59 Quarterly Report

Gentlemen:

Enclosed please find the Quarterly Report of 10CFR50.59 Safety Evaluations for Seabrook Station. This report covers the period of January 1, 1990 to March 31, 1990, and is being submitted pursuant to the reporting requirements outlined in Reference (c).

Should you require further information regarding this matter, please contact Mr. Richard R. Belanger at (603) 474-9521, extension 4048.

Very truly yours,

Ted C. Feigenbaum

TCF/CLB:dma

Enclosures

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New Hampshire Yankee
May 30, 1990

ENCLOSURE 1 TO NYN-90118

Seabrook Station 10CFR50.59 Quarterly Report

January 1, 1990 to March 31, 1990

New Hampshire Yankee
May 30, 1990

ENCLOSURE 1 TO NYN-90118

Seabrook Station
10CFR50.59 Safety Evaluation
Quarterly Report
January 1, 1990 to March 31, 1990

1. Design Changes

The below listed design changes were made at Seabrook Station and safety evaluations were performed pursuant to the requirements of 10CFR50.59.

Design Coordination Report: Number 86-011
Title: Fuel Transfer Tube Quick Closure Hatch
Description: During refueling operations, fuel assemblies are transported between the Reactor Containment Building and their storage area in the Fuel Storage Building via an underwater Fuel Transfer System. This system has a conveyor track assembly which extends from the Reactor Containment Building into the Fuel Storage Building. Where this track assembly penetrates the boundary between these buildings, it passes through the fuel transfer tube. Presently, the fuel transfer tube on the Reactor Containment Building side is sealed during normal operation with a closure flange. This flange is attached to the transfer tube by twenty bolts which must be removed and reinstalled for each refueling. It takes two men approximately one hour to remove the flange and about twice that time to reinstall, due to bolt torquing requirements. These operations are performed in an environment which could have dose rates as high as 3 R/hr.

This Design Coordination Report (DCR) was initiated to minimize personnel exposure. It replaces the existing blind flange with a "quick closure" fuel transfer tube hatch. The design of this quick closure hatch permits removal and reinstallation in about 10 or 20 minutes, respectively.

This change is essentially a one-for-one substitution of the blind flange with the exception of the closure mechanism. The bolts will be replaced with a system of tapered locks. A pin, chained to each lock, is inserted to positively secure the lock in the closed position. The pin contains spring-loaded ball detentes which preclude the possibility of any inadvertent disengagement of the pin and subsequent release of the tapered lock. The design requirements, function and service environment have not been altered.

Design Coordination Report: Number 86-011 (Continued)

The quick closure hatch is part of the Reactor Containment Building pressure boundary. As a result, the hatch is designed not only for the pressure, temperature, and environmental conditions associated with submerged refueling water operation, but also as part of reactor containment pressure boundary. In general, the design fabrication and testing requirements for the quick closure flange are identical to those as for the existing blind flange. It is ASME, B&PV Code, Section III, Subsection NE, Class MC and Seismic Category I.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 86-113
Title: Explosive Gas Mixtures
Description: This Design Coordination Report (DCR) was initiated to install a vessel high point sample connection to evaluate the effectiveness of a vessel nitrogen purge of the Letdown and Primary Drain Tank Degassifiers.

The piping and valves involved are compatible with the degassifier components. The sample root connections are ASME VIII vessel attachments. The piping will have the same design criteria as the degassifier.

This DCR also provides for the installation of a cross-connection between the letdown degassifier vent line and the aerated header. The administrative control of monitoring Reactor Coolant System (RCS) chemistry coupled with procedure controlled plant start-up evolution, will prevent the release of significant amounts of hydrogen to the aerated vent header. The aerated header is a non-recycle design and is continuously processed. Therefore, the implementation of the cross-connection will not result in a buildup of hydrogen or create an untreated, unmonitored release path. In addition, it will preclude any oxygen build-up in the waste gas system due to degassifier operation during RCS heatup. The double valve isolation provides assurance that there will not be any hydrogenated/aerated header leakage during normal plant operation. This arrangement is consistent with the header isolation provided for the reactor coolant drain tank venting process.

Design Coordination Report: Number 86-113 (Continued)

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 86-481
Title: Transfer Switch for Inverters UPS-I-1E and 1F and UPS Sensing Transformer Secondary Voltage Connection
Description: This Design Coordination Report (DCR) was initiated to provide a high speed, automatic, static transfer switch between inverters UPS-I-1E, 1F and the maintenance supply for uninterruptable transfer of power feed to vital instrument buses 1E and 1F. The previously existing design could cause power interruptions to vital power panels in the event of an inverter malfunction.

This DCR evaluates any possible effects on the safety function of the static switch or associated devices. This included looking into the effect of the switch being fed by both safety and non-safety related devices, primary and secondary winding welding together, and failure of the transfer switch in the open condition, causing the loss of the inverter to the vital bus. This evaluation showed this modification to improve the overall reliability of the power feed vital instrument buses and not to reduce the margin of safety.

This DCR also corrects a drawing that shows a sensing transformer voltage as 12 volts, whereas, it has been shown that this voltage is actually 24 volts.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 86-572
Title: Control Building Battery Room/PAB Laydown Temperature Monitoring
Description: This Design Coordination Report (DCR) was initiated to add area temperature monitoring to the train A and B battery rooms to allow the monitoring of Technical Specification temperature limits. It also adds a switch to notify the Control Room, via the main plant communication system, of a low temperature in the south laydown area of the Primary Auxiliary Building (PAB). This area contains boric acid lines which are subject to solidification.

Design Coordination Report: Number 86-572 (Continued)

These modifications serve no control function, they only provide information. Therefore, these modifications do not increase the possibility or consequences of a malfunction of equipment important to safety, but instead, alert operators to possible problems.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 87-033
Title: Emergency Eye Wash/Shower Stations
Description: This Design Coordination Report (DCR) was initiated to provide for personnel safety requirements near chemical addition points. This DCR provided for the installation of four eye wash/shower stations, plus one safety shower, and one portable eye wash station. They are located in the turbine building, primary auxiliary building (PAB), waste processing building (WPB), fire pump house (FPH) west room, waste treatment tank (WTT) room, and service water cooling tower (SWCT), respectively.

The water supply for the turbine building, and FPH stations is provided by the existing potable water system. The PAB and WPB modification required a piping size change from 1 1/2" to 1 1/4". Water for the WTT room, PAB and WPB station is provided by the existing demineralized water system.

This modification affects only the demineralized and potable water systems; these systems are not considered to be important to safety. However, any piping or other components that are installed in safety related areas are seismically supported.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 87-076
Title: Replacement and Relocation of Sample System Isolation Valves
Description: This Design Coordination Report (DCR) was initiated to replace certain sample system isolation valves. These valves were of a standard stem packing and have shown some leakage.

Design Coordination Report: Number 87-076 (Continued)

The replacement valves are of a welded bellows construction, thus eliminating any possible stem leakage. The majority of the valves and tube runs associated with this DCR are classified as ANSI B31.1 and do not require any additional special consideration. However, to complete the valve change-outs per this DCR, four ASME valves and their associated 3/8" upstream tube runs have been reclassified from ASME III Class 2 and 3 to ANSI B31.1. The affected items are 1-CS-V1181, CS-V825, CS-V758 and CS-V853 and their upstream lines.

These valves and lines are sample system lines from Chemical Volume and Control Subsystems, such as the mixed bed demineralizers, the letdown heat exchanger, thermal regeneration and the chemical volume and control tank. These sample lines are used for primary sampling during normal plant operation. Reclassification of these items is based on their installed configuration. FSAR Section 9.3.2.1 states that sample lines and components conform to the classification of the system to which they attach. Additionally, this same FSAR section allows for classification to a lower quality group provided adequate flow restriction is present. In each case associated with this DCR, an upstream restrictor is reducing the sample line size from 3/4" to 3/8", and an accessible isolation valve is present.

Reclassification of the items described above will not increase the probability of an accident previously evaluated in the FSAR. Nor will an accident associated with any of these reclassified lines have any affect on equipment important to safety, or their loss cause, or prevent any safety function, or impair accident mitigation efforts.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 87-136
Title: Mid-Loop Operations Instrumentation Enhancements
Description: This Design Coordination Report (DCR) provides instrumentation enhancements per the requirements of NRC Generic Letter (GL) 88-17, "Loss of Decay Heat Removal". Specifically, it provides for new Residual Heat Removal (RH) pump suction pressure instrument loops and provides for pressure compensation of the existing Reactor Coolant System

Design Coordination Report: Number 87-136 (Continued)

(RCS) shutdown level transmitter LT-9405. In addition, the range of LT-9405 has been extended to provide for RCS level monitoring from the bottom inner diameter of the hot legs to approximately 33% pressurizer level. These changes constitute part of the enhancements committed to in the response to GL 88-17.

The instrument changes of this DCR will not increase the probability of a malfunction of either the RH or RC systems. The purpose is to provide key information to help the operators prevent vortex formation at the RH pump suction. These changes will aid in operating the equipment within its design capability and help in preventing a malfunction. This instrumentation is non-safety related. It will only be in service during RCS filling, draining and mid-loop operations. This DCR followed the design guidance provided in GL 88-17.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 87-229
Title: Additional AYDIN Computer Terminal in the TSC
Description: This Design Coordination Report (DCR) was initiated to put an additional AYDIN terminal in the Technical Support Center. This DCR includes changing the power supply of the existing terminal from a lighting circuit so both will be powered from non-vital uninterruptable power supply (UPS) distribution panel ED-PP-2A.

The appropriate changes were made to the non-class 1E UPS loading calculation and an evaluation was done to ensure there would be no problems in attaching a necessary support to a firewall.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 87-248
Title: Update of Diesel Loading Calculation
Description: This Design Coordination Report (DCR) was initiated to make the necessary revisions to the diesel loading calculation, voltage regulation calculation, fuel oil storage tank minimum volume calculation, and the Final Safety Analysis Report (FSAR) diesel loading tables. The diesel loading calculation shows that the diesel is loaded within its continuous and step load capabilities, and in accordance with Regulatory Guide (RG) 1.9 and the FSAR. Changes to the voltage regulation calculation should not result in significant changes to the results of the calculation, such that the computer program generated results remain acceptable. The fuel storage tank minimum volume calculation shows that the existing technical specification minimum volume limit is adequate to support operation of all loads connected to the diesels for the operations indicated in the calculation.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 87-268
Title: Waste Gas Sample Purge
Description: This Design Coordination Report (DCR) was initiated to combine several changes related to waste gas sampling and purging.

The first of these changes deals with the waste gas drain pot. The pot collects condensate drainage from various points of the waste gas and vent gas systems. Accordingly, the pot normally contains a hydrogenated atmosphere. The existing piping arrangement does not include sample ports, therefore, vessel contents cannot be verified with respect to potentially explosive mixtures.

Through this DCR, a sample line shall be added to the pot. Piping and tubing shall be compatible with the installed material. Valves shall be a metal diaphragm type in order to prevent valve-to-atmosphere leakage. The sample line shall be routed to a sample sink. The affected portions of the waste gas and sample systems are non-safety related and non-seismic.

The iodine guard beds (IGBs) are also affected by this DCR. The IGBs are filter cartridge type units which will require periodic change-out. Unlike the particulate filters, the

Design Coordination Report: Number 87-268 (Continued)

IGBs do not have local test connections. Such test connections provide the ability to individually purge the vessels during the cartridge change-out process. This minimizes the amount of nitrogen introduced into the system during normal operations and allows post-change-out oxygen purges to local exhaust ventilation.

Local, normally isolated test/purge connections shall be added to the IGBs by this DCR. The new piping shall be compatible with the installed material. The new valves shall be the metal diaphragm type. The affected portions of the waste gas system are nonsafety-related and non-seismic.

The volume control tank (VCT) normally contains a hydrogenated atmosphere. Consequently, vessel maintenance or modification requires assurance that the vessel is adequately purged of potentially explosive mixtures prior to personnel entry or the performance or ignition work. The VCT presently has nitrogen purge capabilities. An alternative to the nitrogen purge is to "flood" the vessel. Once "flooded", the vessel would be drained under a nitrogen blanked and then vented, thus assuring an inert atmosphere. The same "flood" process can be used to place the vessel back in service, thus minimizing the quantity of nitrogen needed and the time needed for placing into service. This DCR will accommodate this alternative by adding a (sight) flow gage. Tubing shall be compatible with the existing installation.

This DCR also includes a method of ensuring that high purity hydrogen gas can be supplied to the Reactor Coolant System (RCS) during periods when waste gas system recycle gas purity is inadequate. A direct supply line from the hydrogen gas make-up skid to the VCT and hydrogen gas injector shall be added, while leaving the original hydrogen gas make-up to the waste gas header function unchanged. Once the recycle gas purity is acceptable, the direct hydrogen supply should be isolated and the waste gas header realigned to the VCT and hydrogen gas injector. The new piping and valves are compatible with the existing installation.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 87-405
Title: DAH Damper DP-15A and DP-15B Replacement
Description: This Design Coordination Report (DCR) was initiated to change the presently installed pneumatically actuated dampers in the Diesel Air Handling (DAH) system to gravity operated backdraft dampers. These new dampers are inherently reliable since they require no controls and no power supplies. They remain closed as long as the supply and exhaust fans are not operating. This prevents backflow under all operating conditions, unlike the pneumatically actuated dampers. The pneumatically-actuated dampers had problems with backdraft during a loss of power or air since they were required to fail in the open position.

DCR 87-405 also changed the setpoint for initiating operation of the DAH supply and exhaust fans. The current setpoint caused excessive operation of these fans. Calculation C-S-1-87902 shows that the required average annual temperature maximum of 77°F can be maintained without operation of these fans, except during diesel generator operation. By raising the temperature setpoint to 99°F, the fans will only be initiated when the diesel generators are running, or on extremely warm summer days.

This increased temperature setting will not raise the annual average temperature above the limit of 77°F and will not affect the design life of any class 1E equipment.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Design Coordination Report: Number 89-083
Title: Replacement of Containment Isolation Valve 1-RMW-V30
Description: The existing Containment Isolation Valve for the Reactor Make-up Water System, 1-RMW-V-30, has a history of unsatisfactory leak tests when tested subsequent to a prolonged period of operation. Through investigation and inspection of the valve internals, it was established that design of the gate valve allows rapid wear of the valve seats. This results in leakage in excess of the stringent requirements for Containment Isolation Valves.

This Design Coordination Report (DCR) was initiated to correct this problem two ways. It replaced the existing valve with a tight shut-off globe type valve, and changed the operation status of the valve from normally closed to normally open. This minimizes the number of valve strokes required during normal plant operation, thereby, significantly reducing valve wear.

Design Coordination Report: Number 89-083 (Continued)

The new valve meets the design requirements of the original valve. It is ASME class 2 and meets the design objectives provided by Standard Review Plan 6.2.4, 'Containment Isolation System'. In addition, Regulatory Guide 1.141, 'Containment Isolation Provisions for Fluid Systems', and Branch Technical Position CSB 6-3, 'Determination of By-pass Leakage Paths in Dual Containment Plants', apply to this DCR. Technical Specification 3/4.6.3 provides limiting operating conditions for containment isolation valves and the required closure times.

Before this design change was implemented, 1-RMW-V-30 was routinely operated approximately four times per day in order to fill Reactor Coolant Pump Seal Standpipes. The valve operating status has been changed from normally closed to normally open to minimize the frequency of operation and associated valve seat wear and leakage rate increase. The valve will still close on the same signal as in the original design and is still a fail-close type valve in the event of Instrument Air supply failure or solenoid malfunction. Valve reliability should not be reduced. This change in valve status will not create a new, high energy line source that could potentially impact the service environment.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

2. Minor Modifications

The below listed minor modifications were made at Seabrook Station and safety evaluations were performed pursuant to the requirements of 10CFR50.59.

Minor Modification: Number 89-539
Title: Relocation of Seismic Monitor 1-SM-XR-6708 (T, L, and V)
Description: Triaxial response seismic monitor 1-SM-XR-6708 was previously located in the southwest corner of the service water pump house. This area tends to be damp from service water pipe sweating and here the monitor is prone to flooding during service water line draining. Although the monitor is sealed against normally expected moisture, this environment is damaging to the monitor.

To correct this problem, this Minor Modification (MMOD) was initiated to move the monitor. This new location is eighteen feet higher in the electric room. Here, the monitor will not be exposed to the high moisture conditions of the previous location.

Minor Modification: Number 89-539 (Continued)

The earthquake response spectrum measured by this monitor will be identical at both locations. The new location was chosen based upon guidance provided in Regulatory Guide 1.12, Revision 1.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment. In addition, revised Technical Specification Tables 3.3-7 and 4.3-4 were issued with Facility Operating License NPF-86 on March 15, 1990.

Minor Modification: Number 89-545
Title: Fire Hydrant Hose House Relocation
Description: This Modification Minor (MMOD) was initiated to relocate Fire Hydrant Hose House No. 12 from its present location, east of Warehouse No. 1, to a new location at Fire Hydrant No. 10, east of Unit 1 Turbine Building. There presently exists a concrete pad ready for a hose house. This pad previously housed Hose House No. 10, before the addition of the temporary trailers and buildings to the area.

With the addition of all the temporary trailers, buildings and flammable gas storage to the area east of Unit 1 Turbine Building, this local hose house connected to a fire hydrant, will provide the necessary protection. Since these structures have detection, but no suppression, a hose house in the area will enhance the manual fire fighting capability.

The area east of Warehouse No. 1, previously serviced by Hose Houses No. 2 and No. 12, will still be adequately covered by Hose House No. 2 located approximately 50 feet away. Warehouse No. 1 has an automatic sprinkler system installed, and is capable of being reached by Hose House No. 2, which has a 250 foot length of 2 1/2" hose connected to hydrant No. 2. Since this area is outside the protected area, Appendix R requirements do not apply. The extra hose house in the vicinity was added during Unit 2 construction and is no longer needed.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

Minor Modification: Number 89-521
Title: PCCW Heat Exchanger Restoration
Description: This Minor Modification (MMOD) was initiated due to the Primary Component Cooling Water (PCCW) heat exchangers experiencing unacceptable tube leakage. Upon investigation, considerable pitting of the 90/10 Cu Ni Tubes and 70/30 Cu Ni tube sleeves presently installed was observed. Erosion of the heat exchanger tubes was most predominant immediately downstream of the tube inlet sleeves.

This MMOD provides short term modifications which will restore the PCCW Heat Exchangers to an operable status. Changes consist of replacement of the existing three inch tube inlet sleeves with eight inch length sleeves, and plugging tubes which have a potential for through wall leaks prior to the first refueling cycle.

Conservatively assuming that no heat transfer takes place across the five inches of metallic sleeve extending into the effective tube length, plugging 203 tubes, as required on the train A exchanger, would not reduce the heat exchangers design heat load capabilities. The heat exchanger vendor has previously authorized plugging 250 tubes. The vendor has confirmation that a total of 220 tubes can be plugged with the eight inch sleeves installed.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question.

Minor Modification: Number 90-507
Title: SI-V130 Spring Dimensions
Description: Safety Injection (SI) pump "cold" leg injection check valve, SI-V130 was found with spring dimensions different from other check valves supplied of this type and size. The remaining SI pump injection path check valves have springs with dimensions which are correct as verified by the Vendor.

This Minor Modification (MMOD) evaluates use of the as-found spring and concludes that the spring may remain in service. Replacement of this spring with one of the correct dimensions requires flow balance verification. Each of the four cold leg injection paths include a flow element, throttle valve and check valve (SI-V130, 126, 122 and 118). The paths and system are balanced during preoperational testing to satisfy criteria delineated in "Westinghouse Systems Standard", NAH-TAC-01.

Minor Modification: Number 90-507 (Continued)

A safety evaluation of this modification was performed since equivalency of the different springs could not be determined. Both SI pump flow balancing test results and routine Reactor Coolant System (RCS) pressure boundary valve leak rate testing support a determination of functional equivalency of SI-V130 to the other cold leg injection path check valves. There are no additional failure modes which need be considered since the basic valve design has not changed. The possibility of an accident of a different type than any previously evaluated in the FSAR will not be created. The basic design of SI-V130 remains unchanged. The spring installed in this valve, however, may have a slightly different spring rate than springs having the correct dimensions. This difference would not result in a malfunction, since functional equivalency of this valve with others serving this function has been established. The possibility of a malfunction of a different type than that previously evaluated is not created.

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question.

3. Temporary Modifications

The below listed temporary modification was made at Seabrook Station and a safety evaluation was performed pursuant to the requirements of 10CFR50.59.

Temporary Modification: Number 86-066
Title: Routing Cables for Power Ascension Testing
Description: This Temporary Modification (TMOD) was initiated to support low power testing and power ascension testing. It involves routing cables to various locations for connecting instruments which transmit temperature and movement data for both thermal and dynamic tests.

The routing of this cable required a penetration through a firewall to obtain access to the Emergency Feedwater Pumphouse. The penetration, once sleeved and with the cable installed, was foam-sealed to maintain the fire barrier. This Temporary Modification does not create a different type of accident than addressed in the Final Safety Analysis Report (FSAR). An engineering evaluation determined instrument cables could safely be run through this penetration.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 88-012
Title: Service water Materials Test Rig
Description: This Temporary Modification (TMOD) was initiated for the installation of a Service Water Materials Test Rig. This testing consists of a temporary submersible pump, five inch fire hose, piping and valves, which provide a flow of seawater to material specimens for the purpose of measuring corrosion rates. The submersible pump is located upstream of the service water pump traveling screens. The system discharge is directed to the circulating water pump bay. Nothing in the system is connected to any permanent plant systems.

The pump and hose are lowered through a floor opening on the intake transition structure (upstream) side of the service water pump traveling screens. The pump, discharge hose, and power cable are secured by tether/recovery rope. The water velocity in this region of the pump bay is very low (approximately 0.1 feet/second). The pump and hose are heavy so that even if the pump, hose and cable become detached from the tether, they would tend to sink directly down from the point of installation. In this type of failure, the screens would prevent any interference with the pumps. However, if they did interfere with the traveling screens, it would be detected by routine monitoring of screen operation or by the screen differential level alarm. Also because of the pump weight and low water velocity, it is unlikely that the tethered assembly would move far enough to rest against the screen. If this were to occur, this effect would be merely the same as a slight amount of debris.

The pump motor is powered from a plug-in welding outlet, and has been evaluated to have no effect on emergency power distribution.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 88-034
Title: Waste Liquid Temporary Demineralization/Filtration
Description: This Temporary Modification (TMOD) was initiated to provide a mobile waste liquid treatment skid necessary to process potentially radioactive effluent directly to the waste test tanks (WTTs). With this TMOD, liquid from the floor drains tank will go to a qualified vendor's skid for processing and return to the WTTs for direct discharge if quality and radioactivity levels are within design limits.

Temporary Modification: Number 88-034 (Continued)

The skid and associated booster pump are to be located in the solid waste storage area where no other equipment, either safety or non-safety, is installed. Hoses will be secured and this TMOD will not interact with any equipment important to safety. In addition, the layout and routing of the skid and equipment is such that equipment important to safety cannot be physically damaged by the loss of structural integrity in any portion of this TMOD.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 89-039
Title: PCCW A and B Train Temporary Clean-Up Filter/Demineralizer System
Description: This Temporary Modification (TMOD) was originally reported via Reference (d), which submitted Safety Evaluations for October 1, 1989 to December 31, 1989. In this report, TMOD 89-039 was reported to affect only the B train of the Primary Component Cooling Water (PCCW). The later revision of the TMOD now allows the use of the temporary clean-up filter/demineralized system to be used on either the A or B trains. However, at no time will the system be connected to both trains. All other aspects of this TMOD remain the same.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 89-048
Title: Evaluation of Pressure Drop Across 1-CC-E-17B
Description: This Temporary Modification (TMOD) was initiated for the installation of pressure indicators downstream of service water (SW) valves 1-SW-V97, V98, and V99. These are the vents and drain line on the service water side of heat exchanger 1-CC-E-17B. These valves are normally closed and are used in the filling and draining of the service water system.

Temporary Modification: Number 89-048 (Continued)

This TMOD requires the manual manipulation of these valves during data collection. They will be continuously manned during the data collection. Once data collection is complete, the valves will be returned to their normal closed position. This data collection will not subject the system to any conditions which would have an adverse effect on safe operation of the plant.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 89-049
Title: Temporary Steam Sampling Lines for ST-37
Description: ST-37, "Steam Generator Moisture Carryover Measurement", requires sample lines to be installed for each Steam Generator. This Temporary Modification (TMOD) installs sample tubing to temporary isolation valves to feed sample coolers and to provide cooling water to the sample coolers from the demineralized water system. It will only be installed for a very short period of time.

The lines will be installed downstream of permanent isolation valves. Therefore, if a leak occurred, it would be isolated using normal leak isolation techniques. Sample point 1 of the main steam header will continue to be used to monitor the chemistry in the steam lines. The steam sampling lines are downstream of the main steam isolation valves. In the event of a steam generator (S/G), tube leak or tube rupture, the S/G would be isolated.

The only plausible accident associated with the installation of the temporary steam sampling lines is a small line steam break. This would be isolable by the permanent isolation valves, and is not affected by this change.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 90-003
Title: Temporary Power for Non-Vital Panel ED-PP-5
Description: This Temporary Modification (TMOD) was initiated to facilitate completion of a design change with the minimum amount of outage time. The existing configuration is such that PP-5 is supplied 120V power from UPS ED-I-4. ED-I-4 receives AC power from MCC 511 and DC power from Station Battery Bus 12B.

Temporary Modification: Number 90-003 (Continued)

Non-Vital UPS ED-I-4 was non-functional at the time of this change. The design change related to this TMOD is to upgrade this inverter and associated equipment. This TMOD simply bypassed UPS ED-I-4, and PP-5 was wired directly to MCC-511. This TMOD was installed for only a very short period of time.

Non-vital panels PP-5 and PP-3A are the only load centers supplied by EP-I-4. They supply important but non-safety related loads generally involving instrumentation, alarms, communications equipment, and certain balance of plant system controls.

The emergency communication systems and fire protection alarm systems powered from PP-5 are considered essential plant equipment important to emergency response and general plant operations. These systems were placed on a backup source of power, via other TMODs, during the time that PP-5 was de-energized to implement these changes. Operations procedures were developed to provide added controls to facilitate the outage and to ensure other existing installed backup or alternate power sources were used where applicable, compensatory measures were taken, or precautions were cited. PP-5 was returned to service power to entry into MODE 4.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 90-011
Title: Main Generator Temporary Relaying
Description: This Temporary Modification (TMOD) was initiated to support load testing to be performed during power ascension testing. This TMOD disables a portion of the main generator over current relay protection. The "Time Over Current Relay with Voltage Restraint", "Different Relay for Generator-Transformer", and the Differential Relay for Generator", will be disabled by removing the relay test jacks. This will allow these relays as required, to be load checked prior to being placed into service. A temporary over current relay will be substituted for these devices and will use current from the main generator's reverse power relay.

The load testing process for the permanent relays is a normal part of the initial plant startup effort. This process will ensure that there is adequate relay protection during this relatively short period of time, and will eliminate the uncertainty associated with using the permanent relays until the system is checked out and all of the plant specific operating levels are determined. The probability of

Temporary Modification: Number 90-011 (Continued)

developing electrical faults inside or outside of the station will not be increased merely by the presence of the temporary relays. The threshold for a control breaker trip may be slightly different. However, the long term overall reliability of the main generator electrical system and the 345KV system will be increased rather than decreased by this process. There will be no physical interface with other equipment important to safety. If the temporary relay was to fail to perform its protective function, 345KV system relays would isolate any electrical fault that was present.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 90-012
Title: Temporary Power to MCB-1 Fire Alarm Module
Description: This Temporary Modification (TMOD) involved the use of temporary 120V AC power for the fire alarm console on the main control board. The normal feed to the fire alarm console is from a 120V AC uninterruptable power supply. This TMOD provided a temporary power supply from a local convenience outlet powered from a non-emergency 120V AC power panel for the short period time it was installed. To compensate for the use of non-uninterruptable power, a security guard was posted at the fire alarm console.

The temporary power cable was routed such that it did not interfere with other plant equipment and did not use permanent wireways or conduit. It did not violate any Class 1E electrical separation criteria. The analysis for the circuit containing the convenience outlet used temporarily to power the fire alarm panel was not be affected by this application.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 90-013
Title: Use of Portable Demineralization Units in the Steam Generator Blowdown System
Description: This Temporary Modification (TMOD) was initiated to install a portable demineralization unit to piping connections (installed via a minor modification), to provide additional clean-up capability to the steam generator blowdown system liquid during initial startup and power ascension operations. The portable unit will provide the capability to produce high quality effluent meeting or exceeding the capability of the permanently installed demineralizers, and reduce the need for plant secondary side water make-up.

This TMOD is connected to the non-nuclear safety, non-seismic steam generator blowdown (SGB) system. The use of this TMOD will not defeat or affect the automatic isolation of the blowdown system upon high pressure or level in the SGB flash tank or presence of the Emergency Feed Pump Start Signal. The demineralization unit will be isolated upon loss of power.

Conclusion: A 10CFR50.59 safety evaluation was performed for this temporary modification, and it was determined that this change will not create an unreviewed safety question.

Temporary Modification: Number 90-014
Title: MS-V88 Accumulator Nitrogen Pressure Switch Open Link
Description: Main Steam Isolation Valve (MSIV) MS-V88 accumulator pressure is monitored by two pressure switches which are wired in parallel to a computer point. One of these switches has failed in an alarm condition, this is causing a constant alarm. To repair or replace the switch, MSIV accumulator pressure must be bled off. This would affect the OPERABILITY of the MSIV if attempted in MODES 1 through 4.

This Temporary Modification (TMOD) was initiated to disable the failed switch with an open slide link, and allow the MSIV accumulator pressure to be monitored by a single pressure switch. The open slide link will not cause any electrical system interactions and will merely cause a passive disablement of the defective switch.

The pressure switches perform an alarm only function. Two switches were provided for added reliability in case of a failure such as the one that occurred. With one of two switches failed in an alarm condition, a true low nitrogen pressure condition would be masked, since the switches are wired in parallel. Disablement of the defective switch as described in this TMOD will allow the remaining switch to perform its function, but will not affect the pressure boundary of the MSIV nitrogen accumulator.

Temporary Modification: Number 90-014 (Continued)

Conclusion: A 10CFR50.59 safety evaluation was performed for this design change, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

4. Technical Requirements Manual

The below listed changes were made to the Technical Requirements Manual at Seabrook Station and safety evaluations were performed pursuant to the requirements of 10CFR50.59.

Technical Requirements Change: Number 87-001
Title: Technical Requirements Number 12-3.3.3.7
Description: Design Coordination Reports 86-555 and 89-074, reported via Reference (d), provided a carbon monoxide monitoring system for fire detection in Seabrook Station's nuclear air cleaning systems. This technical requirements change adds the carbon monoxide detection instrumentation to Technical Requirement 12-3.3.3.7.

Conclusion: A 10CFR50.59 safety evaluation was performed for this Technical Requirements Manual change and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report have been incorporated by means of amendment number 63.

5. Final Safety Analysis Report

The below listed final safety analysis report change request has been issued at Seabrook Station, and a safety evaluation was performed pursuant to the requirements of 10CFR50.59.

Final Safety Analysis Change Request: Number 89-099
Title: FSAR Table 14.2-5, Startup Test Abstract Revisions
Description: This Final Safety Analysis Report (FSAR) Change Request (FCR) involves minor changes to the Startup Test Abstracts in Table 14.2-5 of: ST-28, "Calibration of Steam and Feedwater Flow Instrumentation", ST-30, "Power Coefficient Measurement", ST-42, "Water Chemistry Control".

The change to the ST-28 test abstract involves the substitution of an equivalent method for determining accurate feedwater flow. A precision laboratory test on the feedwater flow venturies along with Yankee Atomic Electric Company (YAEC) calculation SBC-83 will allow the use of permanently installed instrumentation, instead of temporary special test instruments, to determine accurate feedwater flow.

Final Safety Analysis Change Request: Number 89-099 (Continued)

The change in methodology does not alter the scope of the test. The change in methodology will not create a situation where permanent plant instrumentation would be less accurate or less reliable. The methodology to make adjustments to other instrumentation using ST-28 during the initial power ascension will be unchanged and will use normal station procedures.

This change to the ST-30 test abstract provides more accurate wording for the test acceptance criteria. The change revises the criteria from determining that the correlated power coefficient is conservative with respect to the Westinghouse Design Report to a specific statement that the average-measured power coefficient verification factor should be within $\pm$ 0.5°F/% of the predicted power coefficient verification factor.

The change to the ST-42 test abstract corrects the references. FSAR 9.3.4 is not a complete reference for plant water chemistry control. The correct FSAR reference should be to 9.3.2 and 9.3.4. In addition, Westinghouse SIP 5-4 has been superseded by "Westinghouse Guidelines for Secondary Water Chemistry".

These changes involve no physical changes to existing plant equipment. Plant operating modes are unchanged and there are no departures from normal operating procedures.

Conclusion: A 10CFR50.59 safety evaluation was performed for this FSAR, and it was determined that this change will not create an unreviewed safety question. Changes to the Final Safety Analysis Report will be incorporated by means of a future amendment.

6. Procedures

The below listed procedure was approved and a safety evaluation was performed pursuant to the requirements of 10CFR50.59.

Procedure: Number OS90-1-4
Title: Removal of Non-Vital Instrumentation Distribution Panels ED-PP-5 and ED-PP-3A From Service in MODE 3
Description: The uninterruptable power supply (UPS) feature of Non-vital inverter ED-I-4 has recently been non-functional. Therefore, a Design Coordination Report (DCR) was developed to upgrade and restore this UPS to full service. Temporary Modification 90-TMOD-003, also included in this report, was installed to provide a reliable diesel fed maintenance power supply while the DCR work was in progress. This procedure is a special

Procedure: Number OS90-1-4 (Continued)

operating procedure developed to facilitate the completion of this design change, and the closeout of the Temporary Modification, with the minimum amount of outage time to non-vital instrument power panels ED-PP-5 and ED-PP-3. The reactor plant will be in stable Hot Standby, MODE 3, conditions during the entire time this procedure is in effect. This procedure establishes positive controls for the stable plant operation during the power switch-over sequence and helps ensure that the outage duration is kept to the absolute minimum period of time.

ED-PP-5 and ED-PP-3 are the two non-vital power distribution panels powered from UPS ED-I-4. These panels are not Class 1E but, supply important non-vital loads generally involving instrumentation, alarms, communications equipment, and certain balance of plant (BOP) system controls. This procedure involved two short, approximately 15 minutes each, interruptions of power to these panel separated by a brief interval of time, about 12 hours, during which power was supplied by a temporary feed which is not battery or diesel backed.

The emergency communication systems powered from ED-PP-5/3 are considered essential plant equipment important to emergency response and plant operations in general. These systems will be placed on a backup source of power during the time that ED-PP-5/3 are de-energized to implement these changes. OS90-1-4 will provide added controls to facilitate the outage and to ensure other existing installed backup/ alternate power sources are used where applicable, compensatory measures are taken, or precautions are cited. OS90-1-4 contains a complete listing of compensatory operator actions and alternate indications for the various instrumentation loops that are lost for short durations.

The safety evaluation OS90-1-4 considered two aspects of the evolution described. One aspect involved the physical changes necessary to provide temporary power to PP-5 and PP-3 during the approximated 12 hour period that the equipment associated with I-4 receives the final wiring changes and testing per the DCR. The second aspect involved the two short duration power outages to PP-5/3 and the brief duration that the temporary maintenance power supply is connected. It should also be noted that prior to the modification efforts on I-4, the UPS feature of this inverter was not functional and PP-5/PP-3 were powered form their maintenance power supply. This change will be a significant reliability improvement in this non-vital UPS.

Procedure: Number OS90-1-4 (Continued)

Conclusion: A 10CFR50.59 safety evaluation was performed for this procedure, and it was determined that this procedure will not create an unreviewed safety question.

7. Procedure Changes

Procedure changes that require review and approval by the Station Operation Review Committee (SORC) are subject to the requirements of 10CFR50.59. No procedure changes have been made during this reporting period that would require a change to the Final Safety Analysis Report.

8. Test or Experiments

There were no tests or experiments performed during this reporting period that require evaluations in accordance with 10CFR50.59.