Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

June 3, 1985
IP-LAH-852

Docket No. 50-286
License No. DPR-64

Dr. Thomas E. Murley, Regional Administrator
Region 1
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Code of Federal Regulations
10CFR50.59
Changes, Tests and Experiments

Dear Dr. Murley:

The following constitutes the annual report on changes, tests and experiments for Indian Point 3 Nuclear Power Plant as required by 10CFR50.59.

The Code of Federal Regulations, 10CFR50.59 (a) specifies that changes to the facility as described in the safety analysis report, changes in the procedures as described in the safety analysis report and conduct of tests or experiments not described in the safety analysis report may be made without prior Commission approval provided the proposed change, test or experiment does not involve a change in the technical specifications incorporated in the license or constitute an unreviewed safety question.

All the electrical modifications have been designed considering original separation criteria thus maintaining the integrity of electrical separation where required. These modifications were installed in accordance with standards equal to or better than those used during original installation. These modifications have been therefore deemed to not involve an unreviewed safety question.

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Any welding on the involved modifications has been accomplished using appropriate plant specific procedures based on applicable codes. These modifications were designed considering both thermal growth and seismic criteria as appropriate. They were also fabricated and installed in accordance with standards equal to or better than those used during orginal installation. These modifications have been therefore deemed to not involve an unreviewed safety question.

A description of such changes, procedures and tests performed at Indian Point 3 and a summary of the safety evaluations of each for the period of January 1, 1984 to January 22, 1985 are contained in Attachment I. Each has been reviewed to ensure that the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report has not been increased, the possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report has not been created, or the margin of safety as defined in the basis for any technical specification has not been reduced. It was concluded that the changes, tests and experiments do not constitute an unreviewed safety question.

Very truly yours,

WA Josiger

William A Josiger
Resident Manager

LAH:jr:03
Attachment

cc: Robert De Young, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Attn: Documents Control Desk

IP3 Resident Inspector's Office

ATTACHMENT I

Modifications and Evaluations

78-03-028 STR - Purge Valve Enclosure and PAB/FAN House Passageway

The purpose of this modification was to install; a passageway on the 73' elevation connecting the west side of the P.A.B. and the south door of the stair tower, a vestibule on the 80' elevation connecting the north door of the stair tower to the west door of the Fan House, and an extension of the vestibule on the 80' elevation to enclose the containment purge supply and exhaust valves.

In the past, the Containment Building purge supply and exhaust isolation valves were exposed to the weather. In addition access between the PAB and Fan House on the upper elevations required personnel to exit the structures. The enclosure eliminates concerns about climatic deterioration of the valves due to adverse weather conditions. Since these valves are containment isolation valves, their operability must be assured. The structural steel framing was designed to resist seismic loads given by Indian Point Unit #3 response spectra for the roof of the Fan House. Knee bracing provided lateral support for the framing in the direction tangent to the containment shell. Horizontal load in the direction perpendicular to the containment shell was carried directly into the Fan House concrete by concrete expansion anchors which were torque tested during installation. On the containment side, the roof is supported by columns. Proper flexibility was provided at the containment passageway roof interface to allow for radial expansion.

This work was designed in accordance with applicable seismic criteria. The South passageway on the roof of the PAB is required to withstand wind load, and this passageway was not a Seismic Class 1 structure.

All structural members were designed by the methods of the A.I.S.C. Specification for the Design Fabrication and Erection of Structural Steel for buildings. Load combinations and allowable stresses were in accordance with the U.S. Nuclear Regulatory Commission Standard Review Plan Section 3.8.4.

79-03-067 WDS-G - Gas Sampler, R-20, Isolation and Purge Valves

This modification provided a means of isolating and purging the R-20 gas sampler for periodic maintenance.

The modification was designed to decrease the venting of radioactive gas into the plant during maintenance of the R-20 gas sampler through valve isolation and a nitrogen purge. Purge gas is routed to the waste disposal system. All tubing runs were seismically supported per original plant design span tables.

80-03-020 FP - Fire Control and Alarm System CO_2 System Electrical and Instrumentation Installation

This modification provides increased protection for the Fire Detection and Suppression System. These portions of the CO_2 Fire Protection System were not installed under the PASNY Q.A. program since the areas they protect did not contain safety related equipment. They include the following systems:

1) Hazard #2, T/G Exciter
2) Hazard #3, T/G Bearings #1, 2 and 3
3) Hazard #4, T/G Bearings #4, 5, 6 and 7
4) Hazard #5, T/G Bearings #8 and 9
5) Hazard #6, Generator Purge
6) Hazard #9A, Boiler Feed Pump #31
7) Hazard #9B, Boiler Feed Pump #32

All terminations of these Non-Category I Systems to the Fire Detection Control Panel in the Control Room fall under the Q.A. Program as these items were classified as safety related.

82-03-078 RM - Radiation Monitoring of RAMS Building Vent

The purpose of this modification was to replace the existing particulate monitor with a particulate, iodine and noble gas monitor for the effluent discharged through the Radioactive Machine Shop Building Vent. In addition, remote metering of particulate, iodine and noble gas was installed in the radiation monitoring panel located on the fourth floor of the Aministration Building. In conjuntion with the meters, an alarm circuit was installed on the 4th floor Annunciator Panel which alerts personnel of radioactive releases. The installation of the three remote meters for the RAMS Building Vent upgrades the plant's Radiation Monitoring System thus upgrading the overall integrity of the site.

82-03-083 STR - Critical Function Monitoring System Multiplexer Room

The watch foreman's office and adjacent closet at elevation 53'- 0" were converted into the Critical Function Monitoring System (CFMS) Multiplexer Room and house the multiplexing equipment required for the Emergency Facilities Data Acquisition and Display System and Plant Computer Replacement. This new room has its own air conditioning system.

In the past, this room was supplied air conditioning from the control room air conditioning system. This modification capped the control room air supply at the turbine building side of the control room wall.

The capping of this air supply duct did not degrade the operation of the control room air conditioning system during either the normal or incident condition of operation.

82-03-124 EL - Alternate Power Capability Associated with Appendix R

This modification was to install an alternate feed capability utilizing manual transfer switches to Charging Pump #32, Charging Pump #31, Component Cooling Pump #32, and Instrument Isolation Cabinet in the electrical penetration area. A new feed to Backup Service Water Pump #38 was installed.

This modification provided alternate means of power to the above referenced equipment in the unlikely event that a fire has damaged the normal feeds. This consisted of alternate power cable feeds that provide power to equipment necessary to achieve hot shutdown. One alternate power cable provided a contingency feeder for a component cooling pump to maintain the RCP seals to minimize RCS inventory losses. A second alternate power cable provided a contingency feeder for either of the two charging pumps to enhance the ability for make up of RCS inventory losses. A third cable provided a contingency feeder for the instrumentation power cabinet, located in the penetration area, for powering the minimum instrumentation required. A fourth cable provided power from a new source for a backup service water pump to ensure a heat sink for the Component Cooling System.

The power source for the motor alternate feeds is from an installed extension of the 480-volt switchgear 312 located in the Turbine Building. This extension is a motor starting center with local control capability only. This extension will normally be in the energized state with all of the starters being in the open position. In order to energize loads from this extension, it is first necessary to reduce the load on Station Service Transformer 312 by an equivalent amount. The instrumentation cabinet alternate feed is also powered from Bus 312 through existing distribution panel PDP-TG1. The power sources provides alternate power via manual transfer switches located at the load locations except for service water pump 38. The only source of power to the Back-up Service Water Pump #38 is now from the extension from switchgear 312.

83-03-005 COND - Make-up Water Resin Filters

The purpose of this modification was to prevent potential intrusion of resin used in water purification before this water enters the condensate system, thereby eliminating ingress into the steam generators.

Three groups of filters were installed which are capable of removing resins down to ten microns from the 3 inch and 6 inch condensate tie lines with Con Ed, and from the temporary bottle demineralizers. This work included filters, piping, valves and local instrumentation.

The filters are passive devices which are designed for the temperatures and pressures of the lines which contain them. A line rupture in one of the filter lines will not adversely affect any safety-related function in the plant. They neither functionally affected, nor are they located near, safety-related equipment.

83-03-007 COMP - Radial Flux Tilt Computer Alarm

The radial flux tilt alarms on the SB1 panel in the Control Room were rewired to be operated through the plant computer rather than the presently used "NIS Detector Comparator." This results in a more reliable indication of flux tilt and prevents inadvertent actuation due to normal signal fluctuation.

The previous radial flux tilt alarms in the Control Room relied upon signals from the excore power range detectors. These signals were fed through a comparator circuit which determined the flux tilt in each quadrant of the reactor, for both upper and lower halves. If any of these valves exceeded 1.02, an alarm was initiated. (1.02 is the Technical Specifications limit; the actual alarm setpoint is conservatively set at 1.0175). Maximum operating flux tilts are usually in the range of 1.01 to 1.015. Because the normal flux tilt value was so close to the alarm point, spurious alarm annunciations due to electrical spikes or normal signal fluctuation were a frequent occurrence.

This modification allows the Control Room tilt alarms to be controlled through the plant computer, rather than the comparator. As the computer uses one minute time-averaged signals for its calculations, the alarm is shielded from signal fluctuation. Additionally, the computer recognizes when a power range detector is malfunctioning or out of service and informs the operators accordingly.

The cable from the previously existing "NIS Detector Comparator" to the alarm annunciators was disconnected. New cable was installed from the P-250 computer and reconnected to the same alarm points. The cable and conduit included as part of this modification was installed in accordance with channelization and separation requirements.

The modification incorporates a more stable determination of core quadrant power. This results in a more reliable calculation of radial flux tilt, with a corresponding decrease in spurious alarm actuations.

83-03-023 EL - Manual Control Capability Associated with Appendix R

This modification was performed in order to restore the capability for manual (non-electrical) closing of 480 V circuit breakers at the 480 V switchgear location in support of the Appendix R shutdown capability.

This modification provided for closing 480 V breakers on 480 V busses 2A, 3A, 5A and 6A by use of the "close bar" with the breaker in the "connect" position. The breakers modified are all breakers except those from the diesel generator supplies, normal station service supplies and bus-tie breakers.

The original breakers installed in IP-3 were designed to have this capability, however, a feature called the Connected Breaker Manual Close Interlock was incorporated to remove the local manual close capability in the connect position. This feature consisted of an interlock screw which allows no play by the Interlock plate and forced it to rotate as much as the levering device shaft rotates. By removing this interlock screw, it allowed a clearance between two operating mechanisms so that the close bar can be pushed to the close position and close the breaker. Existing manual features for spring charging are used to provide the stored energy (non-electrical) needed for closing the breaker.

This modification ensures that the equipment that is powered from 480 V busses 2A, 3A, 5A and 6A can be energized in the unlikely event of loss of control power.

83-03-035 EL - Installation of Tray Covers and Tray Extenders on Particular Overfilled Cable Trays Located in the Cable Spreading Room

The purpose of this modification was to increase the cross-sectional area of overfilled cable trays in order to decrease the fill ratio below 60% while the plant was in the cold shutdown condition for an outage. The additional cables were installed under Mod 82-03-049 COMP (new computer installation) between the existing plant computer and the new CFMS (Critical Function Monitoring System) multiplexer room. The existing cable trays 10L/DD, 78L/JD/DD, 79L/JD/DD, 76L/JB/DB, 80L/JD/DD, 81L/JD/DD and 83L/DD/JD in the cable spreading room had fill ratios above 60%. A fill ratio above 60% is not in accordance with plant design.

In order to decrease the fill ratio below 60%, vertical extenders were installed onto the side rails of the trays and then horizontal covers were attached to the extenders prior to heat up.

The most overfilled cable tray had a fill of 78%. By adding extenders to this tray, the fill was effectively reduced below 60% since the cross-sectional area of the trays under consideration was increased. The covers and the extenders were mounted on the existing trays such that they will bound the cables within the tray cross-sectional area.

83-03-036 STR - Seismic Upgrade of Rack 19

The purpose of this modification procedure was to upgrade instrumentation rack 19 to meet plant seismic design criteria. Rack 19 was seismically upgraded with the addition of hilti kwik bolts and angle iron to attain the stiffening effect needed. This rack has been seismically analyzed for the new environmentally qualified transmitters and found to be acceptable.

83-03-041 - Evaluation of Various Control and Power Cable Used in the Radwaste Facility

The purpose of this evaluation was to demonstrate that various control and power cables, installed during construction of the radwaste facility, do not degrade the plant nor do they reduce the margin of safety. The cables installed were not tested in accordance with FSAR Section 8.2.2. However, these non-safety related cables do comply with IEEE 383-1974 Section 2.5.

The non-fire propagation property of these cables has been demonstrated by passing the IEEE 383-1974 section 2.5 flame test. This test demonstrated that the cable does not propagate fire even if its outer covering and insulation have been destroyed in the area of flame impingement. This test also demonstrated that the cables self-extinguish when the flame is removed. The IEEE 383 testing is widely used in the nuclear industry and forms the core of U.S. NRC Regulatory Guide 1.131.

83-03-065 MULT - Control and Auxiliary Feed Water Pump Buildings, Systems Interaction Modifications

As a result of the Systems Interaction Study, the purpose of this modification was to supplement the supports of the lighting fixtures and space heaters in the Control Building in order to prevent them from falling on safety-related equipment during a seismic event. In addition, one light in the auxiliary feed pump building was removed.

The new supports ensure that if a seismic event occurs, non-safety related equipment will not fall and damage safety-related components in the vicinity.

83-03-068 EL - Power Plant Automatic Oscillographic Fault Recording System

Installation of the Oscillograph facilitated the gathering of critical data which is used in the electrical distribution system fault analysis. Protective relaying and equipment performance benefited from this modification.

The modification covered the installation of one two-bay Oscillograph unit and associated wiring accessories, potential transformers and accessories in 6.9 KV Switchgear No. 32, compartments No. 6 and 16. It also involved current and potential instrumentation circuit additions to panels, an indicating light and 138 KV voltmeter on Control Panel "SHF".

The portion of this modification that involved cable routing in trays was defined as safety related and was therefore installed in accordance with the appropriate procedures for maintaining the site Electrical Separation Criteria. The addition of the oscillograph was consistent with existing generator monitoring functions and therefore does not increase the probability of a failure causing a unit trip or prevent a present protective device from performing its function.

83-03-077 - Main Generator Radio Frequency (RF) Monitor

The RF monitor is used to measure the RF emission from the arcs that may develop because of generator stator insulation failure. Early detection of a developing abnormality within the generator was the purpose of this modification.

In conjunction with the measurement and recording of RF level, it is necessary to record the megawatt output of the main generator. The megawatt and RF levels are correlated to each other as well as the time rate of change of these levels.

The portion of this modification that involved cable routing in trays was defined as safety related and was, therefore, installed in accordance with the appropriate procedures for maintaining the site electrical separation criteria. All other portions of the modification were non-safety related. The installation of the RF monitor was consistent with existing generator fault detection and therefore did not increase the probability of a failure causing a unit trip or prevent a protective device from performing its function.

83-03-086-EL - Additional Generator Ground Fault Relay

Installation of an additional generator stator ground fault relay enhanced system reliability and availability with improved protection performance. This relay provided total (100%) protection for generator stator ground faults and backup protection to the existing ground relay 59N, Westinghouse type CV-8 relay. In addition, the relay monitors the integrity of the neutral grounding system and its associated wiring.

The portion of this modification that involved cable routing in trays was defined as safety related and was installed in accordance with the appropriate procedures for maintaining the site Electrical Separation Criteria.

83-03-087 EL - Wiring Correction for Pressurizer Relief Tank High Level Alarm

This modification was for the rerouting of four cables installed under a previous plant design change for the Pressurizer Relief Tank High Level Alarms. During a routine review of electrical cable routing, it was discovered that these four cables were routed improperly.

For this modification, work involving cable routing in the cable trays was considered as safety related. The high level and high-high level pressurizer relief tank signals are not safety related indications and therefore all work outside the cable trays was non-safety related. The corrections of the cable routing placed the cables in compliance with the required plant electrical separation requirements.

83-03-094 CM - Installation of a Redundant Limit Switch On the Main and Auxiliary Hoists of the Polar Crane

The purpose of this modification was to install a redundant limit switch on the main and auxiliary hoists of the polar crane to comply with the requirements of NUREG-0612.

Screw-type limit switches were wired in place of the previous weight-operated upper limit switches on the main and auxiliary hoists of the polar crane. The old weight-operated limit switches were then reconnected and served as the final limit stops for each hoist.

In the event of a malfunction of the normal upper limit switch (screw-type), the redundant limit switch (weight-type), wired into the line circuit, will trip to interrupt the magnetic line disconnect. Re-establishing a faulted circuit requires manual operation of the trolley mounted switch to allow restart, then reversing the hoist to reset the circuit.

84-03-003 MULT - Installation of Sampling Points for Category I Systems

The purpose of this modification was to provide sampling points for various safety related systems. Samples obtained from these lines are used for detailed chemical analyses. The maximum size of tubing installed was 3/4". Sample lines were added to the following systems: instrument air, auxiliary coolant, primary make up, sampling, condensate feedwater, service water, chemical volume and control, diesel generators fuel oil and diesel generators cooling.

This modification was designed in accordance with the applicable seismic criteria where applicable. Lines were to be field run in accordance with the ALARA concept.

All materials (valves, fittings, and tubing) were purchased to the appropriate plant specifications in compliance with the reference documents rated for appropriate system pressures and temperatures. This modification changed various flow diagrams in the F.S.A.R. and was deemed acceptable.

84-03-005 BA - Self Contained Breathing Apparatus (S.C.B.A.) Supply Stations for Post-Accident Sampling

The purpose of this modification was to address the installation of local air supply cylinders for the Self Contained Breathing Apparatus (SCBA) required for post-accident sampling and the air supply cylinder storage cages for post-accident sampling. Four supply stations were installed in the PAB. These stations were located on the 55' elevation near the chemistry sample room, the 55' elevation post-accident analysis area, the 41' elevation in the area used for containment atmosphere post-accident sample point and the plant vent post accident sample points. These stations consisted of three air tanks per station restrained in a cage and the air cylinders are clearly marked.

The general locations of the air cylinder supply racks were determined in the field to preclude any possible system interaction with equipment/components in the vicinity. These installations were in accordance with the ALARA concept.

RMS 84-03-006 R.M.S. - Atmospheric Radiation Monitor RE-101 Air Pump

The air pump for atmospheric radiation monitor RE-101 has been replaced. Both the discarded Gast 3040-115 air pump and the replacement 6SF-GW air pump are oil-less, positive displacement, carbon vane pumps designed for high cleanliness service. The Conde air pump provides increased air flow capacity and is a standard item for this application. The replacement pump fully provided for system air flow requirements while also providing for improvements in atmospheric radiation monitor RE-101 reliability.

84-03-016 EL - Emergency Lighting for Appendix "R"

Appendix "R", paragraph III.J to 10CFR50 requires emergency lighting to be "provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto."

The additional emergency lighting units are available when there is a loss of power to any individual lighting unit or units that illumininates equipment or space that requires emergency illumination.

Each emergency lighting unit is comprised of a minimum 8-hour rated battery operated lighting unit with a charger for operation on 120VAC. Additionally each unit consists of 2 12-watt halogen lamps.

84-03-028-PSS - Replace Limit Switches and Solenoid Valves on Sampling Valves

The purpose of this modification was to replace existing limit switches and solenoid valves on sample isolation valves 951, 953, 955A and 955B located inside containment, with both environmentally and seismically qualified devices.

The previous ASCO type solenoid valves and NAMCO type limit switches were replaced by qualified and sealed ASCO AND NAMCO solenoid valves and limit switches. There is one (1) solenoid valve and two (2) limit switch assemblies for controlling each sample valve.

The new solenoid valves and limit switches are functionally the same as the previous solenoid valves and limit switches. The main difference was that the existing ASCO and NAMCO devices were not qualified while the new devices are qualified to IEEE-STD-323-1974 and sealed for sustained operation in an accident environment that envelopes the IP-3 environmental profile. The new solenoid valves and limit switches were also seismically qualified to IEEE-STD-344-1975 and were seismically mounted in the same location as the existing devices so that the original design was not degraded.

84-03-029 RHR - Replace RHR Header Flow Transmitters FT-638 & FT-640

The purpose of this modification was to replace existing RHR transmitters inside the Containment Building with both environmentally and seismically qualified transmitters. The previous transmitters were Foxboro type E13DH. They were replaced with a qualified Foxboro type N-E-13DH. The transmitters are for RHR Header Flow from RHR Exchangers to RC loops 1, 2, 3 & 4 cold legs.

The new transmitters have the same output scaling and were mounted at the same location as the previous transmitters. The new transmitters are functionally the same. The main difference was that the existing Foxboro type may not have been environmentally qualified while the new Foxboro type transmitters have been qualified to IEEE-STD-323-1974 for sustained operation in an accident environment that envelopes the IP-3 environmental profile. The new transmitters are also seismically qualified to IEEE-STD-344-1975 and were seismically mounted so that the original design was not degraded.

84-03-030-CB - Replace Solenoid Valves on Purge, Exhaust and Relief Valves

The purpose of this modification was to replace existing solenoid valves located inside the Containment Building with both environmentally and seismically qualified solenoid valves. The previous ASCO Model HB8316D45 and NP8320A175E solenoid valves were replaced by qualified and sealed ASCO Model NP8316A74E and NPK8320A184E solenoid valves. There is one (1) solenoid valve controlling each of the associated purge, exhaust and relief valves.

The new solenoid valves are functionally the same as the previous solenoid valves. The main difference was that the new devices are qualified to IEEE-STD-323-1974 and sealed for sustained operation in an accident environment that envelopes the IP-3 environmental profile. The new solenoid valves were also seismically qualified to IEEE-STD-344-1975 and were seismically mounted in the same location as the existing solenoid valves so that the original design was not degraded.

84-03-032 FCU - Replace Solenoid Valves on Fan Cooler Units 31, 32, 33, 34, 35

The purpose of this modification was to replace existing solenoid valves located inside the containment building with both environmentally and seismically qualified solenoid valves.

The existing Skinner, Model V53ADB2150, solenoid valves (Tag Nos. SOV-1293 through 1307) were replaced by qualified and sealed ASCO, Model NPX 8320A182E, solenoid valves. There were three (3) solenoid valves associated with the damper controls on each of the fan cooler units.

The replacement solenoid valves were functionally the same as the previous solenoid valves. The main difference was that the previous Skinner valves were not qualified while the new devices were qualified to IEEE-STD-323-1974 and sealed for sustained operation in an accident environment that envelopes the IP-3 environmental profile. The new solenoid valves were also seismically qualified to IEEE-344-1975 and were seismically mounted in the same location as the existing devices so that the original design was not degraded.

84-03-033 - Sealing Main Steam Flow Transmitters and Terminal Boxes Instrument Rack 4A and 4B. Tag No. FT-419A, 429A, 439A and 449A

This modification involved the environmental sealing of the transmitter housing, the conduit entries at the transmitter and the terminal box for existing main steam flow Rosemount Model 1151DP6B22LMMB transmitters FT-419A, FT-429A, FT-439A and FT-449A, which were located on racks 4A and 4B on the 68' elevation in containment.

The existing Rosemount transmitters for main steam flow were sealed to environmentally qualify them for an accident environment which envelopes the IP-3 accident profile. Silicone sealed Rosemount type D/P transmitters were environmentally qualified to IEEE-STD-323-1974 which also envelopes the IP-3 accident profile. This modification has been seismically evaluated and found to be acceptable.

The sealing technique described in this modification produced an environmentally qualified transmitter.

84-03-034 STR - Discharge Canal Fish Sampling Device

The purpose of this modification was to satisfy the requirements of the IP-3 State Pollutant Discharge Elimination System Permit (SPDES) by installing a fish entrainment and sampling device in the discharge canal downstream of Units 1, 2 and 3.

The sampling device consists of steel members, support cables, fish nets and grappling hooks. The design included provisions for sampling with two nets which can vertically traverse the cross section of the canal. Provisions for future operation with six nets was also provided.

This modificaiton does not adversely affect the normal operation of the plant, nor is it located near any safety related systems or structures. The device does not interfere with the normal discharge flow in the canal since it is an open frame with nets. Furthermore, the device is only used on an intermittent basis as required by the SPDES permit.

84-03-036-MULT - Environmental Qualification Replacement of Transmitters FT 946 A through D (RHR Recirc. Flow), PT 402 and 403 (RCS Press) FT-924A, 925, 926, 926A, 927, 980 and 982 (High Head SI Flow) and FT 945 A and B (Recirc. Spray)

Existing pressure and flow transmitters were replaced with qualified and seismically upgraded transmitters for RHR, RCS, High Head SI flow and Recirc Spray systems under the Equipment Qualification Program. These transmitters were located individually inside the containment with necessary supports.

During the 1984 mid-cycle, Steam Generator Inspection Outage, the original Foxboro Transmitters were replaced with new Foxboro Transmitters Model Numbers N-E13 DH-HIM1-BE, N-E13DH-HIH, N-E11GH-HIM-BE, N-E11DH-HIH1-BE, N-E13DH-HIH1-BE Style A. These transmitters are qualified to IEEE 323-1971 and IEEE 344-1971 and are equal to or better than the original transmitters. The amplifiers on the new transmitters will be replaced in the near future which will upgrade the qualification of these transmitters to the IEEE 323-1974 and IEEE 344-1975 standards.

This modification has been seismically evaluated and found to be acceptable.

84-03-038 H_2 - Environmental Qualification Replacement of Hydrogen Recombiner Transmitters 31FS-2A and 32FS-2A

Existing flow transmitters were replaced with qualified and seismically upgraded transmitters for the Hydrogen Recombiner System under the Equipment Qualification Program. These transmitters were located individually inside containment with necessary supports.

During the 1984 mid-cycle, Steam Generator Inspection Outage, the original Foxboro Transmitters were replaced with new Foxboro Transmitters Model Numbers N-E13 DH-HIM1-BE, N-E13DH-HIH, N-E11GH-HIM-BE, N-E11DH-HIH1-BE, N-E13DH-HIH1-BE Style A. These transmitters are qualified to IEEE 323-1971 and IEEE 344-1971 and are equal to or better than the original transmitters. The amplifiers on the new transmitters will be replaced in the near future which will upgrade the qualification of these transmitters to the IEEE 323-1974 and IEEE 344-1975 standards.

The seismic study for each individual transmitter was performed and each transmitter was acceptable.

84-03-040 SG - Environmental Qualification Replacement of Level Transmitters LT 417 A through D, LT-427 A through D, LT-437 A through D and LT-447 A through D (Steam Generator Level; located on Rack 21).

Existing level transmitters were replaced with qualified and seismically upgraded transmitters for the Steam Generators under the Equipment Qualification Program. These qualified transmitters were mounted on Rack No. 21 and located at 68' elevation inside the containment building.

During the 1984 mid-cycle, Steam Generator Inspection Outage, the original Foxboro Transmitters were replaced with new Foxboro Transmitters Model Numbers N-E13 DH-HIM1-BE, N-E13DH-HIH, N-E11GH-HIM-BE, N-E11DH-HIH1-BE, N-E13DH-HIH1-BE Style A. These transmitters are qualified to IEEE 323-1971 and IEEE 344-1971 and are equal to or better than the original transmitters. The amplifiers on the new transmitters will be replaced in the near future which will upgrade the qualification of these transmitters to the IEEE 323-1974 and IEEE 344-1975 standards.

This modification has been seismically evaluated and found to be acceptable.

84-03-052 SWN - Installation of Service Water Sampling and Calibration Taps For R-16 and R-23

This modification provided calibration and sample taps for radiation monitors R-16 and R-23. An isolation valve and a tap off line #12 was added as well as a tap on line #11. These valves and taps facilitated isolation, sampling, calibration and purge functions for the radiation monitors. When lines #11 and #12 are isolated on either side of the in-line radiation monitors R-16 and R-23, using temporary tubing and a portable sample pump, the radiation monitors are calibrated then purged. These taps can also be used for local sampling in case of monitor failure.

The additional valving and tubing has been seismically evaluated and found acceptable. All material used in this modification complied as a minimum with the original plant's specifications for the service water system.

84-03-067 MS - Redundant SG Pressure Gauges and Nitrogen Supply

This modification provided for Auxiliary Boiler Feed (ABF) Pump Room backup of Steam Generator (SG) pressure indication and nitrogen supply at the Atmospheric Steam Dump Valve stations for the postulated ABF Pump Room fire, in compliance with the requirements of 10 CFR 50 Appendix R, Section III.G.

The ABF Pump Room was designated as Fire Area AFW-6 in the Appendix R study. Safe shutdown equipment and cables in this area are integrated into the Appendix R performance requirements of reactor heat removal and process monitoring functions. Shutdown capability following reactor trip with assumed loss of off-site power must be therefore demonstrated. SG pressure indication presently is on auxiliary shutdown panel PT-2 located in the ABF Pump Room. The SG pressure indication along with the bottled nitrogen supply, both of which are located in the ABF Pump Room, are duplicated at the Atmospheric Steam Dump Valve station for the postulated fire in the AFW-6 area.

The sensing lines of the pressure gauges of the Atmospheric Steam Dump Valve stations were tapped off the corresponding tubing to the PT-2 indication to assure compatible reading.

Nitrogen supply bottles were connected to provide backup for the Atmospheric Steam Dump Valves only.

84-03-084 EL - Administration and RAMS Building Radiation Monitor Alarm In the Control Room

This modification installed a category alarm in the control room for the Administration and RAMS Building Radiation Monitor panel CP-4.

An alarm on panel (CP-5) on the 53-foot turbine building annunciated for any alarm on the Administration and RAMS Building Radiation Monitor (CP-4). The alarm in CP-5 was removed and a cable installed between CP-5 and the control room. A spare control room alarm in the SM panel was used to alert the control room of an alarm in CP-4.

The installation of a CP-4 category alarm in the control room aids in the monitoring of potential plant radiological releases.

RMS 84-03-085 CVCS - Drain Valves for #32 and #31 RCP Seal Injection Filter

A stainless steel Rockwell-Edwards globe valve leaked and did not provide proper isolation. The replacement stainless steel Conval globe valve has proven to be reliable and easier to maintain.

The pressure/temperature rating of the replacement Conval valve exceeds that of the Rockwell-Edwards valve and ratings of the replacement valve also exceed those of the line. The weight of the replacement valve is less than that of the existing valve and therefore is conservative with respect to previous static seismic analysis.