

# BALTIMORE GAS AND ELECTRIC COMPANY

GAS AND ELECTRIC BUILDING  
BALTIMORE, MARYLAND 21203

ARTHUR E. LUNDVALL, JR.  
VICE PRESIDENT  
SUPPLY

July 12, 1979

Director  
Region I, U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
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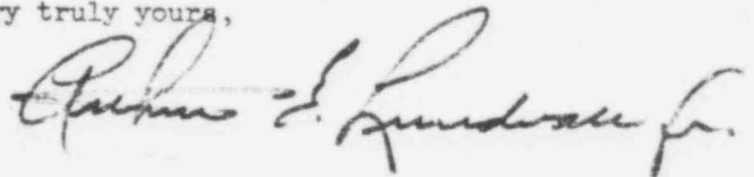
Subject: Calvert Cliffs Nuclear Power Plant  
Units Nos. 1 & 2, Docket Nos. 50-317 & 50-318  
Report of Changes, Tests and Experiments

Gentlemen:

As required by 10 CFR Part 50 Paragraph 50.59, attached is a report of all changes, tests and experiments made on Calvert Cliffs Units 1 and/or 2 under the provisions of that Part and covering the period from our last such report through December 31, 1978.

Items in the attached are referred to by "Facility Change Request (FCR)" number.

Very truly yours,



cc: Director of Inspection and Enforcement (39 copies)  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555  
J. A. Biddison, Esquire  
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Changes, Tests and Experiments Made In Accordance With  
10 CFR 50.59 for Calvert Cliffs Units 1 and/or 2

- 74-10 The auxiliary switch linkage and rollers on the 4.16 kV circuit breakers were modified as directed by General Electric to correct a binding problem. The safety analysis concluded that this modification did not constitute an unreviewed safety question because the change was made to make the 4 kV breakers function as originally intended.
- 74-21 This FCR added a local pressure indicator and an existing tap on the waste gas system. This analysis concluded that this was not an unreviewed safety question, because the piping that was involved was not safety related.
- 74-27 This FCR deleted a valve in the diesel air starting system. A safety analysis concluded that this was not an unreviewed safety question, because this valve, which only provides a method of a local starting of the diesel generator, is not relied upon in any of the safety analyses performed in the FSAR.
- 74-42 This FCR changed the control band over which the temperature of the concentrated boric acid storage tanks is maintained. This was done to prevent spurious alarms. Since the mid point of the new range was unchanged, since the control band was made smaller, it was concluded that this change did not constitute an unreviewed safety question.
- 74-44 This FCR raised the low-level set point for the degasifier. The safety analysis concluded that since the set point was not safety-related the FCR did not constitute an unreviewed safety question.
- 74-53 Originally-installed cable trays and instrument tubing adjacent to the reactor head laydown area in the containment interfered with the laydown of the reactor vessel head and the cavity seal ring. This FCR relieved this interference problem. The only portion of the FCR that was safety-related was the relocation of the tubing. The safety analysis concluded that since the tubing was relocated and reinstalled to criteria consistent with the original installation, that this change did not constitute an unreviewed safety question.
- 74-56 This FCR added moisture traps upstream and downstream of the condenser vacuum pump discharge radiation monitor. The safety analysis for the FCR concluded that it was not an unreviewed safety question, because the condenser vacuum pump discharge radiation monitor and the associated piping are not safety related.

- 74-71 As originally installed, the reactor coolant pump vapor seal leak-off line was connected to the reactor coolant drain tank. Valve leakage into this tank caused a steam pressure to accumulate in the tank, and as a result, steam was being discharged to the containment atmosphere by backflow through the vapor seal leak-off lines. This FCR was to temporarily disconnect the leak-off lines from the drain tank and run them to the containment sump. As such, this safety analysis concluded that this FCR was not an unreviewed safety question.
- 74-73 Added a canopy seal to valves 1-SI-215, 225, 235, 245 in the safety injection system to eliminate leakage through the valve cover. The safety analysis concluded that no pressure retaining boundary was compromised, and no change in valve operability resulted, and that, therefore, no unreviewed safety question was involved.
- 74-82 Revised drawings of main steam instrument taps to reflect as-built and corrected a previous drawing error. This did not constitute an unreviewed safety question since it was a drawing change only to reflect as-built conditions. Non-safety related, but described in the FSAR.
- 74-83 The purification filters are equipped with a lifting eye, used in cartridge removal. The existing eye was damaged. The FCR was written to modify the lifting eye with one of a stronger design. The safety analysis concluded that this was not an unreviewed safety question, as the pressure boundary was not violated. In addition, a pressure test was to be performed to ensure that the boundary was intact.
- 74-84 Modifications to solid waste system: Evaporator bottom fill line to cement mixer, resin discharge piping from meter, add piping to receive resin decant water in order to provide interim means of handling solid radioactive waste until the permanent system can be redesigned. This did not constitute an unreviewed safety question since the lines are non-safety related, although they are described in the FSAR.
- 74-95 Revise drawings of main steam turbine bypass valve, to show added instrument taps. This did not constitute an unreviewed safety question since the taps were normally cupped and on non-instrument lines. The lines are non-safety related but are described in the FSAR.
- 74-96 Modified set points for the Radiation Monitoring System alarms. Safety Analysis concluded there was no unreviewed safety question because the change was to the setpoint log to make it agree with the FSAR and Technical Specifications; changes were to lower, more conservative set points.

- 74-101 Originally installed piping for the reactor coolant pump seal vent and the reactor coolant pump cavity drain was terminated immediately following a root valve. This FCR extended the piping to the containment sump. The safety analysis concluded that this change did not constitute an unreviewed safety question, as the piping design was consistent with original design criteria for similar piping.
- 74-110 Provided additional valves on the auxiliary steam header between the turbine building supply isolation valves and the waste evaporators to eliminate waterhammer in this piping. The safety analysis concluded that no safety related system or equipment was affected by this change.
- 74-119 Changed set point of the containment sump level switch to agree with its redundant level switch. This corrects a drawing error. The safety analysis concluded there was no unreviewed safety question because this new lower set point provides the intended redundancy.
- 74-123 Relocated instrument sensing lines on the water box vacuum tank. Safety analysis concluded no unreviewed safety question because instruments involved and their sensing lines do not interface with any safety function.
- 74-127 Changed scale on low pressure safety injection (LPSI) flow indicator to agree with actual flow. The safety analysis concluded there was no unreviewed safety question because no actual change was made to the LPSI flow or to any other system.
- 74-130 Installed mechanical seals on condensate booster pumps Nos. 11, 12 and 13 and provided service water cooling to their respective heat exchangers to replace packing glands which have resulted in excessive leakage. The safety analysis concluded that since service water was not required when the pumps are cut off, that service water requirements were not increased during accident conditions and no increase in the consequences or probability of an accident would result.
- 74-136 Added protective covers over the  $\Delta T$  Power Calculator and Tcold Calculator potentiometers. The safety analysis concluded there was no unreviewed safety question because no safety functions were being modified. The change prevented accidental adjustment of these Reactor Protective System parameters.
- 74-137 Removed 1/2 inch of thread from one 2-inch diameter socket cap screw on the reactor head lifting rig because of damage to the threads. It was determined that this change did not constitute an unreviewed safety question because more than sufficient thread engagement remained following the change to allow the screw to perform its safety function.

- 74-142 When the evaporators are shutdown, nitrogen is used as a blanketing gas. Upon startup the nitrogen must be pumped from the evaporators. As originally installed, the nitrogen was pumped to the waste gas decay tanks. This nitrogen is of a relatively large volume and low activity compared to what is present in the tanks. As such, it was desirable to put a bypass around the decay tanks to avoid filling the tanks with this gas containing little radioactivity. As part of the safety analysis, detailed dose calculations were performed and it was concluded that the additional activity which would be released as a result of this modification was negligible when compared to the releases as shown in section 11 of the FSAR. It was, therefore, concluded that this change was not an unreviewed safety question.
- 74-1020 During initial plant operations, it was found that the steam generator feedpump recirculating line to the condenser was vibrating. It was desirable to add pressure taps in this line to evaluate the cause of vibration. While not safety-related, this change affected one of the figures shown in the FSAR. The safety analysis concluded that this change was not an unreviewed safety question.
- 74-1026 Added drain traps to sample lines of the main vent, spent fuel pool area, and containment radiation monitoring system monitors. The safety analysis concluded there was no unreviewed safety question because this change in no way affected any safety related equipment nor added any new systems or components.
- 74-1032 Added sodium analyzers to condensate and feedwater sampling system. The safety analysis concluded there was no unreviewed safety question because change does not affect any safety related equipment.
- 75-6 To eliminate inverter problems caused by grounds occurring on the public address system, the common neutrals of the buses were isolated. This does not constitute an unreviewed safety question since this is non-safety related, but is described in the FSAR.
- 75-24 Added ladder and lighting in pipe gallery of west penetration room for operator convenience and safety. There is safety related piping in the area and the ladder was installed as seismic I, and this did not constitute an unreviewed safety question.
- 75-28 The changes made under this FCR are similar to the changes performed under FCR 74-101. The safety analysis for 74-101 was also applicable for this FCR.
- 75-30 In part, this FCR added level controls and a relief valve to the steam generator blowdown tank. The intent of this design change was to increase the blowdown capacity while venting the blowdown tank to the main condenser. It was concluded that this change was not an unreviewed safety question, as the blowdown tank design pressure exceeded the operating pressure with the higher blowdown, and that the failure of the level controls would not affect the overall safety of the plant.

- 75-48 Revised drawing to show relocation of service water collection to provide a more representative sample of service water at a convenient location. This did not constitute an unreviewed safety question, since no safety-related equipment was changed or function altered.
- 75-51 Relocated sensing tap for diesel generator (DG) starting air pressure switches. The safety analysis (Designed under FCR 76-23) concluded there was no unreviewed safety question because original design criteria is being maintained. Change ensures that starting air compressors will not bleed down.
- 75-80 Modified 1-CV-5170 and 1-CV-5171 position indication wiring. Valve position indication was found to be interchanged between these two control valves. The safety analysis concluded that this change corrects a design error. Position indication is as originally intended. Correction provides the operator with proper information to help safely operate the plant. Therefore, the change does not constitute an unreviewed safety question.
- 75-86 FCR was to update drawings to as-built conditions of the 4 kV switchgear of the air conditioning, condenser fans, isolation, dampers and compressors. This change did not constitute an unreviewed safety question, since it was a drawing update only.
- 75-88 Added alarms to condenser vacuum pump seal water system. The safety analysis concluded there was no unreviewed safety question because the system modified is non-safety related, and the equipment added does not affect any safety-related systems or equipment.
- 75-122 Add a  $\frac{1}{2}$ " line to provide demineralized water to the air/water separator on the miscellaneous waste and reactor coolant waste evaporators. This change does not affect any safety-related function or system and the health and safety of the public is not affected by this addition.
- 75-137 Added recorder point identification numbers to FSAR, Fig. 9-11A. This was a drawing change only, and as such, the safety analysis concluded there was no unreviewed safety question.
- 75-138 Initially the relief valve associated with the waste gas discharge filter was installed with the wrong lift pressure. This FCR reduced the set pressure to the correct one. It was concluded that since the design pressure was being reduced to below the design pressure of the waste gas filter, this FCR did not constitute an unreviewed safety question.



- 75-146 Replaced potentiometer R-26 to improve resolution of a linear amplifier card of nuclear instrumentation. Specifications of the new potentiometer are better than the original specifications, and the change was deemed not to be an unreviewed safety question.
- 75-150 This FCR was one of a series of changes that modified the packing for the charging pumps. The purpose of all of these modifications was to extend the packing life. As such, the modifications to the packing had no effect on normal pump operation, and therefore, it was concluded that this was not an unreviewed safety question.
- 75-165 Moved two nuclear instrumentation cables from penetration 1 ZWE 1-3 to penetration 1 ZWE 1-14 because internal wire had opened. The safety analysis concluded that the design basis of the cables had not changed, and therefore, there was no increase in the probability or consequences of an accident and no unreviewed safety question.
- 75-182 Conducted a test with a modified charging pump packing arrangement to increase the life of the packing and the reliability of the pumps. The safety analysis concluded that since the function of the pumps was not changed, the probability of occurrence or the consequences of an accident previously evaluated in the FSAR was not increased, nor had the possibility of an accident different from that described in the FSAR been created.
- 75-185 Replaced present pulsation dampeners for the flow and pressure transmitters on the charging pumps' discharge line with more efficient ones. The safety analysis concluded that this modification did not constitute an unreviewed safety question, and will improve the performance of the instruments rather than degrade them.
- 75-188 Changed operating configuration of Wide Range Nuclear Instrumentation Recorders channel selector switches to a "break-before-make" operation. The safety analysis concluded there was no unreviewed safety question because this is a change to improve component operation and is not representative of an addition or deletion of systems, components, or capabilities.
- 75-199 Install steam heating coils in the ultrasonic cleaner and rinse tank to facilitate high temperature pre-treatment of components to be decontaminated. No safety-related equipment or function was altered by this modification.
- 75-200 Deleted control valves CV-5150 and CV-5153 (salt water to and from service water heat exchanger) from logic table LD-58A. The safety analysis concluded there was no unreviewed safety question because this modified design has the proper salt water valves receiving the appropriate Engineered Safety Features Actuation System signals as described in the FSAR and other governing design documents.

- 75-205 Relocated PT-4056 to downstream of MSIV to permit continued pressure analog information to be transmitted to TBV/SD control circuitry with one MSIV shut. This is an improved capability that enhances operation and thus, did not constitute an unreviewed safety question.
- 75-206 Added piping to the outlet of relief valve 2-RV-468 on shutdown cooling system such that the outlet of 2-RV-468 is piped to the floor drain system, thereby preventing contamination of equipment in other areas of the auxiliary building. The safety analysis concluded that no safety-related equipment or function was altered by this addition.
- 75-211 Modified the trim of letdown valves to provide stable control at low flows. The safety analysis concluded there was no unreviewed safety question because the safety-related function of the valve (to serve as pressure boundary but not isolation boundary) was not affected by this change, since pressure retaining components were not changed, nor were any new systems nor components added.
- 75-216 Installed manual drain valves in the four upper blank flanges associated with the spent fuel pool cooling spool pieces to permit draining of the spent fuel cooling lines above the flanges prior to removing them. The safety analysis concluded that the integrity of the spent fuel pool cooling lines was not reduced by this modification and, therefore, no unreviewed safety question was involved.
- 75-224 Installed piping and a valve to allow each charging pump to be vented to prevent pumps from being gas bound after packing change. The safety analysis concluded that this modification does not alter the function of the pump or the system and the modification would not affect the capability of the pump to perform its safety-related function. This change does not increase the probability or consequences of an accident, and does not represent an unreviewed safety question.
- 75-230 Installed filters and relocated sample point of the miscellaneous waste system to avoid clogging of the lines. This change did not constitute an unreviewed safety question since Non-safety related filters were added to a non-safety related system. However, the system is described in the PSAR.
- 75-233 Revised specification M-209 to increase air quantity handled by Access Control Area Exhaust Filter No. 12 to reflect the as-built conditions. Since no safety related function was altered, this change does not constitute an unreviewed safety question.
- 75-237 Added cable stress relief devices to the NI (Nuclear Instrumentation) cables. The safety analysis concluded there was no unreviewed safety question because no changes were made to the Nuclear Instrumentation signals nor their signal path, and no structural changes were made to the Reactor Protective System equipment.



- 75-244 Mounted accoustical booths on the side panels of 1C43 and 2C43 for page and C&P Telephone to isolate phone and page communications from surrounding noises during auxiliary shutdown. The safety analysis concluded that the modification did not constitute an unreviewed safety question. The change only moves the phone closer to the area of attention with the addition of sound proofing.
- 75-266 Electrical drawings were updated to show the existing shielding arrangement, indicating lights and power supplies to the wattmeter and temperature readout of the hydrogen recombiners. The safety analysis concluded that this change did not increase the probability of occurrence or the consequences of an accident or malfunction previously evaluated in the FSAR, and did not constitute an unreviewed safety question.
- 75-1002 FCR 74-1020 was to permit pressure taps to be added to the steam generator feedpump recirculation line to monitor vibration of this line. This FCR was an attempt to provide temporary modifications to the line to reduce the effects of vibration. There were many vents and drains installed with double valve isolation. The heavy mass associated with this combination of valves tended to accentuate the problem. This FCR removed a double valve and left a single valve installed. Since the single valve was adequate isolation, and since only minor piping changes in non-safety related areas were involved, it was concluded that this FCR did not constitute an unreviewed safety question.
- 75-1012 This FCR installed shielding material behind the reactor cavity access door. This shielding was necessary to reduce the overall neutron radiation in containment. Since this shielding was behind the existing access door, the door protected the shielding material from the pressure wave associated with the postulated loss of coolant accident. It was, therefore, concluded that this FCR was not an unreviewed safety question.
- 75-1018 Revised FSAR, Fig. 9-6, to reflect proper instrument tag numbers. The safety analysis concluded there was no unreviewed safety question because this was a document change only; no physical change was made to the plant.
- 75-1022 Changed the type of pressurizer level transmitter root valves. The safety analysis concluded there was no unreviewed safety question because replacement valves meet the same design criteria as original valves, and as such are capable of performing the required safety related function.
- 75-1023 Changed the return line check valves and common tie line manual isolation valve on the H<sub>2</sub> and O<sub>2</sub> analyzing system. The safety analysis concluded there was no unreviewed safety question because replacement valves met original design criteria and as such, are capable of performing their safety related function.

- 75-1025 This FCR modified the feedwater pipe encapsulation by the addition of a drain. This drain had been installed in the field but was not shown on the drawing. The safety analysis concluded that since the description of the encapsulation as stated in the FSAR and original design criteria were unchanged, this change did not constitute an unreviewed safety question.
- 75-1026 Corrected drafting error on P&ID M-78 in the FSAR. This did not constitute an unreviewed safety question since the change was a drawing change to reflect as-built only.
- 75-1032 Provided instrument installation detail for temperature well on reactor coolant drain tank. The safety analysis concluded there was no unreviewed safety question because this was a document change only. The temperature well was installed and inspected per appropriate pipe class.
- 75-1035 Updated the Piping Class Summary (M-601) and Piping Analysis (M-601B) to remove conflicts and bring these documents into agreement. Systems and components whose design parameters had increased were analyzed and it was verified that they were suitable for the new design values; appropriate notes were added to M-601 to document the analysis and results. The safety analysis concluded that this change did not constitute an unreviewed safety question.
- 75-1036 Revised specification 6750-M-51 to correct revision not properly noted originally. No change was made at the facility, and thus there was no unreviewed safety question.
- 75-1044 Specification for containment coolers was revised. The revision was for clarification and was of an editorial nature. This had no effect on the facility and thus did not constitute an unreviewed safety question.
- 75-1049 Relocated discharge from relief valve 345 from steam generator blowdown tank to the reactor coolant waste receiver tank. Since the discharge line is non-safety related, but is described in the FSAR, the change was determined not to be an unreviewed safety question.
- 75-1051 This FCR added valve position indication to the P&ID associated with the salt water system. This installation had been installed but was not shown on the drawing, it was concluded that this change did not constitute an unreviewed safety question.
- 75-1056 Performed a reactor start-up after several days of shutdown without the use of the start-up proportional counters. These start-up detectors had all failed and were not available for use.

The procedure used was essentially the same as that used for the initial approach to criticality except that the proportional counters were not available for indication of very low power levels.

At power levels producing less than 0.2 counts per second on the fission chambers the following procedure was followed:

1. The necessary cold shut-down boron concentration was determined. This concentration was based on the cold shut-down temperature, no Xenon build-up, and all rods out. An additional margin of 1% to 1 1/2% of this cold shut-down concentration was then added.
2. Boron concentration dilution proceeded at a rate of one-half the rate of the dilution rate for the initial approach to criticality (0.5 ppm/minute versus 1.0 ppm/minute). Dilution began after all rods were out.

Above a fission chamber count rate of 0.2 counts per second, the same procedure as used for the initial approach to criticality was used.

The safety analysis concluded that there was no unreviewed safety question, because:

- I. The boron concentration prior to withdrawing any control rods is deemed to be safe because this concentration was determined assuming:
  - a. cold shut-down temperatures and coolant is actually at hot shut-down temperature;
  - b. no Xenon build-up and there will be some build-up; and,
  - c. all rods out and the rods will actually be in.

These three actual conditions used above will all add negative reactivity thus making the plant even more safe than with just the start-up boron concentration.

The possibility of a boron dilution incident is not increased because the dilution rate at count rates below the range of the fission chambers will proceed at one-half the dilution rate proven safe during the initial approach to criticality.

At these low counting levels the operators will still have the boronometer and make-up flow alarms available to alert them of any problems. The analyses in FSAR section 14.3.3.2 and 14.3.3.3 still apply, and the parameters of these analyses are not degraded by not having these proportional counters; and,

- II. The FSAR does not take credit for the presence of these proportional counters in its evaluation of the safety of the plant.

To protect against a dilution accident the operator still has available the boronometer and the make-up flow alarms to warn of an excessive dilution rate.

- 75-1064 Replaced existing selenium rectifiers in each battery charger as surge suppressors with metal oxide varistors (mov) in order to increase reliability and personnel safety. The safety analysis concluded that the modification did not constitute an unreviewed safety question. The change to mov's will only provide a better voltage surge protection to the SCR's of each battery charger.
- 75-1067 This FCR changed the fire protection P&ID to reflect the as-built configuration of the plant. There was no significant affect on the system design or function, and as such, the FCR did not constitute an unreviewed safety question.
- 75-1071 Provided a pressure indicator to the pressurizer system. The safety analysis concluded there was no unreviewed safety question because the change did not affect the Reactor Protective System nor Engineered Safety Features Actuation System and the pressure indicator was installed per original design criteria for this piping class.
- 75-1072 This FCR revised the P&ID for the reactor cavity cooling system, to reflect the as-built conditions. It was concluded that this FCR did not constitute an unreviewed safety question, as the design intent of the system was not altered, nor was the change of a safety-related nature.
- 75-1073 This FCR revised the P&ID for the fuel system, to reflect the actual as-built configuration. It was concluded that this FCR did not constitute an unreviewed safety question because the safety-related portion of the system was not affected by the change.
- 75-1074 This FCR corrected the P&ID for the diesel generator cooling water system to reflect the as-built conditions. It was concluded that this FCR did not constitute an unreviewed safety question because there were no changes to any equipment as presently installed and described in the FSAR, and furthermore, the function of the system and equipment was unchanged.
- 75-1080 This FCR revised the fuel pool cooling system P&ID in accordance with the as-built configuration. It was concluded that this FCR did not constitute an unreviewed safety question because there was no change to safety-related equipment, and furthermore, the function and the design intent was not changed.
- 75-1082 This FCR revised the P&ID for the Chemical and Volume control systems to reflect the as-built conditions. It was concluded that this FCR did not constitute an unreviewed safety-related question because no major equipment nor system function was altered.

- 75-1092 Enlarged orifices in Unit 1 steam generator surface and bottom blow down lines to allow for 25 gpm flow through each orifice. This is not an unreviewed safety question since the orifices are installed to meet the requirements for high energy ruptures and the increased blowdown flow meets the same requirements.
- 75-1109 This FCR modified the dimensions of one in-core instrument guide tube flange to eliminate interference between the thermal sleeve attached to the reactor vessel head and the guide tube. Since all design requirements including mechanical and material properties remained the same, it was concluded that this FCR did not constitute an unreviewed safety question.
- 75-1113 This FCR corrected a drafting error to the Penetration Room Exhaust P&ID. It was concluded that there were no safety implications to this change, and therefore this change did not constitute an unreviewed safety question.
- 75-1116 The design temperature for EB-14, Steam Generator Blowdown Penetration Piping, was increased from 500°F to 525°F. It was verified that all the components of this system were suitable for the new design conditions. The nameplate "NA" was changed but it is located on a raised bracket so the pipe boundary was not affected. The safety analysis therefore concluded that this change did not constitute an unreviewed safety question.
- 75-1120 Revised the English description of eight Engineered Safety Features Actuation System outputs. The safety analysis concluded there was no unreviewed safety question because this was a document change only, with no change to the plant.
- 75-1122 Revise P&ID M-77, "Reactor Coolant Waste Processing System - Units Nos. 1 and 2" to reflect the as-built condition of the plant. The safety analysis concluded that no safety related system function was affected nor was integrity of any safety related system compromised. This is not an unreviewed safety question.
- 75-1125 Trip settings and heater sizes of motor control centers 104R and 114R were modified. These changes were made to insure that the motor controllers will not trip unnecessarily and that they will trip when required to prevent a fault from spreading. The safety analysis concluded that the modification was a design improvement and did not constitute an unreviewed safety question.
- 75-1127 Revised drawings to indicate that valves on the safety injection tank test connections were globe valves and not gate valves. The safety analysis concluded that the system operation was not affected by this change. The probability or consequences of an accident were not increased, and no unreviewed safety question was involved.
- 75-1128 Revised drawings to change line numbers of piping, remove one plant air station, remove a valve from the plant air system and to correct a drawing reference. The safety analysis concluded that no safety related system or equipment was affected by this revision.



- 75-1129 General revision of instrument index. The safety analysis concluded there was no unreviewed safety question by referring to all the other FCR's and their respective safety analyses which concluded no unreviewed safety question existed by the respective change affecting the instrument index.
- 75-1137 Provided breathable air to various locations inside the containment. This breathable air system will utilize existing plant air system piping and penetrations. The safety analysis concluded that no safety related system or equipment was affected by this modification.
- 75-1138 Revised drawings to show diaphragm valves on the spent fuel pool cooling system as normally closed instead of normally open and to revise piping line numbers on reactor coolant waste piping. The safety analysis concluded that the function of the spent fuel pool system was not adversely affected by this change. The probability or consequences of an accident were not increased by this change.
- 75-1142 Connected additional 4 inch line from bottom of level control bridle line to heater drain line. The present bridle appears to indicate false levels in heater 11c and causes plant trips. Since no safety replated equipment or function was involved, this change did not constitute an unreviewed safety question.
- 75-1147 Revised drawings to show the relocation of O-PI-1995 on the spent fuel pool cooling system and to make a paper change on two isometric drawings. The safety analysis concluded that the relocation of the instrument did not affect the function of the instrument or the system. This is not an unreviewed safety question. The probability or consequences of an accident or malfunction of equipment is not increased.
- 75-1152 Revised drawings to add casing vents, drains and bed plate drains as well as seal linkage lines on service water pumps 11, 12 and 13. The safety analysis concluded that these branch lines did not significantly reduce the service water flow required during accident conditions. This is not an unreviewed safety question. The probability or consequences of an accident is not increased.
- 75-1155 Revised drawings to correct line numbers for two spent fuel pool cooling lines. The safety analysis concluded that the system is not altered by this paper change.
- 75-1160 Revised drawings to change globe valves to gate valves on the auxiliary boiler steam lines. The safety analysis concluded that no safety related systems or equipment were affected. This is not an unreviewed safety question.
- 75-1161 Revised P&ID M-39, Condensate and Feedwater System - Unit No. 1 to reflect the as-built condition of the plant. The safety analysis concluded that the function or integrity of safety related systems or equipment were not affected by this revision. This is not an unreviewed safety question.



- 75-1164 Revised PSAR, Fig. 9-20 and 9-21, to show existing pressure gauges. The safety analysis concluded there was no unreviewed safety question because no physical change to the plant was made. Equipment was installed in accordance with original design criteria.
- 75-1168 Installed motor operators on six air control dampers in the Control Room and Cable Spreading Room smoke removal system. The installation allows operation of selected sets of dampers and the smoke removal fan from a panel immediately outside of the Control Room instead of by chain wheel damper operators in the Elevation 69' Equipment Room. The safety analysis indicates that no change was made in the function of the dampers. Addition of the motor operators was made to reduce response time in activating the smoke removal system. The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the PSAR is not increased.
- 75-1171 Added valve position limit switches to emergency air lock to conform to specifications. The change does not constitute an unreviewed safety question since it only further reduces the possibility of leakage through the air lock.
- 75-1177 Revised drawings to detail a change in nomenclature on the Unit No. 1 compressed air system. The safety analysis concluded that no safety related equipment or system has been changed as a result of this revision.
- 75-1178 Revised drawings to correct the instrument numbers for three instruments on the chemical and volume control system. The safety analysis concluded that no safety related system or equipment was affected by this revision. This is not an unreviewed safety question.
- 75-1179 Revised drawings of plant chilled water and air service to reflect as-built conditions. This is not an unreviewed safety question since no safety-related function or equipment is altered.
- 75-1181 Revise the drawings to include the installation of a back draft damper in the wall between the pipe penetration room and the main steam penetration room to relieve pressure in the main steam penetration room in the event of a line break. The safety analysis concluded that there was no change to safety related equipment or functions. This is not an unreviewed safety question.
- 76-3 Modified welder qualification requirements to be in accordance with applicable section of ASME code. There was no impact on safety or technical specifications.
- 76-4 Relocate the steam generator blowdown throttle valve to a location adjacent to the blowdown tank, and remove existing isolation valves to eliminate erosion in the blowdown piping. The safety analysis concluded that this design is consistent with the original design criteria. The probability of a high energy pipe rupture is not increased. This is not an unreviewed safety question.
- 76-8 This FCR involved the removal of a drain path from the auxiliary boiler fuel oil heaters to the condensate collection tank. There was a remote possibility that an oil leak in the heaters could find its way into the condenser.

No safety related equipment was affected by this change and no new accident conditions were created.

- 76-23 Relocated diesel generator starting air pressure switches from their skid mounting to adjacent wall mounting. The safety analysis concluded there was no unreviewed safety question because neither Reactor Protective System nor Engineered Safety Features Actuation System functioning is affected by the change, and because the relocation is in accordance with the original design criteria for materials and installation.
- 76-29 Added dust covers to the open type relays in the battery chargers in order to eliminate dust that can easily disable the relay circuits. The safety analysis concluded that the modification did not create an unreviewed safety question. The covers will not interfere with the physical or electrical functions.
- 76-33 Changed the lifting pads on the pool seal ring of the refueling pool to a better design since the present pads bent in handling. This change did not constitute an unreviewed safety question because the new lifting pad is stronger than the original.
- 76-44 Addition of new chemical addition piping from the chemistry addition station to the condensate system to allow a more complete control of the secondary system chemistry. No safety related system or function is affected by this modification.
- 76-62 Cut 16 inch diameter circular sections from the temporary shield platform to allow access to ex-core detectors. The structural integrity of the platform was maintained and thus this change did not constitute an unreviewed safety question.
- 76-66 Interlocked Unit 1 service water supply and return valves as a set with Unit 2 service water supply and return valves for #12 diesel generator & cooling systems. The safety analysis concluded that this modification did not constitute an unreviewed safety question and the possibility for a different type of accident other than that previously evaluated does not exist.
- 76-100 Modified the upper guide structure lift rig to accommodate the new expansion compensating ring and shim ring to increase the hold-down force. The safety analysis concluded that the lifting pin is not altered because of this modification and that no change in the function of the component would result. This is not an unreviewed safety question.
- 76-110 Modified the core barrel lift rig lifting pin to allow the pin to rotate in the plate assemblies preventing the shearing of the locking plate cap screws. The safety analysis concluded that the modification does not violate or compromise the design, performance or lifting capacity of the lift rig. The probability or consequences of an accident are not increased.

- 76-116 Changed the coefficient modules on the axial power calculator to enable setting of the axial tilt trip and pre-trip alarm points that account for the actual shape annealing factor of the fuel. The safety analysis concluded that this change did not constitute an unreviewed safety question, since no new functions are being added or deleted and Technical Specification figure 3-4 will remain in effect.
- 76-120 This FCR was to install an injection point to allow the injection of sodium hypochloride into the salt water system to test the effects of the biocide failing of the service water heat exchanger. A safety analysis concluded that since flows through the salt water system and the pressure boundary of the salt water system were both unaffected, this test did not constitute an unreviewed safety question.
- 76-134 Allowed repair of an MSIV bonnet back seat, to return to original configuration. The cause of the back seat distortion was later found, and FCR's 76-1051 and 77-1006 were issued to correct the problem. The safety analysis concluded that this modification did not constitute an unreviewed safety question.
- 76-135 Removed standpipes from steam generator 21 & 22 feedwater rings because the standpipes do not prevent a water hammer and may fail in service. This is not an unreviewed safety question because the design is still in accordance with original design criteria.
- 76-137 Installed permanent storage racks for two nitrogen bottles used for changing pump desurger. This change was not an unreviewed safety question since the racks were siesmically mounted against the changing room wall.
- 76-142 Unions were installed directly above pump casing on the discharge line to the mechanical seal No. 11 and No. 12 spent fuel pool cooling pump in place of welded fittings to allow for removal of pump casing. The safety analysis concluded that this modification did not constitute an unreviewed safety question since the structural integrity of the line was not compromised by the modification.
- 76-157 Revised drawings to add a drain line on the outlet piping from reactor coolant drain tank 21 which will facilitate easier hydrostatic testing of this piping. The safety analysis concluded that this modification does not change the function or integrity of this system. The probability or consequences of an accident are not increased.
- 76-158 Installed accelerometers on CEDM nozzles to obtain data on head and CEDM acceleration during non critical operation. This is not an unreviewed safety question because the addition was found not to affect any evaluated accidents. The possibility of an accident or malfunction not described in the FSAR is not increased because the accelerometers are removed prior to critical operation. Accelerometers that remain would not effect any safety related equipment or function.

- 76-164 Changed the reactor coolant pump controlled bleed-off flow indicator from a local indication (rotometer) to a transmitting type of rotometer with remove flow indication. The safety analysis concluded there was no unreviewed safety question because change did not affect Reactor Protective System nor Engineered Safety Features Actuation System and no new systems were being added. Installation was in accordance with original design criteria.
- 76-170 Instrument index change to correct an erroneous service description of two motor operated valves of the boric acid system. No physical changes to the plant are involved. The safety analysis, therefore, concluded that the change does not constitute an unreviewed safety question since no changes to safety related equipment was involved, and no new systems or operating methods are being added.
- 76-172 Windows were cut out of upper end of corner cavity to make it possible to observe the grapple, the fuel assembly and the CEA when the mast is rotated other than 0°. The safety analysis concluded that this modification did not constitute an unreviewed safety question. Neither the operation nor the structural integrity of the equipment will be affected by the modification.
- 76-196 This change involved a design document clarification of the 120 VAC vital power system. No field modifications were required.
- 76-199 The MSIV coupling actuator ring assembly was redesigned to be more rigid to preclude minor weld cracking. This assembly is external to the valve and not pressure retaining; its function is to actuate MSIV position indicating switches. Safety analysis concluded that this modification did not constitute an unreviewed safety question.
- 76-207 Installed 800 resistors in series with the over-voltage relay coils on the 125 VDC battery chargers in order to adjust the relays to within the trip range as specified by the relay setting sheets. This FCR does not constitute an unreviewed safety question. The addition of the resistors has increased charger operation reliability, since they eliminated the spurious trips caused by the normal charger operation with the original relay circuit. Resistor failure, which may or may not trip the charger, would not de-energize or render inoperable the d.c. bus. The margin of safety as defined on the basis for technical specification 3.8.2.3. is not reduced since each d.c. battery is backed up by a redundant charger, fully capable of recharging a fully discharged battery while at the same time supplying the steady state power requirements of the system.
- 76-211 Rubber lining of Component Cooling Heat Exchanger manway covers was allowed to compensate for excessive corrosion of the epoxy lining. This change did not affect the design function of the heat exchangers. The safety analysis concluded that this modification did not result in an unreviewed safety question.

- 76-220 Change fuse size from 30 amp to 6 amp at panel 1D13 breaker 22, panel 1D17 breaker 22, panel 2D13 breaker 22 and panel 2D17 breaker 22. The safety analysis concluded that this did not constitute an unreviewed safety question. The total electrical load on each of these circuits is on the order of 1-2 amps. It is important for equipment protection to have a fuse on a circuit to be rated slightly higher than the full load current. A 30 amp fuse does not protect satisfactorily.
- 76-1001 Revised drawings to add the following: a) a vent and drain from the miscellaneous waste processing heat exchanger, b) reducers on the lines connecting the reactor coolant ion exchangers to the solid waste system, c) vents on the reactor coolant waste monitor tanks piping, d) a reducer on the drain piping leading to the nos. 11 & 21 ECCS pump room sump, e) a flanged connection adjacent to duplex sump pump no. 11, f) flanges on the discharge piping from boric acid pump no. 12. The safety analysis concluded that the function of the system and equipment was not altered by these modifications. The probability or consequences of an accident were not increased.
- 76-1004 Correct drawings to show penetration 51 as "spare" and penetration 50 as "ILRT Containment Pressurization". The safety analysis concluded that the relabeling of the drawing did not constitute a change to any safety related function or equipment. This is not an unreviewed safety question.
- 76-1005 Install an expansion compensating ring and shim ring to resist axial upward movement of the reactor internals. The safety analysis reviewed the effects of excessive holddown, fuel rod growth and the hydraulic overturning moments. The analysis concluded that this modification would sufficiently hold down the upper guide structure and core support barrel without adversely affecting the internals. This is not an unreviewed safety question.
- 76-1012 Modified the air supply to CV-517, CV-518 and CV-519 (Auxiliary Spray and Charging Lines Containment Isolation Valves) to insure their operability after an accident so as to provide a means of preventing boron precipitation in the reactor vessel after an accident.
- This change added an air accumulator to the valve air supply, added a valve to isolate the non-seismic from the seismic air system in the containment, and provided a means of overriding Containment Isolation Signal (CIS) to containment air supply isolation valve (MOV-2080) in order to allow operation of CV-517, CV-518 and CV-519 after an accident.
- The safety analysis concluded there was no unreviewed safety question because:
- I. The design will not prevent the operation of RPS or ESFAS. The CIS to MOV-2080 Override Handswitch will be key operated and alarmed on override operation. Tech Specs will restrict



operation of this override function to insure containment integrity.

New piping will be Seismic Category I.

Prior to this change the implied operation of CV-517, 518, and 519 during and after a seismically-accompanied accident is for CV-518 and 519 to fail open and for CV-517 to fail closed, because the non-seismic air supply to the valves would be lost. The new seismic air supply and isolating capabilities allows positioning the valves in other than failed position following an accident.

Having CV-518 and 519 positioned closed (rather than failed open) does not prevent the charging pump injection of concentrated boric acid because the check valve bypassing CV-519 is still available to allow this flow. Having CV-517 positioned open (rather than failed closed) during an accident merely means an additional flow path for charging pump injection of concentrated boric acid. The positive displacement charging pumps will maintain a constant flow rate, by the nature of their design.

The new valve (CV-2085) which isolates the seismic from the non-seismic portions of the containment instrument air supply will not, should it fail, cause the loss of any safety functions because all valves required for safety downstream of CV-2085 are designed to assume their safe position on loss of air;

- II. No new systems are being added nor are any existing systems being made to operate differently; and,
- III. The margin of safety as defined on the basis for technical specification 3.6 is not reduced. Justification: The CIS override switch operation will be alarmed in the control room, so the operators will be aware when this containment isolation valve is being held open.

- 76-118 General revision of instrument index. The safety analysis concluded there was no unreviewed safety question by referencing all the other FCR's and their respective safety analyses which concluded no unreviewed safety question existed by the respective change affecting the instrument index.
- 76-1029 Revised drawings to add and delete various drains and vents on the condensate and feedwater line. The safety analysis concluded that no safety related systems or equipment were affected. This is not an unreviewed safety question.
- 76-1030 Revised drawings to a) correct line numbers of piping to and from No. 12 RC Waste Processing Tank, b) relocate instrument o-PDI-2199 and o-SX-6495 downstream of miscellaneous waste ion exchanger no. 11, c) relocate check valves from Unit no. 1 reactor coolant system ion exchangers. The safety analysis concluded that these changes did not affect the integrity or function of the systems involved. This is not an unreviewed safety question.



- 76-1031      Revise P&ID M-74, Safety Injection and Containment Spray System - Unit No. 1, to reflect the as-built condition of the plant. The safety analysis concluded that the integrity of the safety related systems affected by this revision was not compromised. This is not an unreviewed safety question.
- 76-1053      This FCR issues a new set of drawings in a slightly different format with different information. Design information is based on existing P&ID's. This was not an unreviewed safety question because no design or equipment changes were made.
- 76-1054      Add dual set point protection to PORV's for MPT protection. This change is to decrease the chance of RV over-pressurization at low temperatures. This FCR does not constitute an unreviewed safety question because the change involves provisions to prevent inadvertent lifting of the RV's with any higher probability than currently exists.
- 76-1065      This FCR made minor modifications to tube routings for two pressure transmitters in the safety injection system, found to be necessary during system startup due to thermal movements of piping. The change was found not to constitute an unreviewed safety question, since the design was done in accordance with original design requirements.
- 76-1068      This FCR made a modification to a shim at the fixed point of attachment of a snubber on the auxiliary pressurizer spray piping. It was found not to be an unreviewed safety question, since the change merely "fine-tuned" the snubber so that snubber and system would operate as designed.
- 76-1069      Update Unit 2 on drawings to conform with the latest revisions of corresponding P&ID's. This is not an unreviewed safety question because it is only a transfer of information and involves no design work.
- 77-1          Replaced 4 inch HC-16-2004 sch. 10 pipe with sch. 40 4 inch pipe of the same type material because the existing sch 10 pipe leaked at the branch connection weld. This change does not constitute an unreviewed safety question since schedule 40 pipe has additional thickness, compared to schedule 10, to reduce the stress level at the branch location.
- 77-11        Cut damaged threads from the end of one cap screw securing the access cover plate to the drain tank assembly of #12 SG. The failure of the access cover plate screws would not affect any SR function of the SG and the integrity of the cover plate and screws is not a factor in any accidents. Thus, this change does not constitute an unreviewed safety question.
- 77-25        Revise connection diagrams of deisel generators 11, 12, and 21 control circuitry to reflect as-built. This is not an unreviewed safety question since this is a drawing change only of a satisfactorily operating system. Original intent is not affected.

- 77-29      Revise a drawing to renumber valve 1-SI-431 on the containment spray system as 1-SI-471. The safety analysis concluded that no safety related function or equipment had been modified.
- 77-31      Modified the diesel air vent fan circuitry to insure starting of fan on an under voltage condition. The safety analysis concluded that this modification did not constitute an unreviewed safety question. The probability of a malfunction will not increase since this modification improves the reliability of the diesel air vent fan.
- 77-37      This FCR relocated one of the remote snubber reservoirs associated with the piping to the quench tank. As originally installed, this reservoir was below the level of the snubber. It was concluded that the relocation of the snubber reservoir did not constitute an unreviewed safety question, as the tubing was routed and installed in accordance with existing criteria applicable to this type of tubing.
- 77-38      A salt water pump shaft was "cut down" to remove damaged areas, then built up to original dimensions with metal spray. Corrosive/erosive effects of salt water were accelerating wear. The repair did not affect pump operation. Safety analysis concluded that an unreviewed safety question did not exist.
- 77-45      Installed a flow restricting orifice in the service water outlet line from blowdown recovery heat exchangers 12 and 22 to throttle service water flow below design flow of heat exchanger with valves completely open. The safety analysis concluded that the modification will prevent damage to the valves and will otherwise not affect the system. The probability or consequences of an accident are not increased.
- 77-51      Two drain and two vent lines were added on the bypass connecting the shutdown cooling and safety injection systems to remove water and air from these lines. The safety analysis concluded that this modification did not constitute an unreviewed safety question. Neither the design parameters nor the operation of the shutdown cooling or safety injection system were affected.
- 77-68      Threads of the yoke bushing on #22 Auxiliary Feed Pump Steam Supply Throttle Trip Valve experienced normal wear to the extent that trouble was experienced latching the trip valve. Machining of the bushing by .125" maximum was allowed to compensate for the wear and allow trip valve latching until a spare yoke bushing could be sent from the manufacturer. This repair allowed the trip valve to continue to perform as intended and no pressure boundaries were affected. No unreviewed safety questions were found to exist.

- 77-71 Revised drawing FSK-MP-160 Rev 1 to reflect as-built change from 3/4" half coupling to 2" x 3/4" bushing on 8 inch HC-4-2005 pipe. The weld on 3/4" half coupling had a crack and repairing enlarged the opening requiring an oversized plug to be used. This change did not constitute an unreviewed safety question since the piping code allows the use of the replaced coupling on the 8 inch diameter piping.
- 77-72 Added closure assist springs in charcoal filter dousing valves. The safety analysis concluded no unreviewed safety question because change did not affect Reactor Protective System nor Engineered Safety Features Actuation System; does not affect opening of valves; original design criteria still applies; and, no new systems nor components are being added.
- 77-82 Replace valve 1-SI-452 shown on drawing OM-74 which was removed by error. This change did not constitute an unreviewed safety question since this was a drawing change only and the valve was in the system.
- 77-86 Remove up to 0.125 inch from the yoke bushing to allow latching of trip throttle per manufacturer's recommendation. This is not an unreviewed safety question because the modification allows the design intent to be met.
- 77-91 Add instrument tubing to the drain on the suction of one charging pump to measure suction pressure. This was a test and was removed upon completion. This test did not constitute an unreviewed safety question since this was a temporary setup, and operators were available to isolate any portion as necessary to assure the integrity of the system.
- 77-95 Installed permanent rack stowage for two 300 cubic feed nitrogen bottles in each charging pump room. The racks were seismically mounted against the wall. The safety analysis concluded that the seismic mounting of the racks did not constitute an unreviewed safety question.
- 77-118 Update drawings to show existing thermocouple wells on hot reheat piping. This was a drawing change and did not affect any safety related systems and thus was not an unreviewed safety question.
- 77-121 Temporarily repaired No. 12 steam generator blowdown line using bolted clamshell sleeve of sch.40 pipe and furmanite seal. This was not an unreviewed safety question since the weight of the repair material was found not to affect existing pipe stresses, and the repair is very close (2 ft) from an existing hanger and thus is supported properly.
- 77-133 This FCR added flanges to the releif valve in the safety injection system to facilitate removal of the valves for maintenance. The

stress analysis was reviewed to determine that the addition of flanges would have no effect, and furthermore, the flanges were installed to criteria consistent with the original piping installation. It was concluded that this FCR did not constitute an unreviewed safety question.

- 77-137 Installed flanges across safety injection line relief valve RV-409, to facilitate removal and maintenance of the valve. The safety analysis concluded that this modification did not constitute an unreviewed safety question and met all applicable criteria.
- 77-141 and 77-148 Severe wear had occurred in the stuffing box area of a salt water pump. New shaft sleeves were made from monel, and the lantern ring replaced with a ring of packing. No seal or flush water was ever used for these pumps so the lantern ring served no purpose. Safety analysis concluded that these modifications did not constitute an unreviewed safety question.
- 77-145 Installed flanges across safety injection leakoff header relief valve RV-407, to facilitate removal and maintenance of the valve. The safety analysis concluded that this modification did not constitute an unreviewed safety question and met all applicable criteria.
- 77-150 Installed flanges across shutdown cooling return header relief valve RV-469, to facilitate removal and maintenance of the valve. The safety analysis concluded that this modification did not constitute an unreviewed safety question and met all applicable criteria.
- 77-151 Installed flanges across quench tank relief valve RV-242 to facilitate removal and maintenance of this valve. The safety analysis concluded that this modification did not constitute an unreviewed safety question and met all applicable criteria.
- 77-152 Installed flanges across safety injection tank relief valves RV-211, RV-221, RV-231 and RV-241 to facilitate removal and maintenance of these valves. The safety analysis concluded that these modifications did not constitute an unreviewed safety question and met all applicable criteria.
- 77-153 Installed flanges across reactor coolant pump controlled bleed off relief valve RV-199 to facilitate removal and maintenance of the valve. The safety analysis concluded that the modification did not constitute an unreviewed safety question and met all applicable criteria.
- 77-156 Allowed the use of annealed copper sheet to manufacture stem washers for small (1/4" and 1/2") Dragon valves in the MSIV hydraulic system. These washers are not pressure retaining and were much easier to manufacture than purchase, since they were everyday commercial hardware. The washer material was unchanged. Safety analysis concluded that this change did not constitute an unreviewed safety question.

- 77-162 This FCR modified the hydrostatic test connection on the charging pump suction header. This modification was necessary to reduce the susceptibility of this area to fatigue-type failures. It was concluded that the modification would have a negligible effect on the seismic analysis, and as a result, this FCR does not constitute an unreviewed safety question.
- 77-164 This FCR modified the in-core instrumentation guide tube flange and the coupling bracket fastener to delete the necessity for lock wiring the tap screws. This FCR was necessitated because the guide tube thimble contained a stuck in-core instrument and had to be replaced. An alternate locking method was provided and the safety analysis concluded that since this alternate served the same function as the original, the change was not an unreviewed safety question.
- 77-166 The MSIV hydraulic system flow diagrams were corrected to show a three-way, instead of two-way sample valve, to reflect the as-built system. No unreviewed safety question existed.
- 77-179 Modified the siphon breaker gooseneck on the spent fuel pool cooling line by changing its mass and length to prevent vibration of the line. The safety analysis concluded that the structural integrity of the line remained unaffected and the modification did not constitute an unreviewed safety question.
- 77-1001 Replaced overload relays in the safety related motor control centers with ambient condition compensated overload relays. The change did not constitute an unreviewed safety question because the new overload relays meet the original intent of the motor control center specifications.
- 77-1010 Change drawing M-186 to correct size of the fuel transfer tube O-rings. Since this was a drawing change only this did not constitute an unreviewed safety question.
- 77-1018 Repair concrete reactor head laydown piers for unit 1 because of damaged caused by drifting reactor head. This change is not an unreviewed safety question since the system is non safety related, but described in the SAR, and is to restore original conditions.
- 77-1026 Revised instrument tube clamp and mounting drawings to allow use of cadmium plated, brass, or aluminum tube clamps and ASTM A-193 or A-307 for bolts. Safety analysis concluded no unreviewed safety question because new materials are consistent with original design criteria, and because no new systems nor components were added.
- 78-1 Allow "Furmanite" to be injected into the upper stuffing box area of various instrument root, drain, and vent valves that do not isolate normal flow, to act as a packing back-up. The use of "Furmanite" and the injection location was approved by the valve manufacturer in question prior to implementation and provided a means to reduce packing leakage while remaining in-service. The safety analysis concluded that this change did not constitute an unreviewed safety question.



- 78-4 Existing pipe hanger was modified from welded to bolted construction to allow temporary removal for rigging S/G hot manway scaffolding. The safety analysis concluded that the modification did not constitute an unreviewed safety question. The structural integrity of the hanger was not compromised by the change.
- 78-5 Existing pipe hanger was modified from welded bolted construction to allow temporary removal for rigging S/G hot manway scaffolding. The safety analysis concluded that the modification did not constitute an unreviewed safety question. The structural integrity of the hanger was not compromised by the change.
- 78-6 This FCR was for the injection of Furmanite into the gland leak-off into the pressurizer root valves. Furmanite is a compound which has been used to successfully stop leakage. At the time of the injection, the primary system leak rate exceeded the allowable technical specification limits, and as such, this FCR was to reduce this leakage to the point where the plant could continue to operate. The use of Furmanite is considered on a case by case basis because of a known level of chlorides associated with this material. In this circumstance, the use of Furmanite was approved for a specific limited time which was clearly insufficient time for any degradation to the valve. The requirement of the FCR was that the valve be inspected at the subsequent outage. Consequently, it was concluded that this FCR did not constitute an unreviewed safety question.
- 78-9 This FCR changed the tube plug material for the shutdown heat exchanger from a type 304 stainless steel to a type 316. It was concluded that since the only requirement for the tube plug was that it be of 300 series stainless steel that this FCR did not constitute an unreviewed safety question.
- 78-22 A small stainless bushing was added to the arm/disc assembly of a fire protection system check valve to compensate for wear in this location and provide good disc/valve seat alignment and better seating. Safety analysis concluded that this modification did not constitute an unreviewed safety question.
- 78-26 This FCR was to install a platform and small crane adjacent to the spent fuel pool to allow sleeving of the fuel assembly guide tubes during the refueling outage. The design met the necessary seismic criteria, and since installation was treated as safety related, it was concluded that all design criteria was consistent with what would have been required during the original plant design, and that this FCR did not constitute an unreviewed safety question.
- 78-32 This FCR modified the fuel transfer tube blind flange to enlarge the groove for the O-ring. This was necessary to improve the seal of the flange. Stress analysis associated with the flange was found to be unaffected by this change, and since the function of the flange was unchanged, it was concluded that this FCR did not constitute an unreviewed safety question.



- 78-46 Drawing change only to service water NSR piping. The function of the system was not affected.
- 78-53 A sliding-type support was added to an existing hanger on the Unit No. 2 main steam line. Although the piping was NSR, the FCR was treated as SR because the change occurred to hanger that was included in the main steam line seismic stress analysis. The added support did not attach to the pipe pressure boundary nor alter the original stress analysis, so no unreviewed safety question existed.
- 78-143 This FCR reduced the number of anchor bolts associated with a pipe hanger on the charging pump suction. It was found that one bolt had pulled loose. Calculations were performed to show that the remaining bolts provided adequate strength, and as a result it was concluded that this FCR did not constitute an unreviewed safety question.
- 78-1005 Update the seismic response curves for 4 kV switchgear 6750-E-5, 480 V load center 6750-E-6, and 480 V mssc 6750-E-7 (E-7G). Original curves did not reflect the true requirements. This change did not constitute an unreviewed safety question since it only corrected a previous error.
- 78-1008 This FCR was necessary to allow the necessary modifications to a spring hanger associated with the main steam line which were necessitated by a failure of the existing hanger. It was concluded that this FCR did not constitute an unreviewed safety question, as the design modifications ensured that the modified hanger was as strong or stronger than the existing hanger.
- 78-1021 This FCR corrected a drafting error associated with snubbers on a pressurizer surge line. The drawing change had no effect on plant operations, and was for clarification only. It was concluded that this FCR did not constitute an unreviewed safety question, and that the field installation was correct.