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December 22, 1997

Re: Indian Point Unit No. 2
Docket No. 50-247

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

Subject: 10 CFR §50.59(b) Report for Indian Point Unit No. 2

Pursuant to 10 CFR §50.59(b)(2), enclosed please find a report of the changes, tests and experiments conducted at Indian Point Unit No. 2 during the period July 1, 1995 through July 31, 1997. The changes set forth in the report represent the changes made to the facility as defined in the Indian Point Unit No. 2 Updated Final Safety Analysis Report pursuant to 10 CFR §50.59(b)(1). A supplement to the report will be submitted on or before March 2, 1998 to include all additional safety evaluations written during the subject period.

Should you or your staff have any questions regarding this matter, please contact Mr. Charles W. Jackson, Manager, Nuclear Safety and Licensing.

Very truly yours,

Paul H Kinkel

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Enclosure

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ATTACHMENT

10 CFR 50.59(b) REPORT OF CHANGES, TESTS, AND EXPERIMENTS July 1, 1995 THROUGH July 31, 1997

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT No. 2
Docket No. 50-247
December, 1997

Preface

The changes set forth in the report represent the changes made to the facility as defined in the Indian Point Unit No. 2 Updated Final Safety Analysis Report pursuant to 10 CFR §50.59(b)(1) completed from July 1, 1995 through July 31, 1997. These have been evaluated and determined to meet the following criteria as established by 10 CFR 50.59:

Criteria

1. The probability of occurrence or the consequences of an accident or malfunctions of equipment important to safety previously evaluated in the safety analysis report has not been increased.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report has not been created.

3. The margin of safety as defined in the basis for any technical specification has not been reduced.

It has, therefore, been concluded that none of these changes represents an unreviewed safety question.

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1. Cycle 13/14 Refueling - Cycle 14 Operation
SE 97-179-MD, 97-235-EV and 97-138-PR

Indian Point Unit 2 was refueled following the end of the thirteenth cycle of operation. The cycle 14 core loading consists of 81 fresh VANTAGE+ assemblies, 80 VANTAGE+ assemblies inserted at the start of cycle 13, and 32 OFA assemblies. The OFA assemblies include six reconstituted assemblies. Two reconstituted assemblies were inserted at the start of cycle 14 and four were carried over from cycle 13. The six reconstituted assemblies have a total of ten stainless steel rods in place of leaking fuel rods. Also, 28 new Enhanced Performance Rod Cluster Control Assemblies were installed in the core. The fresh fuel assemblies are mechanically identical to the previous VANTAGE+ fuel except that they use cast top nozzles, grooved fuel rod end plugs, and a mid-enrichment axial blanket.

The nuclear design of the cycle 14 core was evaluated using NRC approved computer codes (Phoenix-P, Advanced Nodal Code, Thinc-IV PWR) and standard calculational methods. Thermal and hydraulic design analyses used the revised thermal design procedure and the standard thermal design procedure, as applicable. The startup test program was modified to include a moderator temperature coefficient measurement only for the all rods out condition.

Cycle 14 is the first cycle for which the Best Estimate Large Break LOCA analysis has been used. This analysis has been reviewed by the NRC and is specified in the Indian Point Unit 2 Technical Specifications.

The effects of the reload, including the mechanical design changes, on other accidents and incidents analyzed in the UFSAR were evaluated. In all cases it was found that the effects were accommodated within the conservatism of the initial assumptions used in the previous applicable safety analyses. The changes do not adversely affect these analyses.

All applicable design criteria and licensing basis acceptance criteria are met. This change did not involve an unreviewed safety question.

2. Organization Chart Changes
SE 95-373-EV, 95-386-EV, 95-413-EV and 97-117-EV

Engineering support for Company facilities has been changed from a Central Engineering organization to dedicated engineering units structured to support each facility. All engineering disciplines will support the Indian Point facility with unchanged functional responsibilities. The Nuclear Power Engineering unit has been transferred to report to the Vice President, Nuclear Power. The Chief Project Engineer Nuclear position has been retitled to Chief Engineer, Nuclear Power Engineering. A new Design Basis Reconstitution group has been formed.

The organization structures have been realigned for Nuclear Quality Assurance, the Independent Safety Review Group, System Engineering and analysis, Nuclear Training, and Outage Manager. The Configuration Management position has been eliminated and the functions divided among other organizations.

The changes to the engineering organization which support fire protection comply with the requirement of the license condition to provide a fire protection organization that meets NRC guidance. No changes to the engineering functions provided to the plant have been made. The functions performed by other organizations were not adversely impacted. No unreviewed safety question was involved.

3. Modifications Associated With Power-Operated Relief Valves
SE 96-334-PR, 97-008-MD, 97-059-MD, and 97-077-PR

The pressurizer power-operated relief valves (PORV) are provided to protect against pressure that is beyond the pressure limiting capacity of the pressurizer spray. The PORVs also open automatically to prevent the reactor pressure vessel from exceeding pressure limits when its temperature is 350°F or less. A block valve is provided for each PORV. A temporary operating instruction was issued to close the block valves in the event of fire, which might cause unplanned opening of a PORV. An interlock has been installed to open the block valves if the pressurizer pressure increases above 2300 psig, which is below the setpoint for opening the PORVs. Manual isolation (disconnect) switches have been installed that will allow operation of the PORVs to be blocked in the event of fire that could cause spurious opening by a "hot short" in the control circuit. Operating procedures have been

changed such that the block valves are maintained closed under steady-state conditions when the reactor coolant system temperature is above 350°F, and opened under pressure transient conditions.

The PORVs do not perform any safety-related function above 350°F. The block valves are provided to prevent loss of reactor coolant system inventory due to unintended opening of a PORV. These changes provide added assurance that a fire would not cause spurious loss of reactor coolant through a PORV and its block valve, but do not affect their normal functional capability. No unreviewed safety question was involved.

4. Increase in Allowable Pressurizer Relief Tank Temperature
SE 95-399-EV

Procedures were changed, along with the high temperature alarm set point, to reflect a possible increase in the normal operating temperature of the pressurizer relief tank to 170°F. The tank condenses and cools discharges of steam from the pressurizer. This change allows the plant to operate with leakage from the pressurizer power operated relief valves and block valves.

Analyses have shown that the tank can perform its function with an initial temperature up to 237°F. It does not affect the operation of any system that could cause a previously evaluated accident, and is not relied on to mitigate the consequences of any accident. This change did not involve an unreviewed safety question.

5. Containment Isolation Valve for Nitrogen Supply
SE 96-207-PR, 96-291-MD and 97-040-MD

Valve 863 is the containment isolation valve in the nitrogen supply line to various systems and components inside containment. A temporary nitrogen supply for operation of the valve for safe shutdown was made available. Automatic closure of the valve on actuation of the containment isolation signal has been provided, and a permanent backup nitrogen supply has been provided to allow the valve to be opened under manual control. Addition of the containment isolation signal increases the reliability of valve closure if needed. The backup nitrogen supply allows the valve to be opened if required for operation

of the auxiliary safe shutdown system or for other purposes. The normal operating function of the valve is not affected. No unreviewed safety question was involved.

6. Pressurizer Heater Operation
SE 96-194-PR

Station operating procedures have been modified to state that one or more backup pressurizer heater groups are to be energized manually. Energizing backup heaters ensures that a small pressurizer spray flow is maintained, which, in turn, mitigates boron stratification in the pressurizer and minimizes the thermal gradient in the pressurizer spray line. Pressure control is not affected, nor are pressurizer capacity and availability. No unreviewed safety question is involved.

7. Additional Circuit Protection for Cables
SE 92-131-GM Rev 2

Based on the ongoing cable separation evaluation, circuit anomalies have been identified. Additional fuses have been added to these anomalous circuits. The normal functioning of these circuits was not changed, but the protection against a fault in a circuit not required for safety affecting a circuit required for safety was enhanced. The additional fuses are Class IE and are seismically qualified. No unreviewed safety question was involved.

8. Indication of Level in Reactor Vessel During Draindown
SE 96-075-MD

In addition to the existing channel, two additional channels to indicate level in the reactor coolant system under draindown conditions have been installed. They provide control room indication. They have no control or protective functions, and are isolated from the reactor coolant system except during refueling and/or draindown. They do not affect the seismic qualification, operating functions or safety related functions of and system or equipment. No unreviewed safety question was involved.

9. Hydrogen and Nitrogen Supplies
SE 96-248-EV and 96-253-EV

Nitrogen is supplied to the accumulators of the safety injection system, to the waste disposal system, and to other systems and components. Hydrogen is supplied to the volume control tank for oxygen scavenging, and to the hydrogen recombiner for testing. Connections have been provided to allow truck mounted supplies of hydrogen and/or nitrogen to be used, either alone or in combination with the existing cylinder bank supplies. The design and location of the new hydrogen truck supply has been evaluated, with the conclusion that it will not contribute to the overall core damage frequency. Capability of the gas supplies to support required operations will be maintained. Safety related functions of the supported equipment will not be affected. No unreviewed safety question was involved.

10. Safety Injection Accumulator Drain Procedure
SE 96-259-PR

Plant procedures have been modified to allow draining of the safety injection accumulators through the sample panel. This allows better control of the flow rate and discharges the drainage directly to the waste disposal system. There is no change to the safety function of the accumulators, or the operation of the sampling system. No unreviewed safety question was involved.

11. Containment Sump Grating Repairs
SE 97-060-TM

Holes in the 1" x 4" grating over the containment sump have been temporarily repaired by covering them with stainless steel screen. In the event of a loss of coolant accident, water may be supplied to the residual heat removal (RHR) pumps for recirculation back to the containment. Evaluation shows that, even if the screen covered the entire grating, the RHR pumps would receive an adequate supply of water. There is no unreviewed safety question involved.

12. Fuel Storage Building Ventilation System
SE 95-391-EV and 96-209-EV

The ventilation system for the Fuel Storage Building has been modified by welding shut the damper which bypasses the filter bank in the exhaust stream. All air exhausted from the building flows through the filters. The supply and exhaust air flow rates were reduced to 20,000 cfm at all times. The system is not required to mitigate any accident because, in the UFSAR evaluation of offsite doses from a fuel handling accident in the fuel storage building, no credit was taken for iodine removal by the filters. Doses to the operators would be somewhat higher due to the decreased flow rate. The new flow rate has been evaluated to be acceptable with regard to building heat removal capability. No unreviewed safety question was involved.

13. Use of Freeze Seals for Repair of Components
SE 95-271-PR, 96-161-PR, 96-173-PR, 96-270-PR Rev 1, 96-281-PR Rev 1, 97-083-PR Rev 1, 97-084-PR Rev 1, 97-101-PR, 97-102-PR, 97-238-EV, 97-252-TR, 97-264-EV

This change involved the use of repair procedures which call for system isolation by means of the application of freeze sealing methods. These procedures include the performance of pre-freeze liquid penetrant examinations and pipe diameter measurements, the provision of ventilation paths, the installation of freeze collars, the addition of liquid nitrogen to the freeze collars, the performance of the repair, the post-freeze thaw and the post-freeze liquid penetrant examination and pipe diameter measurements. This technique was applied to stainless steel and carbon steel piping to enable repair/modification of the following components: CVCS valves, an accumulator fill line valve, a valve from the RWST, a SI check valve, a RHR check valve, city water system valves, and fire protection system valves and piping components. The potential failure modes of pipe fracture or freeze plug failure were analyzed and precluded. Compensatory measures were also implemented in the unlikely event of failures. Personnel habitability considerations were covered through continuous oxygen monitoring during the freeze seal and maintenance activity. There was no impact on environmental qualification or the fire protection program plan. These procedures did not involve an unreviewed safety question.

14. Allowable Service Water Temperature Reduction to 30°F

SE 96-48-EV

Based on the potential for river water temperature to decrease below the previously evaluated 35°F, the minimum allowable operating temperature for water in the service water system was reduced from 35°F to 30°F. Functional capability of system piping and components is not adversely affected by the temperature reduction. The effects on accident analyses were evaluated and found to be negligible. No unreviewed safety question was involved.

15. Test to Determine Tave at Full Power

SE 95-260-PR

Early in cycle 13, a test was prepared and evaluated to determine the reactor coolant temperatures required to reach full power with the new high pressure rotor that was installed in the turbine-generator during the cycle 12/13 outage. No physical changes were made to the plant and no setpoints were changed for the test. This test was evaluated but not performed. Performance of the test would not have involved an unreviewed safety question.

16. EOP Revisions

SE 95-345-PR, 96-027-PR and 96-284-PR

This change involved the revision of the emergency operating procedures (EOPs). The EOPs are a network of predefined and prioritized symptom-based response strategies which guide operator response to analyzed postulated transients and accidents for restoration of the plant. These revisions included cautions and additional information to enhance the ability of the operators to cope with postulated incidents. The changes involved procedure changes and did not impact the physical hardware of the plant. The changes did not adversely affect equipment operation. The revisions did not involve a change in the strategies and tactics used for accident mitigation. No new failure modes were introduced. No electrical loads were added. There was no impact on seismic qualification, environmental qualification or the fire protection program plan. These changes did not involve an unreviewed safety question.

17. Containment Fire Extinguishers
SE 97-109-EV

During plant heatup and operation, fire extinguishers are removed from containment and relocated to its entrances. This change requires them to be reinstalled in containment only during refueling outages and other periods of general open access to the containment for major maintenance activities as determined by the Fire Protection System Specialist/Engineer. This change also relocates the fire extinguishers in containment (when their presence is required) to make them more accessible. Procedures require dedicated fire extinguishers and a fire watch for "hot" work. This change did not alter the function or operation of the fire
extinguishers or any equipment that is important to safety. No unreviewed safety question was involved.

18. Fire Protection Enhancements
SE 96-063-MM, 96-102-TM, and 96-249-MD

The previously-existing fire protection sprinkler system in the Maintenance and Outage Building was extended to cover the drumming station and hallway on elev. 95' where protective clothing is stored. The transformer fire detector system was replaced. This system protects the main transformer, the station service transformer, and the unit auxiliary transformer. Heat tracing was installed on a section of fire protection piping in a location in the Primary Auxiliary Building that might be susceptible to freezing. These changes improve the fire protection capability and reliability in the plant. There is no change to any safety related component or system. No unreviewed safety question was involved.

19. Disconnect Trip Circuits for the Emergency Diesel Generators
SE 96-052-TM and 97-090-MD

The emergency diesel generators have undervoltage relays that control both closing and tripping of the generator breakers. Studies show that, in the event of certain failures of connected loads, this circuit could cause tripping of the generator breaker, followed by reclosing on the fault. This undervoltage trip did not coordinate with other fault protection devices, therefore it was disconnected. Removal of this trip allows the trip devices for the individual loads to clear faults without

affecting the entire bus, thereby increasing the reliability of the system. This change did not impact the independence of the emergency diesel generators, and no unreviewed safety question was involved.

20. Temporarily Disconnect Actuation Circuits to Steam Dump Valves
SE 96-202-TM

During troubleshooting and repair of a ground on DC bus 22, it was necessary to disconnect actuation circuits (one at a time) to the six LP steam dump valves. These circuits are one of a pair of redundant circuits which initiate valve opening in the event of turbine trip. The redundant circuits remained operable, and each valve was reconnected and declared operable before proceeding to the next one. At any time, this temporary modification affected only one of two actuation signals to one valve. Plant procedures allow operation at 100% power with one inoperable LP steam dump valve. The system is not safety related and no unreviewed safety question was involved.

21. Jumper Containment Isolation During Relay Replacement
SE 97-157-TM

With the plant in the cold shutdown condition and no core alterations taking place, the MG6 relays were replaced. The function of these relays is to actuate safeguards equipment, including containment isolation. A jumper was installed to allow containment ventilation to continue in operation during the relay replacement. The containment isolation signal from radiation monitors R41 and R42 remained operable during the work. The jumpered circuits provide containment isolation in the event of accidents which are not postulated to occur at cold shutdown. The containment isolation function on high radiation was not affected. No unreviewed safety question was involved.

22. Provide Backup Power Supply to Spent Fuel Pit Pump
SE 95-355-TM

During a maintenance outage of the auxiliary transformer, a contingency backup power supply was provided for the spent fuel pit pump. The supply consisted of cables from substation A to a point near the spent fuel pit building. In the event of loss of power to the pump, this cable was available to be quickly connected to provide an alternate power supply to the pump to maintain spent fuel pit cooling. The proper functioning of the pump was ensured, and no unreviewed safety question was involved.

23. Provide Backup Power Supply to Lighting Panel 223
SE 95-358-TM

Lighting Panel 223 provides power to lights in the emergency diesel generator building. While the normal power supply to lighting panel 223 was out of service, an alternate supply was provided via substation A. The plant was in the cold shutdown condition and the panel was not required to be operable. No unreviewed safety question was involved.

24. Lighting Improvements
SE 96-234-GM Rev 1

This modification involved plant lighting (except in the control room, the simulator control room, and security lighting), battery powered emergency lights, and 125-V dc emergency lights. Improvements involved in this modification included replacement of obsolete fixtures, upgrading with higher rated fixtures, installation of additional fixtures, and relocation of components to improve lighting levels and testability. Where required, lighting equipment is seismically mounted. This change did not affect the functioning of any equipment important to safety, and did not involve an unreviewed safety question.

25. Add Circuit Protection for Fire Pump House Transformer
SE 96-179-MM

A fused disconnect switch was installed in the feeder circuit to the distribution transformer for the fire pump house and the feeder cable size was increased. The transformer supplies power for fire protection system components and for area heating and lighting. These changes are in accordance with the National Electrical Code. The fuses provide protection for the transformer and connected equipment. There is no adverse effect on any fire protection or safety related component. No unreviewed safety question was involved.

26. Procedures for removing 6.9kV bus from Service
SE 97-141-PR

A procedure was developed to remove 6.9 kV bus 5 from service for maintenance with the unit in the cold shutdown mode. Another procedure was developed to provide contingency actions in the event of loss of 138 kV power with bus 5 out of service. During the outage of bus 5, the 480 V busses normally energized from bus 5 were energized from bus 6. The emergency diesel generators were available to supply power if needed. Power was maintained to equipment required during cold shutdown, and no unreviewed safety question was involved.

27. Lift Power Leads to Strainer for 23 Service Water Pump
SE 97-055-TM Rev 1

To accommodate testing of service water pump 23 and associated equipment, the power leads to its strainer were lifted. Reactor coolant temperature was below 350°F and the service water pump was not required to be operational. The strainer differential pressure indication and alarm were available so the pump could be secured on high differential pressure. Required service water was supplied by operation of two additional pumps. This operation did not represent an unreviewed safety question.

28. Jumper Pressure Alarm for Accumulator 24
SE 96-122-TM

A failed pressure transducer energized the pressure alarm window for accumulator 24. This alarm also receives three other input signals, which were masked, rendering them ineffective. The input from the failed transducer was temporarily jumpered, restoring the alarm functionality. Operation of the accumulator was not affected, but jumpering the invalid input allowed operators to take prompt action on pressure conditions which could effect accumulator operability. There was no unreviewed safety question.

29. Jumper Weld Channel Zone 4 Alarm
SE 97-019-TM

The flow transmitter for weld channel zone 4 was malfunctioning to create false alarms. It was temporarily disconnected to clear the alarm and allow it to respond properly to malfunctions in other zones. Overall system performance was not affected, and there was no unreviewed safety question.

30. Continuous Operation of EDG Crankcase Exhausters
SE 96-101-TM

The crankcase exhauster control circuits for the crankcase exhausters of emergency diesel generators 22 and 23 were temporarily jumpered so the exhausters would operate continuously. They normally are initiated by pressure switches which sense cooling jacket water pressure. Continuous operation assures they will operate if the emergency diesel generators are required. This eliminates a potential pressure switch fault. It did not involve an unreviewed safety question.

31. Repair Steam Generator Manway Leak
SE 96-279-TR

During a routine inspection, a small leak was noted at the steam generator secondary side manway. Total leakage into the containment from all sources was 0.2 gpm, well below the Technical Specification limit of 10 gpm. It was concluded the leak was caused by degradation of the manway gasket. Existing flange nuts were removed (one at a time) and replaced with "injection valve cap nuts" which were torqued to design specifications. The gap between the flange and the vessel boss was sealed with wire. The annular space between the gasket OD and the wire wrap was injected with sealant via the injection valve cap nuts. The sealant (a thermosetting phenolic resin) is injected under high pressure, filling the space in the annulus, the bolt holes, and the leak path, and arresting the leak. Stresses in the bolt, cover plate and threads were evaluated and injection pressure limited so that allowable stresses would not be exceeded. The sealant is compatible with system materials and water chemistry. These factors ensured that the code vessel pressure boundary integrity would be maintained and no unreviewed safety question was involved.

32. Use of ETA for pH Control of Secondary Water
SE 95-256-EV and 96-115-TM

The pH control agent for the secondary water system was changed from ammonia to ethanolamine (ETA). ETA affords better protection of wet steam piping and heater drain lines, because of its lower volatility. The tanks and pumps that were used to feed ammonia into the feedwater are used for ETA. The setpoint on the condensate conductivity high alarm was increased to account for the use of ETA. These changes do not have any adverse effect on any processes or materials, and do not affect any accident mitigation function. They did not involve any unreviewed safety question.

33. Temporarily Repair Steam Leak in Main Steam Isolation Valve
SE 96-137-TR

A steam leak from the grease fitting in the area of the stuffing box of main steam isolation valve MS-1-24 was temporarily repaired. The purpose of the fitting is to lubricate the packing. The repair consisted of installing a special C-clamp and gasket around the stuffing box and

fitting. The repair, including the inability to grease the valve packing for the duration of the repair, did not adversely affect the operability of the valve. No unreviewed safety question was involved.

34. Maintain Service Water Strainer Blowdown Valves
SE 95-339-TM

Valves in the service water strainer blowdown lines must occasionally be maintained or replaced with the unit on line. To accommodate this need, blowdown in all lines is stopped for a short time. The manual stop valve closest to the blowdown header is removed and a blind flange installed. The remaining blowdown lines are returned to service while the repair is made. The service water system is maintained in operation during the blowdown line outage and the repair. System pressures and flows are not affected. There is no unreviewed safety question.

35. Desludge Waste Holdup Tank
SE 95-383-TM

Resin and sludge were removed from the waste holdup tank to a high-integrity container for offsite disposal. This reduced radiation levels and allowed the holdup tank to be cleaned. An air operated pump and hoses were used to transfer the contents of the holdup tank. The container was then dewatered and prepared for disposal in accordance with normal procedures. The transfer operation did not affect any systems with accident mitigation functions. Radiation levels were monitored during the operation. No unreviewed safety question was involved.

36. Reactor Coolant Drain Tank Vent and Drain
SE 96-197-EV

The reactor coolant drain tank collects liquids from the primary coolant system that contains dissolved hydrogen. The tank is normally connected to the vent header, which maintains nitrogen cover gas to prevent formation of a combustible gas mixture. Due to unavailability of the vent header, vent header valves 1786 and 1787 and nitrogen supply valves SOV-3416 and 3417 were closed, and the tank drain and vent valves were opened. This allowed drainage to the tank to flow to the containment sump, to be pumped from there to the waste disposal

system. Consequently, filling and emptying of the tank was prevented, which minimized gas flow in and out of the tank. The valves which were closed are containment isolation valves and close to maintain containment integrity. There was no unreviewed safety question.

37. Provide Temporary Nitrogen Supply
SE 96-252-TM

A temporary nitrogen source was provided to allow maintenance and repair of the nitrogen system. It consisted of a high pressure steel braided hose from the truck supply to the storage bottles. The hose was restrained against whip in the event of failure, and an operator was stationed at its connection when it was in use. Safety related equipment received an uninterrupted supply of nitrogen by use of this temporary supply. Protection was provided against effects of a potential hose failure. No unreviewed safety question was involved.

38. Provide Isolation Valve Test Valves
SE 96-255-MM

Isolation valve MW-17 and MW 17-1 are in the city water supply line to containment. To facilitate testing valve MW-17, an isolation valve and a vent valve were installed. They do not affect the function of the line, which is to supply water to fire hose stations and hose connections in containment. This change did not involve any unreviewed safety question.

39. Residual Heat Removal Through Safety Injection System

SE 97-085-PR Rev 1 and 97-086-EV

To enable valve repairs, it was necessary to reroute the return flow from the residual heat removal system through the safety injection system to the reactor coolant system cold legs. The plant was in cold shutdown, utilizing the residual heat removal system in the normal mode prior to the start of this re-routing. A pressurizer safety valve was removed to assure that the reactor coolant system could not be subjected to excessive pressure. The safety injection pumps were started and valves were realigned to recirculate flow from the residual heat removal system through the high-head safety injection pumps and the safety injection lines, similar to the recirculation flow path that is available following a postulated loss of coolant accident. Analysis had shown that adequate core cooling would be obtained via this path and that equipment would be operated in accordance with its design. All re-routing was done in accordance with approved procedures and the Technical Specifications. No unreviewed safety question was involved.

40. Use of Carbohydrazine During Steam Generator Layup

SE 97-108-PR

A solution of carbohydrazine is used in the steam generators for oxygen scavenging during layup, in place of hydrazine, which had been used previously. Carbohydrazine is more effective in reducing corrosion rates. It is added through the existing chemical feed system. It will not harm the steam generators or other equipment. An unreviewed safety question was not involved.

41. Feedwater Heater Repair
SE 95-406-EV

Extraction steam nozzles in feedwater heaters 26A and 26B were repaired. The heaters meet the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII. All requirements of the code were met except for the use of an independent code inspector. The work was performed by qualified welders as overseen by the original equipment manufacturer's (OEM) representative. The OEM possesses an "R" stamp to repair ASME Section VIII vessels and is currently doing business in New York State. New York State does not require ASME Section VIII to be applied to unfired pressure vessels. The repair met the requirements of the New York State and the Con Edison Quality Assurance program. There was no effect on the operability of any system. The margin of safety was not reduced and no unreviewed safety question was involved.

42. Jumper Alarm for Low Service Water Pressure
SE 95-308-TM

During a plant shutdown, non-essential service water header 123 was removed from service. The 123 alarm signal was temporarily jumpered to enable the alarm on low service water pressure to be functional for the 456 header. This ensured that the alarms for the operating service water header would be operable. This jumper did not alter any plant condition and did not involve an unreviewed safety question.

43. Block Source Range High Flux Trip
SE 95-030-TM

The source range high flux trip is provided to trip the reactor during startup and low power operation. It is bypassed when reactor power exceeds a preset limit and automatically reinstated when power is reduced. During a period of normal operation, the bypass relay for one channel (two are provided) was temporarily jumpered. This had no effect, since the trip is not functional except at low power. The trip was later restored. The source range trip protects against certain postulated accidents. There are three other trips which provide redundant protection, as well as the redundant source range channel. No unreviewed safety question was involved.

44. Temporarily Raise Accumulator Relief Valve Setpoint
SE 97-092-TM

To minimize nitrogen leakage, the setpoint for the relief valve for accumulator 24 was temporarily increased to 735 psig (5% above the normal setting). The ASME Code, Section III permits overpressure protection up to 10% above the design pressure. This temporary change did not alter the function or the operating parameters of the accumulator. No unreviewed safety question was involved.

45. Provide Temporary Nitrogen Supply for Boric Acid Storage Tank Level Transducer
SE 96-234-TM

During an outage the nitrogen system was out of service for maintenance. To provide a continuous control room indication of the boric acid storage tank level transducer, a temporary nitrogen cylinder supply was provided. This level signal is for indication only. It has no control function. The temporary nitrogen supply did not involve any unreviewed safety question.

46. Defeat Turbine Runback for Dropped Rod N-9
SE 93-375-TM

A jumper was applied to defeat the dropped rod N-9 input due to malfunctions causing spurious runbacks. The runback circuitry for other rods was not affected. An analysis assuming no turbine runback verified that the DNBR design basis continued to be met, and that the conclusions of the Reload Safety Evaluation remained valid. This jumper did not represent a reduction in the margin of safety, and no unreviewed safety question was involved.

47. Change Air Supply to Weld Channel and Penetration Pressurization System Valves
SE 93-275-TM

Four pressure control valves supply compressed air to the four weld channel zones. To improve reliability of the system, it was rearranged so control air for the domes of the valves was supplied from the WCPPS, which has a backup nitrogen supply, rather than from instrument air. Thereby the valves can continue to operate in the event of a loss of instrument air. The new installation is designed to function following a seismic event. No unreviewed safety question was involved.

48. Defeat 480 V Bus Undervoltage Protection
SE 90-189-TM

During outages of the 480 V busses and their associated emergency diesel generators, their undervoltage trips were defeated. Outages were restricted to only one EDG and its busses at a time. Defeating the undervoltage trips on the de-energized bus allowed the other two EDGs to remain on standby, ready to supply power in the event of loss of power to their busses. These activities were undertaken with the reactor shut down at a temperature of less than 200°F. The margin of safety was not reduced and no unreviewed safety question was involved.

49. Temporary Operation of Control Rod Drive Fan (CRDF) No. 21 without Exhaust Damper
SE 94-334-EV

Control rod drive fan no. 21 was operated without its exhaust damper installed. The function of the damper is to keep the fan from rotating backwards when it is not operating, thereby limiting the starting current required to place the fan in operation. The damper assembly was removed in a seismically restrained manner. The fan was started utilizing a manually controlled damper which was removed after the fan started. This evolution was controlled with plant procedures. The operation or failure of a fan, including the removal of a damper, has no effect on any accident previously evaluated in the FSAR. Removing the damper for CRDF no. 21 had no effect on the fan while it is in service. Should this fan have been shut down, the other fans would cool the coil stacks and continued operation would have been

permitted. There was no impact on environmental qualification or the fire protection program plan. This change did not involve an unreviewed safety question.

50. Use of Nozzle Dams
SE 95-088-PR Rev 1

Nozzle dams are used in the steam generator nozzles during refueling outages. The nozzle dams provide a leak tight seal between the steam generator primary sides and the reactor coolant system. They permit steam generator maintenance and inspection concurrently with reactor refueling. Permanent rings welded into each steam generator retain the nozzle dams. Inflatable seals assure the installation is leak tight. Procedural controls ensure that decay heat removal is maintained and excessive pressure buildup does not occur. Appropriate controls and alarms are provided. The use of nozzle dams does not involve an unreviewed safety question.

51. Operation of Fan Cooler Units Without Relief Valves
SE 97-207-TM

During a cold shutdown of the reactor coolant system, the relief valves on the service water supply to the containment fan cooler units were removed and blanked off. Service water was supplied and the fan cooler units operated. The function of the relief valves is to prevent overpressure in an isolated section of line that is heated up, causing the contained liquid to expand. The service water pumps cannot cause an overpressure. During the cold shutdown condition, there is no source of heat that could cause an overpressure. The accident mitigation function was not affected, and no unreviewed safety question was involved.

52. Temporary Power Supply to R11 and R12
SE 91-131-TM

R11 and R12 are the containment air particulate and gaseous radiation monitors. During an outage of the normal power supply to their compressor, a temporary supply was provided. These monitors initiate a control room alarm and closure of containment purge supply and exhaust duct isolation valves and pressure relief line isolation valves. No functional change was involved. There was no unreviewed safety question.

53. Curtain Drain Monitoring
SE 94-204-PR Rev 1, 95-328-MD Rev 1 and 95-369-TM

The curtain drain and sphere foundation sump collect ground water and rainwater from certain areas of the site. A curtain drain sump has been built and equipment provided to prevent unmonitored discharge of water from these sources. Flow is directed to the secondary boiler blowdown purification system where it is monitored by radiation monitor R-51 before discharge. In the event of a high radioactivity level, the liquid would be diverted to the waste collection tanks. These changes do not impact or interface with any aspects of previously evaluated accidents or safety related equipment. Their operation or malfunction will not affect the probability or consequences of any accident. No unreviewed safety question was involved.

54. Containment Integrity Analysis
SE 94-061-EV Rev 1

A new containment integrity analysis was performed to demonstrate that pressure inside containment would remain below the containment design pressure if a Loss-of-Coolant Accident (LOCA) were to occur during plant operation. The analysis was performed for the limiting double-ended pump suction break, and used both the licensed maximum power level (3083.4 MWt total heat input to the NSSS) and the maximum calculated power of 3216 MWt. It considered the minimum safeguards case of three containment fan coolers and one containment spray pump. This was based on the limiting single failure of emergency diesel generator 23, with on containment fan cooler assumed to be out of service. The analysis resulted in calculated peak pressures of 43.45 psig for the 3083.4 MWt power level, and 44.01 psig for the 3216 MWt case. These are below the containment design pressure of 47 psig. No unreviewed safety question was involved.