## U.S. NUCLEAR REGULATORY COMMISSION

Report No.	50-247/85-30	REGION I	DCS 50247-851212 851231 860113
Docket No.	50-247		
License No.	DPR-26	Priority <u></u>	Category <u>C</u>
Licensee:	<u>Consolidated Edison Company of New York, Inc.</u> <u>4 Irving Place</u> New York, New York 10003		
Facility Name: Indian Point Nuclear Generating Station, Unit 2			
Inspection at: <u>Buchanan, New York</u>			
Inspection conducted: December 1, 1985 - January 15, 1986			
Inspectors:	L. Rossbac P. Kellev	ch, Senior Resident Resident Inspecto	Inspector
Reviewed by:	D. Limpot Reactor P	, Project Engineer	/2y/86
Approved by:	Leif North Reactor Pr	Dolm, Chief Pojects Section 2B,	DRP 1/28/86

Inspection Summary: Inspection on December 1, 1985 - January 15, 1986 (Report No. 50-247/85-30

Areas Inspected: This inspection report includes routine daily inspections, as well as unscheduled backshift inspections of onsite activities, and includes the following areas: Licensee action on previously identified inspection findings; operational safety verification; maintenance; surveillance; review of monthly report; ESF system walkdown; environmental qualification, and management meeting. The inspection involved 217 hours by the resident inspectors.

Results: No violations were identified as a result of this inspection.

8602030083 860129 PDR ADOCK 05000247

PDR

# DETAILS

### 1. Persons Contacted

Within this report period, interviews and discussions were conducted with members of the licensee management and staff to obtain the necessary information pertinent to the subjects being inspected.

# 2. Licensee Action on Previously Identified Inspection Findings

(Open) Violation (247/84-21-02) Transient or operational cycling records were not maintained. Several presentations on this subject have been made to the licensee by consultants and contractors. The licensee is planning to record transient or cycling data important to plant life extension rather than just the minimum amount of data that would be required for compliance with this record keeping requirement. A purchase order has been written to purchase this service, but the contract has not been placed.

## 3. Operational Safety Verification

- a. Documents Reviewed:
  - Selected Operators' Logs
  - Senior Watch Supervisors (SWS) Log
  - Jumper Log
  - Radioactive Waste Release Permits (liquid & gaseous)
  - Selected Radiation Work Permits (RWP's)
  - Selected Chemistry Logs
  - Selected Tagouts
- b. The inspectors conducted routine entries into the protected area of the plant, including the control room, the fuel storage building and PAB. During the inspection activities, discussions were held with operators, technicians (HP & I&C), mechanics, foremen, supervisors, and plant management. The purpose of the inspection was to affirm the licensee's commitments and compliance with 10 CFR, Technical Specifications, and Administrative Procedures.
  - (1) On a daily basis, particular attention was directed in the following areas:
    - Instrumentation and recorder traces for abnormalities;
    - Adherence to LCO's directly observable from the control room;
    - Proper control room and shift manning and access control;
    - Verification of the status of control room annunciators that are in alarm;



- Proper use of procedures;
- Review of logs to obtain plant conditions; and,
- Verification of surveillance testing for timely completion.
- (2) On a weekly basis the inspectors confirmed the operability of a selected ESF train. The confirmation involved performing modified system walkdowns using guidance developed through the Probabilistic Risk Assessment Applications Program for inspections at Indian Point 2. This program was first documented in Inspection Report 85-10. The modified system walkdowns consisted of verifying the correct status or lineup of components on system check-off lists that have been simplified to contain-only the most risk significant items. In addition to verifying component lineup, the inspectors observed instrumentation and major components for operability.

Walkdowns were performed on the following systems: Containment Fan Cooling System, Residual Heat Removal System, Accumulators, Auxiliary Feedwater and Safety Injection System. All of these systems were found to be properly lined up and operable.

- (3) On a biweekly basis, the inspectors:
  - Verified the correct application of a tagout to a safety-related system;
  - Observed a shift turnover;
  - Reviewed the sampling program including the liquid and gaseous effluents;
  - Verified that radiation protection and controls were properly established;
  - Verified that the physical security plan was being implemented;
  - Reviewed licensee-identified problem areas; and,
  - Verified selected portions of containment isolation lineup.
- c. Inspector Comments/Findings:
  - 1. Operational Events

On December 12 at 6:27 a.m., the unit tripped from 100% power due to a failed reactor coolant flow bistable in loop #21.

Since there already was a flow bistable in the "tripped" position in loop #21 due to a faulty flow instrument, the two bistables combined to form the two out of three reactor protection system logic needed to automatically trip the plant. All safety systems functioned normally in response to the trip. Upon investigation, the licensee determined that a capacitor had failed in the transformer that supplies the bistable. This, in turn, caused the transformer to fail and the bistable to fail. The bistable that failed was model number 635-AR-OAHA Special manufactured by Foxboro. After repairs, the plant was taken critical on December 12 at 11:30 p.m. and tied to the grid on December 13 at 7:25 a.m.

On December 12 at 8:00 a.m., while the unit was in hot shutdown, an operator attempted to clear a 345KV relay alarm by tapping it. This caused an adjacent relay to open and trip offsite power supply breakers deenergizing all 6.9KV and 480V buses. The diesel generators started and reenergized the 480V safeguards buses. A half hour later, offsite power was restored by closing the offsite power supply breakers. The licensee has instructed the operators not to tap on the relays and to call in I&C staff to trouble shoot relay alarm problems. During the recovery, Auxiliary Feedwater (AFW) pump #23 tripped several times due to an open coil in the low suction flow relay. Both AFW pumps 21 and 22 were operable and supplied adequate feedwater. A failure analysis is being performed on the low suction flow relay.

On December 31 at 1:50 p.m., the reactor tripped on a low pressurizer pressure signal due to a failed open pressurizer spray valve. The low pressurizer pressure reactor trip is set for 1872 psig. The reactor tripped during this event at approximately 2000 psig due to the lead/lag circuitry and the high rate of change of pressure decrease. To prevent a further decrease in pressure, two additional charging pumps were started. All pressurizer heaters were energized, and eventually reactor coolant pump #24 was secured once the failed open spray valve was identified. Reactor coolant loop #24 supplies the spray line with the failed open spray valve. Attempts to shut the spray valve from the control room were unsatisfactory. The licensee entered the containment and isolated the faulty spray line. During this entry, the operators noticed that the spray valve was not fully shut. The spray valve is a Fisher F130, SS-84 diaphragm actuated rotating control valve. Since the trip. the licensee has stroked the valve and noticed the valve stem moves in a jerky fashion. The Fisher spray valve when fully open passes four times as much flow as the Copes Vulcan Globe Valve which is installed in the plant's other spray line. The licensee has determined that other plants have had trouble with the same type of valve. During the upcoming refueling outage, the licensee will continue to investigate the spray valve problem.

On January 13, 1986 at 8:28 p.m., the reactor tripped from 94% power due to the loss of #21 Main Boiler Feed Pump (MBFP) which resulted in a lo-lo level reactor trip in #24 steam generator. The cause of the loss of #21 MBFP is still under investigation by the licensee. The MBFP's in the past have given the licensee trouble due to control oil problems. The plant was scheduled to enter a refueling outage at midnight January 14. The licensee decided to enter the outage one day early and will continue to investigate the cause of the MBFP tripping. During the refueling outage, the licensee plans to replace the hydraulic speed control system with an electronic system which has been shown at other sites to increase the reliability of the MBFP's.

At approximately 8:00 p.m. on January 15, 1986, the unit was placed in cold shutdown for the refueling and maintenance outage. The outage is expected to last approximately sixty days.

## 2. Observations During Plant Tours

During system walkdowns, the inspectors noticed that many valves were missing identification tags. The inspectors discussed this with the licensee who stated that a large number of tags have been ordered and will be installed during the outage.

While touring the plant, the inspectors observed that some locally posted radiological survey forms did not specify protective clothing or dosimetry requirements. Also, the latest issue of routine radiation work permits were not in use at the 80' Primary Auxiliary Building Health Physics desk. The licensee promptly updated these documents.

At the end of the previous inspection period, the inspectors identified a potentially degraded fire barrier cable penetration. The licensee's review determined that it was degraded and a fire watch was posted until it was repaired. This penetration would have been inspected by the licensee during the refueling outage.

No violations were identified.

### 4. Maintenance

The inspector reviewed completed and ongoing work packages as well as witnessing maintenance activities in progress. In the course of the inspection, the inspector verified that:

Proper QA/QC hold points were observed;

- Radiological controls for worker protection were followed;

- The equipment was properly tagged out;
- Approved procedures were used which were in compliance with the licensee's rules and regulations and Technical Specifications; and,
- Proper fire prevention controls were implemented.

The following activities were reviewed:

- WO 85-23123 Repair High Pressure Fire Main Header Pinhole Leaks
- WO 85-24127 Repair #22 Hot Penetration Blower
- WO 85-23030 Perform Preventive Maintenance on #21 Monitor Tank Motor
- WO 85-20819 Annual Inspection and Overhaul for Instrument Air Compressor #21
- WO 85-23809 Emergency Diesel Generator #21 Quarterly Maintenance
- WO 85-21699 Repair Fire Door to Battery Room #23

No violations were identified.

# 5. <u>Surveillance</u>

The inspector reviewed completed, as well as in progress surveillances. The inspector verified that:

- The surveillances were performed using approved procedures in accordance with the licensee's rules and regulations and Technical Specifications;
- Proper radiological precautions were taken;
- The test equipment was properly calibrated and adequate for the measurements;
- System status was returned to the same status as prior to the surveillance;
- The test was performed by qualified personnel; and,
- Procedure changes were properly documented.

The following surveillances were witnessed in part or reviewed for completeness:

PT-W3 Instrument Air System Test

PT-M25 Station Air Compressor Test



- PT-M30 Instrument Air System Test
- PT-Q8 Station Air Backup
- PT-Q18 Refueling Water Storage Tank Level Transmitter Calibration
- PT-Q3 City Water Supply Valves to Auxiliary Boiler Feedwater Pumps
- PT-V21 Low Head Injection Line Residual Heat Removal Check Valve Operability Test
- PT-V16 Accumulator, Low Head Injection Line and Residual Heat Removal Check Valve Leakage Test

No violations were identified.

The licensee is in the process of upgrading their surveillance procedures. Included in this upgrade are generic statement changes, format changes, key personnel notification changes, test interval changes and procedure clarifications. The licensee has contracted this upgrade program out to NUS and expects to have all the surveillance procedures upgraded by April, 1986.

# 6. <u>Review of Monthly Report</u>

The Monthly Operating Report for November, 1985 was reviewed. The review included an examination of significant occurrence reports to ascertain that the summary of operating experience was properly documented.

The inspector verified through record reviews and observations of maintenance in progress that:

- The corrective action was adequate for resolution of the identified item; and,
- The operating report included the requirements of TS 6.9.1.7 & 8.

The inspector has no further questions relating to the report.

## 7. ESF System Walkdown

The inspectors reviewed applicable checkoff lists, prints and Technical Specifications for the service water system. The inspectors also performed a walkdown of the service water system using a checkoff list developed through the Probabilistic Risk Assessment Applications Program for inspection at Indian Point 2. This program was first documented in Inspection Report 85-10. The service water system was found to be lined up so that it was capable of performing its safety function.

On January 9, 1986, while examining the service water strainer blowdown lineup, the inspectors noted that the motor operators had been removed from valves MOV-SWN-621, MOV-SWN-620, MOV-SWN-618, and MOV-SWN-617. These valves are listed in the service water checkoff list (COL 24.1, Rev. 1) as motor operated valves and are shown on the system drawing (CCR-9321-F-2722, dated 10/10/84). The inspectors will follow this item

to determine if the removal of these valve motor operators was done in accordance with the procedures the licensee has established to control such work. (85-30-01)

On January 8, 1986, while walking down the service water system, the inspectors noticed a pinhole leak in the 2-1/2 inch supply to the instrument air closed cooling water system near valve SWN-70. The inspectors informed the licensee who then tagged the weld for repair. Several other leaks have been discovered by the licensee at welds in small diameter service water piping and they have been repaired. It is believed that the leaks occur at welds because there is a gap in the cement lining at the welds and this exposes them to the river water. An engineering group is working on a long-term plan for repair of service water piping.

No violations were identified.

### 8. Environmental Qualification

The previous inspection report (85-26) discussed several components which the licensee identified that could not be verified to be environmentally qualified. During the current inspection period, the licensee completed the environmental qualification of the terminal blocks associated with one PORV. The other PORV was declared inoperable in accordance with Technical Specifications and will be qualified during the refueling outage.

The two flow switches associated with the Auxiliary Feedwater (AFW) pumps were sealed and qualified. However, the seal on one flow switch was later removed to allow maintenance of the flow switch. Following the maintenance it was resealed. While the sealant was curing, the licensee kept the AFW building roll-up door open to eliminate the possibility of the high-temperature environment for which the switch must be qualified. The inspectors reviewed the licensee's safety evaluation which concludes that the AFW flow switches when unsealed will peform their safety function in an accident environment if the roll-up door is open.

No violations were identified.

### 9. Management Meeting

On December 17, 1985 NRC management representatives from Region I and Headquarters met with licensee management representatives at Indian Point Unit 2. At this meeting the following were discussed: 1986 refueling outage preparations and plans; radiological control preparations for the refueling outage; maintenance related licensee event reports for the previous SALP period and root cause reviews; and, analysis and corrective actions for trips.

### 10. Exit Interview

At periodic intervals during the course of the inspection, meetings were held with senior facility management to discuss the inspection scope and findings. An exit interview was held with licensee management at the end of the reporting period. The licensee did not identify any 2.790 material.

...