U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No.	95-02
Docket No.	50-247
License No.	DPR-26
Licensee:	Consolidated Edison Company of New York, Inc. 4 Irving Place New York, New York 10003
Facility:	Indian Point 2 Nuclear Power Plant
Location:	Buchanan, New York
Inspection Period:	January 8, 1995 - February 11, 1995
Inspectors:	G. Hunegs, Senior Resident Inspector R. Fuhrmeister, Project Engineer D. Silk, Senior Emergency Preparedness Specialist

Approved by: Lawrence T. Doerflein 3/14/95

Lawrence T. Doerflein, Chief — Date
Reactor Projects Section No. 1A
Division of Reactor Projects

<u>Inspection Summary</u>: This inspection report documents resident inspector core, regional initiative, and reactive inspections performed during day and backshift hours of station activities including: plant operations; maintenance; engineering; and, plant support.

<u>Results</u>: Inspection results are summarized in the attached executive summary.

9503270041 950316
PDR ADOCK 05000247
Q PDR

EXECUTIVE SUMMARY

Indian Point 2 Nuclear Power Plant
NRC Inspection Report No. 50-247/95-02

PLANT OPERATIONS: On January 17, a turbine/reactor trip occurred due to low auto-stop oil pressure. All automatic actions occurred as expected and the plant responded to the transient as expected with the exception of a greater than expected cooldown of the reactor coolant system. The cause of the greater than expected plant cooldown appears to be the slower than expected closure of the high pressure steam dump valves. Manual operator action was taken to start a second charging pump and secure main feedwater to the steam generators to restore reactor coolant system pressure, pressurizer level and temperature. Con Edison intends to review and adjust as necessary the high pressure steam dump control setting. Operator actions during the trip recovery were good. The cause of the low auto-stop oil pressure was determined to be a solenoid valve in the turbine control oil system which had a degraded pilot seat.

On January 19, during startup, a turbine trip occurred due to high steam generator level. The high steam generator level occurred during operator manipulation of the feedwater control system in manual. Con Edison's actions in response to the turbine trip were appropriate.

During application of a tagout, a mislabelled valve resulted in isolation of the air to an inflatable fuel transfer canal gate seal. This caused the water in the spent fuel pool to drain to the transfer canal and resulted in a spent fuel pool level decrease of approximately 3 feet. Immediate corrective actions to identify and correct the condition were timely. Water level remained 20 feet above the spent fuel assemblies and there were no abnormal radiation levels observed as a result of the event. Con Edison's approach to restore level was well thought out and deliberate.

The cause of a failure of a residual heat removal pump to start was not readily apparent. Con Edison's actions regarding technical specifications, and NRC notifications were timely. Investigation of the breaker and control room switch is scheduled.

MAINTENANCE/SURVEILLANCE: The NRC observed that a hole had been bored in the side of the nitrogen supply line for a safety related system without a method to prevent debris from entering the system. Poor foreign material exclusion control resulted in debris inside the system. Con Edison's immediate corrective actions, including inspection of the previously completed installation, were appropriate.

Portions of the containment floor coating degraded because of improper application, primarily attributed to poor application and possibly due to poor surface preparation. It appears that the importance of proper coating application was not fully recognized by Con Edison. Because of this, the application of paint was not properly controlled. Con Edison intends to reapply a protective coating during this outage. Preliminary review indicates

that the degraded coating did not effect operability of the recirculation and containment sumps.

ENGINEERING: Plans for engineering coverage for the refueling outage were considered to be well developed. A review of the nuclear power engineering organization was considered to be informative and productive.

Con Edison's response to a 10 CFR Part 21 notification and actions associated with the polar crane modification, including safety considerations, were considered excellent.

PLANT SUPPORT: On February 7, a security officer entered a posted high radiation area without a dose rate indicating device and without having the required health physics technician present for entry as required. Con Edison identified the violation and has completed acceptable corrective action. In addition, personal dosimetry indicated that the security officer did not receive any dose. Therefore the guard's improper entry into a posted high radiation area is a non-cited violation in accordance with Section VII.B of the NRC Enforcement Policy.

Changes made to the emergency plan and implementing procedures were acceptable and did not decrease the effectiveness of the emergency preparedness program.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ii

TABLE OF CONTENTS iv

1.0 SUMMARY OF FACILITY ACTIVITIES 1

2.0 PLANT OPERATIONS 1
2.1 Operational Safety Verification 1
2.2 Followup of Events Occurring During the Inspection Period . . 2
2.2.1 Turbine/Reactor Trip 2
2.2.2 Inadvertent Draindown of Spent Fuel Pool 3
2.2.3 Failure of Residual Heat Removal (RHR) Pump to Manually Start 5
2.2.4 Containment Ventilation Isolations 6

3.0 MAINTENANCE/SURVEILLANCE 6
3.1 Maintenance Observations 6
3.1.2 Foreign Material Exclusion (FME) 7
3.1.3 Degraded Containment Floor Coating 7

4.0 ENGINEERING 9
4.1 Nuclear Power Engineering Organization 9
4.1.1 Nuclear Power Engineering Reorganization 9
4.1.2 Nuclear Power Engineering Outage Support 9
4.2 Polar Crane Modification (10 CFR Part 21 Report) 9
4.3 Turbine Generator Protection System Modification 10

5.0 PLANT SUPPORT 11
5.1 Radiological Controls 11
5.2 Security 12
5.3 Housekeeping 12
5.4 Emergency Preparedness 12
5.4.1 Review of Emergency Plan (the Plan) and Emergency Plan Implementing Procedures (EPIPs) . 12

6.0 SAFETY ASSESSMENT/QUALITY VERIFICATION 12
6.1 Review of Periodic Reports 12
6.2 Station Nuclear Safety Committee Meetings 12

7.0 MANAGEMENT MEETINGS 13
7.1 Inspections Conducted by Region Based Inspectors 13
7.2 NRC Management Visits 13

DETAILS

1.0 SUMMARY OF FACILITY ACTIVITIES

At the start of the inspection period, the plant was operating at 89% power for fuel optimization and to minimize the potential for primary-to-secondary leakage. On January 17, a turbine trip occurred due to low auto-stop oil pressure. Reactor power was above the turbine/reactor trip interlock setpoint of 20% power and therefore the turbine trip caused a reactor trip. On January 19, a reactor startup was conducted and the main turbine generator was synchronized to the grid. During power ascension, with the plant at 16% power the turbine tripped due to high steam generator level. The reactor did not trip because reactor power was below the turbine/reactor trip interlock setpoint. The plant was stabilized at 6% power, and subsequently returned to 89% power. On February 4, the plant was shutdown to begin a scheduled 87 day refueling outage. The plant was in cold shutdown on February 5. The plant was drained to the reactor vessel flange level and depressurized on February 8.

2.0 PLANT OPERATIONS

2.1 Operational Safety Verification

The inspectors observed plant operation and verified that the facility was operated safely and in accordance with Con Edison procedures and regulatory requirements. Regular tours were conducted of the following plant areas:

- control room
- primary auxiliary building
- radiological control point
- electrical switchgear rooms
- auxiliary feedwater pump room
- security access point
- protected area fence
- intake structure
- diesel generator room
- turbine building

Control room instruments and plant computer indications were observed for correlation between channels and for conformance with technical specification (TS) requirements. Operability of engineered safety features, other safety-related systems and onsite and offsite power sources was verified. The inspectors observed various alarm conditions and confirmed that operator response was in accordance with plant operating procedures. Routine operations surveillance testing was also observed. Compliance with TS and implementation of appropriate action statements for equipment out of service were inspected. Plant radiation monitoring system indications were reviewed for unexpected changes. Logs and records were reviewed to ascertain that entries were accurate and identified equipment status or deficiencies. These records included operating logs, turnover sheets, system safety tags, and the temporary modification book. Plant housekeeping controls were monitored, including control and storage of flammable material and other potential safety hazards. The inspectors also examined the condition of various fire protection and meteorological monitoring systems. Control room and shift

manning were compared to regulatory requirements and portions of shift turnovers were observed. The inspectors found that control room access was properly controlled and that a professional atmosphere was maintained.

In addition to normal utility working hours, the review of plant operations was routinely conducted during portions of backshifts (evening shifts) and deep backshifts (weekend and midnight shifts). Operators were alert and displayed no signs of inattention to duty or fatigue.

The inspectors used probabilistic risk assessment (PRA)-based inspection guidance in performing system walkdowns. This guidance helped focus NRC inspection resources toward risk significant items. During this inspection period, walkdowns were performed on the auxiliary feedwater system, safety injection system, service water, residual heat removal and emergency diesel generator systems. The systems were found to be in a condition to support operability.

An acceptable level of performance during the inspection tours detailed above was observed.

2.2 Followup of Events Occurring During the Inspection Period

During the inspection period, the inspectors provided onsite coverage and followup of unplanned events. Plant parameters, performance of safety systems, and licensee actions were reviewed. The inspectors confirmed that the required notifications were made to the NRC. During event followup, the inspectors reviewed the corresponding documentation, including the event details, root causes, and corrective actions taken to prevent recurrence.

2.2.1 Turbine/Reactor Trip

On January 17, at 12:39 a.m. a turbine trip occurred due to low control (auto-stop) oil pressure. Reactor power was above the turbine/reactor trip interlock setpoint of 20% power and therefore the turbine trip caused a reactor trip. All automatic actions occurred as expected and the plant responded to the transient as expected with the exception of a greater than expected cooldown of the reactor coolant system. The cause of the greater than expected plant cooldown appears to be the slower than expected closure of the high pressure steam dump valves. Manual operator action was taken to start a second charging pump and secure main feedwater to the steam generators to restore reactor coolant system pressure, pressurizer level and temperature. Con Edison intends to review and adjust as necessary the high pressure steam dump control setting.

The cause of the low autostop oil pressure was determined to be a solenoid valve which had a degraded pilot seat. This valve is an Automatic Switch Co. (ASCO) pilot assisted solenoid valve and is normally de-energized closed. On a demand trip signal, this valve energizes open and dumps auto-stop oil, causing the auto-stop oil pressure trip to effect a main turbine trip. The solenoid inadvertently opened when degradation of the cast urethane seat for the pilot orifice permitted sufficient oil leakage to inadvertently open the valve. The degradation of the urethane seat resembled a concavity,

hemispherical in shape, about 1 millimeter in diameter just off center of the seat concavity for the pilot orifice. The failed solenoid valve was sent to the manufacturer for analysis. The failure analysis report indicated that the degradation of the urethane seat was attributed to the hydrolysis of the cast urethane seat. Hydrolysis is the chemical decomposition of a substance when it interacts with moisture. However in this case, the degradation occurred in a relatively moisture free environment. Subsequent investigation has identified similar problems with this cast urethane seat at other utilities and industries and that the pilot seat material for this kind of valve has been changed to teflon. Con Edison replaced the two affected valves with ASCo solenoid valves that had teflon seats.

Following the reactor trip, the digital metal impact monitoring system (DMIMS) recorded indications from the secondary side of steam generators 23 and 24. No impact signals were recorded on the primary side. Based on vendor analysis of the tapes, the DMIMS indicated that the loose objects could have an estimated weight of 0.25 to 0.5 pounds. The signals continued while the unit was at hot shutdown. An assessment of steam generator tube integrity was developed. The analysis determined that the wear time for steam generator loose parts of this magnitude have been in excess of one fuel cycle. The inspectors concluded that the DMIMS signal was appropriately addressed by Con Edison.

Upon completion of a post trip review and a further review by the station nuclear safety committee, a reactor restart was initiated.

On January 19, during startup with the unit operating at 16% power, a turbine trip occurred due to high steam generator level. This caused an automatic feedwater isolation which included the automatic actuation of auxiliary feedwater pumps. The high steam generator level occurred during operator manipulation of the feedwater control system in manual. The reactor operator was controlling steam generator level manually using the low flow bypass feedwater regulating valves getting ready to transfer to the main feedwater regulating valves. His attempt to decrease feedwater flow in response to increasing steam generator water levels was not accomplished in sufficient time to preclude reaching the trip setpoint. Con Edison's corrective actions to this event included additional training to stress attention-to-detail.

The inspectors determined that the operator actions during the trip recovery were good. The cause of the trip, the DMIMS alarm and the greater than anticipated cooldown were thoroughly reviewed by Con Edison.

2.2.2 Inadvertent Draindown of Spent Fuel Pool

On January 20, at approximately 1:30 a.m., Con Edison personnel applied a tagout which inadvertently isolated the station air (SA) header to the fuel handling building. This resulted in a loss of the air supply to the inflatable seal around the transfer canal gate. As the seal deflated, water leaked around the gate to the normally dry transfer canal, causing the spent fuel pool level to decrease approximately 3 feet from its normal level. An equilibrium level between the transfer canal and spent fuel pool was reached. In this decreased level condition, the water level was 20 feet above the spent

fuel assemblies. There were no abnormal radiation levels observed as a result of this event. Con Edison took action to restore the spent fuel pool water level.

The first indication of a level decrease was the spent fuel pool low level alarm which was received shortly after the tagout was applied. Con Edison operators identified the cause and took prompt actions to restore the air supply to the inflatable seal and add primary grade water to the pool to restore level. After adding makeup water for about 2.5 hours, the addition of water was stopped to allow sampling for boron concentrations in the spent fuel pool. The Station Nuclear Safety Committee was convened to evaluate the condition and determine the best way to restore fuel pool level. It was decided to stop diluting the pool and to pump the water back into the spent fuel pool using portable pumps. The water level was restored to the normal level about 12 hours after the initial low spent fuel pool water level alarm was received. Technical Specification (TS) 3.8.C.2 requires the spent fuel storage pit (SFSP) water level be maintained at an elevation of at least 93'2". If water level drops below that valve, the TS require water level be restored within its limit within 4 hours. TS 3.8.E states that the requirements of TS 3.0.1 do not apply. The inspector noted the licensee carefully considered options for restoring water level, including the possible dilution of the spent fuel pool water with demineralized water and the need to maintain a minimum refueling water storage tank level. The inspector concluded that since the SFSP water level had equalized with the transfer canal and the inflatable seal had been restored, the decision to use portable pumps was appropriate.

The fuel handling building air header was isolated when the service air header in the turbine building was tagged out in preparation for condenser replacement scheduled during the outage. The isolation was intended to be downstream of the branch connection to the fuel handling building. The plant drawings were consulted and the appropriate valve identified during the tagout preparation. The tag was placed on the valve as required by the tagout, however, the valve was mislabelled. The valve is physically located such that it would be difficult for an operator to visually determine if the isolation was providing its intended function. The identification label for the valve downstream of the branch connection was placed on the valve upstream of the branch connection during the mid-1980s. Prior to the mislabeling which caused this event, both valves were labeled with the same designation, SA-10. When the newer labels were installed which differentiated between the two valves, a personnel error occurred at the time of the label application resulting in the interchange of the two labels. These valves are normally maintained open to provide station air service to the plant. The gate seal in the fuel storage building was the only continuous service application of this system affected.

Immediate corrective actions to identify and correct the deflated seal were timely. Con Edison took a deliberate and appropriate approach to restore level. A temporary modification has been installed to provide Nitrogen backup to the air supply to the transfer canal gate. Additional corrective actions are pending. A licensee event report is scheduled to be written.

This issue is unresolved pending review of Con Edison actions taken in response to problems with inflatable seals identified in past NRC Bulletins and Information Notices (UNR 95-02-01).

2.2.3 Failure of Residual Heat Removal (RHR) Pump to Manually Start

On February 4, 1995, an attempt to manually start 21 RHR Pump to obtain a chemistry sample was unsuccessful. The breaker was inspected and, as no abnormal conditions were identified, a second attempt to start the pump was made and was successful. The plant was in cold shutdown during the entire event.

The primary function of the residual heat removal system is to transfer heat energy from the core and reactor coolant system during plant shutdown and refueling operations. The RHR system can be used to transfer refueling water between the refueling cavity and the refueling water storage tank at the beginning and end of refueling conditions. The system is employed in conjunction with the safety injection system for emergency core cooling in the event of a loss-of-coolant accident. Following the injection phase, the loop is used in part to remove residual heat from the reactor core and containment vessel by recirculation of the containment sump water through the residual heat exchanger, in the event the safety injection recirculation pumps are unavailable. The suction to the RHR pumps can be either one of three choices; from the refueling water storage tank during the injection phase or filling up the refueling cavity; from the reactor coolant system loop 22 hot leg during shutdown operations; or, from the containment sump during the recirculation phase of an accident.

It should be noted that 22 RHR Pump operated as required and would have been available in the event of an accident. Even though upon a safety injection signal both RHR pumps are expected to start, only one train is required to operate in the event of an accident.

The NRC reviewed maintenance procedure "Westinghouse, Model DB-50 - Air Circuit Breaker", BRK-B-002-A, Revision 6. which was performed on the 21 RHR pump breaker in August 1994. This procedure provides instructions for the inspection, testing, and maintenance of DB-50 circuit breakers. It also includes the disassembly, cleaning, inspection, testing and reassembly. Documentation indicated that no components were replaced and that the breaker was found in good condition. In addition, no problems were found with the breaker operating history. The pump had been tested satisfactorily several weeks before.

The cause of the failure of 21 RHR pump to start on an initial attempt is not readily apparent. Con Edison's actions regarding technical specifications, and NRC notifications were timely. Work order No. 9575775 was written to investigate the breaker and control room switch. The investigation is continuing. A modification is scheduled to be completed this outage which is designed to improve the reliability of these types of breakers.

2.2.4 Containment Ventilation Isolations

On February 4, a containment ventilation isolation occurred due to a high radiation on the plant vent radiogas radiation monitor. This was considered an automatic operation of the engineering safeguards features. The high radiation was caused by venting the pressurizer relief tank to the purge exhaust system. The same event occurred 3 hours later.

The inspectors noted that the sample taken to calculate the setpoint for the radiation monitor was a liquid sample of the reactor coolant and was not representative of the activity level in the pressurizer relief tank. After the first attempt, the second attempt was made without an additional sample being obtained. Although the setpoint for the radiation monitor was exceeded due to the actual release, the levels released were a fraction of that permitted and therefore there were no adverse radiological effects. Con Edison's corrective actions included revising procedures applicable to release calculations and additional training.

Con Edison reported the isolation as a 4 hour non emergency in accordance with 10 CFR 50.72 (D)(2)(i) and a licensee event report (LER) is scheduled to be written. Additional followup will be provided as a result of the review of the LER.

3.0 MAINTENANCE/SURVEILLANCE

3.1 Maintenance Observations

Maintenance activities were observed during this inspection period on safety-related activities to ascertain that these activities were being conducted in accordance with approved procedures, technical specifications and appropriate industrial codes and standards. Observation of activities and review of records included verifying required administrative authorizations and tagouts were obtained, procedures were adequate, certified parts and materials were used, test equipment was calibrated, radiological requirements were implemented, system prints and wire removal documentation were used and quality control hold points were established. Maintenance activities observed included:

Various	Reactor Head Disassembly
93-67686	Weld Channel and Containment Penetration Pressurization System
94-50626	Reactor Coolant System Decontamination Connection
94-71250	Waste Disposal System Ultrasonic Level

The work observed was performed safely and in accordance with proper procedures. The NRC noted that an appropriate level of supervisory attention was given to the work depending on its priority and difficulty.

3.1.2 Foreign Material Exclusion (FME)

During a tour of the primary auxiliary building (PAB), the inspector observed portions of the modification work on the weld channel and containment penetration pressurization system (WCCPPS). The work was being performed under work order NP93-67686. This modification was implemented to supply the loading signal for the nitrogen backup reducing valves from the nitrogen supply. The loading signal had been supplied via temporary tubing from the backup nitrogen supply after Con Edison had determined that the normal signal provided from the air header would not be available following system activation.

The modification involved tapping off the nitrogen supply piping upstream of the regulator and connecting tubing from that point to the dome of the reducer. The NRC observed that a hole had been bored in the side of the nitrogen supply line without a method to prevent debris from entering the system. This matter was discussed with a quality control (QC) representative who documented the condition on an Open Item Report (OIR). Subsequent boroscopic examination of the pipe interior revealed debris in the pipe from the drilling operation. The debris was removed prior to completing the work. Corrective actions for the OIR included inspecting and cleaning of the other line which had been previously completed. At the end of the inspection period, the OIR remained open pending completion of longer term corrective actions.

The inspector determined that poor FME control resulted in debris inside the WCCPS and, if the debris was not removed, it had the potential to degrade the system. Con Edison's immediate corrective actions, including inspection of the previously completed installation, were appropriate. The inspector determined that this problem with FME was an isolated issue from an otherwise good FME program.

3.1.3 Degraded Containment Floor Coating

On February 8, during a containment walkdown, Con Edison noted that portions of the containment floor coating, which was installed in 1993 were cracked and lifted. Initial estimates were that 30 square feet were degraded. The condition was reported to the NRC as outside design basis. The concern is that, in a post accident environment, the degraded floor coating could potentially foul the recirculation and containment sumps.

An analysis is being performed to address the effects that the paint debris would have had on the operability of the recirculation and containment sumps during a loss of coolant accident assuming total failure of the paint applied. The preliminary results of the analysis indicated that some of the paint debris from the immediate vicinity of the sumps may reach the sump, however, the debris would not reach the fine screen. Therefore, Con Edison considered that the operability of the sumps was not jeopardized during the last cycle. During spray recirculation the water is screened through a 0.25 inch mesh before leaving the containment sump. The containment spray nozzles have a 0.375 inch diameter orifice and therefore should not be subject to clogging by

particles ingested from the containment sump. Evaluation of the containment floor coating and effects on recirculation is continuing.

The coating is an epoxy self-priming surfacing enamel manufactured by Keeler and Long. Con Edison purchased the coating as Class A material and applied the coating during the 1993 outage. A review by Con Edison of the previous application process identified several work control issues.

> Although the crew that performed the painting was trained by the paint vendor, the training provided was for using Keeler and Long 5000 series paint not for the 4500 series paint which was used for painting the floor. Although some of the basic principles still apply, the 5000 series is self leveling and the 4500 series is self priming therefore the different method of application may have contributed to the coating failure.
>
> It was noted that quality control was not involved in the application of the coating.
>
> Although guidance was provided to the painters, job specific formal procedures were not developed.

The inspectors determined the containment floor coating failed because of improper application, primarily attributed to poor application and possibly due to poor surface preparation. It appears that the importance of proper coating application was not fully recognized by Con Edison. Because of this, the application of paint on the containment floor was not properly controlled. Con Edison acknowledged these findings and intends to reapply a protective coating during this outage.

3.2 Surveillance Observations

Surveillance activities observed and reviewed emphasized inspection of safety-related activities. Observations of activities and review of records included verifying required administrative approval was obtained, procedural precautions and limitations were observed, review of test data was accurate and timely, surveillances conformed to technical specifications, calibrated test equipment was used, radiological controls were observed, and required surveillance frequencies were met. Surveillance activities observed included:

PT-Q-23	Auxiliary Boiler Feedwater Pump
PT-R13	Safety Injection System Initiation Test
PT-R12	Residual Heat Removal System
PT-Q13	Containment Isolation Valves
PT-R60	Fan Cooler Units
PT-Q40A	Hydrogen Recombiner

PT-Q28 Residual Heat Removal System

Surveillance testing was performed safely and in accordance with proper procedures. Inspectors noted that an appropriate level of supervisory attention was given to the testing depending on its sensitivity and difficulty.

4.0 ENGINEERING

4.1 Nuclear Power Engineering Organization

On January 30, the inspectors visited the corporate office and reviewed several aspects of Con Edison's nuclear power engineering organization including the 1995 refueling outage coverage, 1995 refueling outage projects, drawing control process and engineering reorganization.

4.1.1 Nuclear Power Engineering Reorganization

Con Edison's central engineering department was reorganized in the fourth quarter of 1994. Prior to the change, the central engineering department was organized under mechanical, electrical, civil and systems engineering and a design/drafting department with counterparts to support each engineering discipline. These departments would support the four major operating groups, one of which is nuclear power engineering. The reorganization resulted in nuclear power engineering being self sufficient. Nuclear power engineering was made self sufficient by transferring personnel from other engineering disciplines. Con Edison intends to have nuclear power engineering report to the Vice President of Nuclear Power in the future. Con Edison anticipates several positive aspects including development of more ownership and increased accountability as a result of focus on Indian Point. There were no drawbacks expressed by Con Edison as a result of the reorganization.

4.1.2 Nuclear Power Engineering Outage Support

There are approximately 65 modifications scheduled to be performed during the 1995 refueling outage. Engineering intends to provide extensive support and has established logistics at Indian Point to avail in this effort.

The non-routine programs to be completed include extensive steam generator inspection, installation of nozzle dams for steam generators, motor operated valve modifications, full system decontamination, cable separation program walkdown and modifications, and guide tube support pin replacement.

The NRC reviewed Con Edison's engineering coverage plan for the refueling outage and considered that the plan was well developed. The nuclear power engineering review was considered to be informative and productive.

4.2 Polar Crane Modification (10 CFR Part 21 Report)

On March 2, 1994, the Whiting Corporation, of Harvey, Illinois, reported to NRC under Title 10 of the Code of Federal Regulations, Part 21 (10 CFR 21), that certain heavy lift cranes in use at nuclear power plants would be

overstressed when performing lifts at design capacity. This overstress condition could cause failure of the crane.

Con Edison's immediate actions were to restrict operation of the polar crane to the auxiliary hoist only. They also contracted with a qualified vendor to perform a stress analysis of the polar crane to determine its suitability for use at design capacity. This analysis determined that the design lift capacity of 175 tons could be restored by replacing the bolts in the upper sheave nest and reinforcing the main hoist reduction gear pedestal. Restoration of the 450 ton construction lift capacity was not deemed practical. Based on the vendor calculations, Con Edison engineering developed a modification to replace the turned bolts in the main hoist upper sheave nest with high strength structural bolts and add a reinforcing plate to the main hoist external reduction gear pedestal.

During preparation for the modification, Con Edison contacted several other facilities which had completed the upgrades on their cranes, to obtain information on the time needed to replace the bolts, and whether the bolt holes needed dressing to install the new bolts. Due to the wide variation in experience, Con Edison prepared a procedure to replace a small but representative sample of the bolts to assess conditions at Indian Point 2. No difficulties were encountered.

The bolting replacement was conducted with the plant operating in order to minimize outage impact. The review of the work conducted by the Station Nuclear Safety Committee (SNSC) included not only the potential impact on the nuclear systems, but also personnel safety issues, and actions to be taken in the event of problems with the work. The work platform was positioned and restrained to preclude tools and equipment being dropped on nuclear safety related components, and all material was secured to prevent transport to the containment sumps. The bolts were replaced during plant operation prior to the outage. The reinforcement of the reduction gear pedestal was completed after plant shutdown, restoring the 175 ton nameplate capacity of the polar crane.

The inspector concluded that Con Edison's actions associated with the polar crane modification, including safety considerations, were considered excellent.

4.3 Turbine Generator Protection System Modification

During the 1993 refueling outage, Con Edison made a modification to the turbine generator protection system to address the turbine overspeed incident which occurred at the Salem Nuclear Plant. The modification relocated the turbine backup trip solenoid valve to allow the turbine generator protection system features to occur when the overspeed test lever is in the test position. Additionally, the direct trip of generator from the thrust bearing wear trip was removed. In short, the relocation of the solenoid valve was to ensure tripping of the auto-stop oil for all trip conditions including test periods.

A review of the original modification procedure (Mod No. SCE-92-07757-K) and drawings show that the modification was correctly implemented.

5.0 PLANT SUPPORT

5.1 Radiological Controls

Radiological protection activities were observed on a periodic basis. The activities observed included radiological work practices, radiation surveys, and compliance with radiological procedures and requirements.

On February 7, a security officer entered a posted high radiation area without a dose rate indicating device and without having the required health physics technician present for entry as required. A health physics technician in the area noted the guards presence and recognized the improper entry. The radiation work permit (RWP) required a merlin gerlin (electronic dosimetry) for entry into a high radiation area and the posted sign required a health physicist to be present. Personal dosimetry indicated that the security officer did not receive any dose.

Radiation surveys of the piping pen in the primary auxiliary building indicated that there were no fields greater than 100 millirem/hour and that the general area dose rate was 34 millirem/hour. The area is not normally posted as a high radiation area but was temporarily posted because of a planned evolution. A crud burst evolution, which had caused the radiation dose rate to increase in several areas, had recently been completed and health physics personnel were in the process of deposting areas. Although the area was physically not a high radiation area, it was posted as such.

Con Edison determined that the security officer may not have fully understood the requirements of his radiation work permit and he did not seek health physics assistance. He also failed to comply with the radiological posting requirements.

Con Edison's corrective actions included issuing electronic dosimeters to all personnel entering the radiological controlled area, including security. Previously, security force personnel were issued a pocket dosimeter and were required to obtain electronic dosimetry if necessary. Additional training was conducted to stress radiation worker practices and requirements and the radiation worker training program was reviewed to determine if it was adequate. The inspector noted that lesson objectives for radiation worker training require that a worker know when electronic dosimetry is required to be worn and includes practical factors. All corrective actions have been completed.

Technical specification 6.12, High Radiation Area, requires in part that the individual shall be provided a radiation monitoring device which continuously indicates the radiation exposure rate in that area for entry into a high radiation area. Con Edison identified the violation and has completed acceptable corrective action. In addition, the guard did not actually receive any dose. Therefore the guard's improper entry into a high radiation area is

a non-cited violation in accordance with Section VII.B of the NRC Enforcement Policy.

5.2 Security

Implementation of portions of the security plan was observed. Areas observed included access point search equipment operation, condition of physical barriers, site access control, security force staffing, and response to system alarms and degraded conditions. These areas of program implementation were determined to be adequate. No unacceptable conditions were identified.

5.3 Housekeeping

The inspectors assessed the control of plant housekeeping in safety related areas. They also examined these areas for potential missile hazards such as gas cylinders that could damage safety significant equipment. Overall plant housekeeping was good.

5.4 Emergency Preparedness

5.4.1 Review of Emergency Plan (the Plan) and Emergency Plan Implementing Procedures (EPIPs)

An NRC Region I in-office review of revisions to the Plan and EPIPs was completed. A list of the procedures and revisions reviewed are included in Attachment 1. The NRC concluded that changes made were acceptable and did not decrease the effectiveness of the emergency preparedness program.

6.0 SAFETY ASSESSMENT/QUALITY VERIFICATION

6.1 Review of Periodic Reports

The inspector routinely reviews periodic reports submitted pursuant to technical specifications. This review verifies that the reported information is valid and includes NRC required data. During this inspection, the following report was reviewed:

Monthly Operating Report for December, 1994

No deficiencies were identified.

6.2 Station Nuclear Safety Committee Meetings

Several Station Nuclear Safety Committee (SNSC) meetings were attended during this inspection period. The committee composition and quorum requirements specified in TS 6.5.1 were satisfied. The meeting agendas included a review of facility operations to detect potential nuclear safety hazards and a review of procedural changes. A good questioning attitude and safety perspective from the committee was noted. Overall, the level of review and member participation was satisfactory to fulfill the SNSC responsibilities.

7.0 MANAGEMENT MEETINGS

Periodic meetings were held with station management to discuss inspection findings. Following the inspection, an exit meeting was held to discuss the inspection findings and observations. Con Edison did not object to the findings or observations discussed at the exit meeting. No proprietary information was covered within the scope of the inspection report. No written material regarding the inspection findings was given to the Con Edison during the inspection period.

7.1 Inspections Conducted by Region Based Inspectors

Date	Subject	Inspection No.	Inspector
1/23 - 27	Digital Auxiliary Feedwater Pump Controller	95-01	J. Calvert
1/30 - 2/3	Engineering	95-03	P. Patniak

7.2 NRC Management Visits

Date	Visits
1/26 - 27	W. Ruland, Chief, Electronic Section, DRS
1/30	F. Williams, Project Manager, NRR

ATTACHMENT

Emergency Plan and EPIPs REVIEWED

Procedure Number	Procedure Title	Revision/Date(s)
	Emergency Plan	8/31/94
	Emergency Action Levels	8/31/94
IP-1001	Mobilization of Onsite Emergency Organization	7
IP-1004	Post Accident Offsite Environmental Surveys, Sampling and Counting	4
IP-1023	Operational Support Center	9
IP-1032	Tornado Emergency	4
IP-1037	Obtaining Offsite Reuter-Stokes Monitor Data	6
IP-1040	Relocation of Personnel Dosimetry Facilities	4
IP-1041	Use of the Triton for Monitoring Radiogas	4
IP-1044	Radiation Protection Program During Emergencies	4
IP-1047	Obtaining Offsite Exposure Rates from MIDAS using a Data Terminal	5
IP-1048	De-escalation of Emergency and Initiation of Recovery	5
Appendix A	Emergency Roster	6/1/94 & 9/1/94
Appendix B	Con Edison Medical Department, Consultants and Agencies	6/1/94 & 9/1/94
Appendix C	Facility, Accountability, Assembly and Met Data Phone Numbers	6/1/94 & 9/1/94