

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

DCS 50247/840910  
840920

Report No. 50-247/84-30

Docket No. 50-247

License No. DPR-26                      Priority -- Category C

Licensee: Consolidated Edison Company of New York, Inc.  
4 Irving Place  
New York, New York 10003

Facility Name: Indian Point Nuclear Generating Station, Unit 2

Inspection at: Buchanan, New York

Inspection conducted: October 1-31, 1984

Inspectors:

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*W. J. Lazarus*                      11/20/84  
W. J. Lazarus, Project Engineer                      date

*Brent M. Hillman For*                      11/19/84  
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Approved by: *Leif J. Norrholm*                      11/20/84  
Leif Norrholm, Chief, Reactor Project                      date  
Section 2B, DPRP

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Inspection Summary:Inspection on October 1-31, 1984 (Report No. 50-247/84-30)

Areas Inspected: This inspection report includes routine daily inspections, as well as unscheduled backshift inspections of onsite activities, and includes the following areas: Operational safety verification; maintenance; surveillance; review of monthly report; independent verification of system lineup; followup on IE bulletin; and LER's. The inspection involved 83 hours by the resident inspector and 95 hours by visiting inspectors.

Results: This report highlights aspects of the unit startup and physics testing on the new core. The report also closed out previously identified items, bulletins, and LER's.

## 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

(Closed) Violation (247/81-05-05) Failure to provide a written order of succession contrary to technical specifications. The licensee committed to a written order of succession via a letter dated August 11, 1981. The resident inspector has verified implementation of the commitment.

(Closed) Unresolved Item (247/81-19-05) Inoperability of the loudspeaker system in the auxiliary feed pump room. The system failure was due to a broken lead. The wire was repaired and the speaker was returned to service. The inspector reviewed two surveillance tests dated 4/21/82 and 4/6/84 and verified the operability of the speaker.

(Closed) Violation (247/82-10-01) Failure to follow procedures. The licensee reviewed the two cases in question for lack of documentation and corrected the deficiencies. Corrective measures taken to prevent re-occurrence included retraining of personnel as documented by their response to the notice of violation dated July 30, 1982.

(Closed) Unresolved Item (247/83-02-04) Incomplete operator requalification program. The licensee committed via a letter dated February 25, 1983, to properly monitor operator requalification, to restrict the annual tolerance limit and make scheduling decisions at higher management levels. The inspector has reviewed the licensee's actions and verified implementation of these commitments.

(Closed) Inspector Follow Item (247/83-03-03) Revision of Calibration Procedure PC-R14 to include independent verification of containment pressure root valve position. Revision 5 to PC-R14 incorporated the required independent verification.

(Open) Unresolved Item (247/83-03-04) The NRC requested that the licensee review the Technical Specifications (TS) to ensure that any TS related gages not currently calibrated be identified and given priority in the licensee's calibration program. A task force started its review in June, 1983 and completed its work in November, 1983. The program is currently waiting for station personnel and engineering personnel to clarify the intent of certain TS's, to validate setpoints, and to provide the documentation required.

(Closed) Unresolved Item (247/83-07-01) Revision of cycle seven startup physics procedures. The licensee has revised the procedures to include provisions for sign-offs and identification of the data collected.

(Closed) Inspector Follow Item (247/83-04-06) Control of TEAD's. The inspector reviewed the Technical Engineering Administrative Directives (TEAD) Book maintained by the Chief Technical Engineer and verified that the TEAD's are maintained in accordance with TEAD-1, "Administrative Directive Policy." The inspector had no further questions on this item.

(Closed) Unresolved Item (247/83-04-05) Control of extra file copies of procedures. The inspector reviewed OAD-7, "Operating Procedure Development and Control," Rev. 10 and Temporary Procedure Change 83-80, which specifies that the extra copies of procedures filed in the control room file cabinets are, in fact, controlled copies and are treated accordingly. The inspector had no further questions on this item.

(Closed) Unresolved Item (247/82-22-01) IST Valve Testing Frequency. This item involved deficiencies in the licensee's ASME Section XI program for stroke testing of valves; specifically that testing of valves not tested during normal operation must begin within 48 hours of reaching cold shutdown, and that check valves be full-stroke tested. The inspector verified that the licensee's Section XI submittal of 2/16/84 and PT-V24, "Inservice Valve Tests," Rev. 1, specify that testing will begin within 48 hours of reaching cold shutdown, and that check valve full-stroke testing is documented as part of pump flow test procedures when possible, with specific exemption request filed otherwise. The inspector had no further questions in this area.

(Closed) Unresolved Item (247/82-22-02) Stroke Time Testing of Air Operated Valves. The inspector reviewed procedure PT-Q13, "Inservice Valve Tests," Rev. 5, and verified that stroke times are now recorded and compared to an acceptance criterion for air operated valves. The inspector had no further questions on this item.

(Open) Unresolved Item (247/82-22-03) IST Program Updating. The inspector reviewed the licensee's IST program implementing procedures and discussed this item with the Test and Performance Engineer. Based on this review, it was determined that there has not been a resolution as to whether Engineering or Quality Assurance will be responsible for reviewing modifications to determine whether a modification requires updating the IST program. Presently QA is performing this review; however, administrative procedures controlling this review will not be revised until the determination of responsibility is completed. This item will be reviewed in a subsequent inspection.

(Closed) Unresolved Item (247/82-22-04) Valve Leak Rate Testing. The inspector reviewed procedures PT-R26A and B, and PT-R27B and C which are the Type C test procedures for individual valves. These procedures have been revised to specify a maximum permissible leakage rate. The inspector also reviewed procedure PT-R53, RHR Valve 730, 731 Integrity Test, Rev. 2, verifying that these two valves are now included in the IST program for Type C testing.

(Closed) Unresolved Item (247/82-22-05) Analysis of IST Results. The inspector verified that procedure PT-Q24 through Q3E have been revised to require immediate notification of the Senior Watch Supervisor (SWS) of any unsatisfactory results, and for the SWS to review the results to determine whether system operability requirements are met. The inspector had no further questions in this area.

### 3. Maintenance

The inspector reviewed portions of selected maintenance activities on the following safety-related systems and components. The inspector verified that these activities were conducted in accordance with approved procedures, technical specifications and applicable industrial codes and standards.

- Maintenance Work Request (MWR) 16379, "Valve SWN 45-1 Inoperable," dated October 3, 1984;
- MWR 10686, "95 Foot Air Lock Preventive Maintenance," dated April 30, 1983;
- MWR 09939, "CVCS Valve 201 Rework," dated May 3, 1984;
- MWR 14657, "PCV-456 Limit Switch," dated July 25, 1984;
- MWR 11072, "Steam Generator 22 Cold Leg Manway Inspection," dated June 23, 1984; and,
- MWR 14525, "Main Steam Safety Valve 52 Bench Test," dated June 11, 1984.

No violations were identified.

### 4. Surveillance

The inspector verified that surveillance of safety-related systems and components was performed by licensee personnel in accordance with Technical Specification requirements for frequency and applicable acceptance criteria. Portions of the following surveillances were reviewed/observed.

- Performance Test (PT)-M22, "Station Battery Surveillance," performed September 15-18, 1984;

- PT-M34, "Main Fire Pump Operability Test," performed September 3, 1984;
- PT-M38, "Gas Turbine Generator Functional Test," performed August 3, 1984;
- PT-RG, "Full Length Rod Position Indication System Calibration," performed October 15, 1984;
- PT-M40, "Emergency Diesel Driven Fire Pump Functional Test," performed August 4, 1984; and,
- PT-M42, "Boric Acid Transfer Pumps Operational Test and Inspection," performed May 23, 1984.

The inspector noted that data for completed surveillance PT-M40 had not been properly entered in Section 4, the operability section. Personnel performing the surveillance had placed a check mark when a specific recorded value was required. The inspector reviewed previously completed surveillances for PT-M40 and found this to be an isolated case. The licensee acknowledged the finding and stated it would be corrected.

No violations were identified.

#### 5. 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
- Health Physics Watch Log

b. The inspector(s) conducted routine entries into the protected area of the plant, including the control room, PAB, fuel building, and containment (when access is possible.) 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 inspector(s) confirmed the operability of a selected ESF train by:
- Verifying that accessible valves in the flow path were in the correct positions;
  - Verifying that power supplies and breakers were in the correct positions;
  - Verifying that de-energized portions of these systems were de-energized as identified by Technical Specifications;
  - Visually inspecting major components for leakage, lubrication, vibration, cooling water supply, and general operable condition; and,
  - Visually inspecting instrumentation, where possible, for proper operability.

Systems Inspected:

- Safety Injection
  - Diesel Generators
- (3) On a biweekly basis, the inspector(s):
- 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:

The unit was returned to service on October 17. Physics testing was conducted through the remaining portion of this report period. The inspector monitored selected phases of the unit's operations to determine compliance with the NRC's regulations. The inspector determined that the areas inspected did not constitute a health and safety hazard to the public or plant personnel. The following are noteworthy areas the inspector researched in depth:

- (1) After receipt of a letter from NRR allowing heatup and pressurization of the Reactor Coolant System, the licensee performed PT-V3, "Reactor Coolant System (RCS) Leakage Test", which satisfies the test requirements of ASME B&PV Code Section XI, Article IWA-5000 and Article IWB-5000 for Quality Group A. The inspector witnessed the performance of the test and made a walkdown of two loops of the RCS and a thorough inspection under the reactor vessel. The inspector did not identify any leakage. The inspector reviewed the completed surveillance package after completion of the test. No items of noncompliance were identified.
- (2) At 8:25 a.m. on 10/8, the licensee experienced an actuation of safeguards systems as a result of the loss of No. 22 instrument bus. All systems functioned normally. The instrument bus was lost when an operator, following a procedure that did not accurately address the electrical lineup, opened the breaker out of sequence resulting in the loss of the bus. Due to plant conditions (335F, 1700 psi) no injection occurred. This event occurred when the unit was in an unusual electrical lineup not addressed in the procedure. Provisions have been made by the licensee to instruct the operators not to place the systems in a condition, that is addressed by the "initial conditions" portion of the procedure, without first checking with the control room senior operator.



- (3) The licensee received a letter from NRR allowing them to return the unit to operation on the evening of 10/16. The operators had started to withdraw control rods and had "B" shutdown bank at 125 steps, when a safety valve lifted on "B" steam generator, resulting in a 100 lb. differential pressure safety injection. All circuits and components functioned normally. No injection occurred due to the differential pressure between the safety injection header and the reactor coolant system. The licensee tested all the safety valves on "B" steam generator with the valve manufacturer vendor present. One safety valve was found to be set 12 lbs. below the setpoint (tolerance is 10 lb.) The affected valve was reset and the licensee increased pressure on the secondary to insure all the other safety valves on the other steam generators did not lift. After a soaking period of about 24 hours, the startup was commenced with no further evidence of safety valve leakage.
- (4) On 10/22 at 12:37 a.m., while at 50% of rated full power, the licensee identified a fire at the No. 1 turbine generator bearing. The fire, attributed to oil soaked insulation coming in contact with hot steam piping, was extinguished in less than 10 minutes. The licensee manually shut down the reactor and placed the turbine on turning gear. An investigation identified the source of bearing oil as being spilled onto the insulation during the fabrication of the high pressure turbine. After the fire was extinguished, and the area cleared, no further problems were identified.
- (5) The inspector accompanied plant management personnel on a containment walkdown prior to the closeout of the containment. The inspector found the containment free of debris and combustible materials in accordance with NRC requirements and licensee procedures.
- (6) The inspector reviewed internal memos, a safety evaluation, and a video tape of the reactor vessel, with regard to loose parts. The inspector concluded that the licensee:
- Found loose parts in the reactor vessel, after the lower internals were removed, which consisted of two metal plates, one 2" x 1/2" x 1/16" and a 2" x 3/4" x 1/16", strands of nylon rope, pieces of tape, metal chips and plastic tie wraps.
  - Successfully removed all the parts found except one plastic tie wrap and the 2" x 3/4" x 1/16" metal plate.

- Performed a safety evaluation addressing stresses resulting from the impact of a loose object, thermal/hydraulic effects due to blockage of one fuel assembly and plant heatup with regard to loose parts being wedged between the energy absorber and the reactor vessel bottom.

The results of the safety evaluation along with a safety evaluation performed in 1981 (see LER 81-006/01T-6) concluded that if a modified heatup and noise monitoring program, which was incorporated in 1981, was continued, then a loose object could not become wedged between the energy absorber and the vessel, and that there was not enough surface area utilizing the loose parts (10 sq. inches) to block a fuel assembly flow channel (71 sq. inches) sufficiently to affect heat transfer, and that there would be no stresses induced by loose parts in excess of the applicable ASME code allowable limits. The inspector verified that the licensee is using the modified heatup and noise monitoring program.

No violations were identified.

#### 6. Review of Monthly Report

The Monthly Operating Report for September, 1984 was reviewed. The review included an examination of selected maintenance work requests, and an examination of significant occurrence reports to ascertain that the summary of operating experience was properly documented.

The inspector(s) 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(s) had no further questions relating to the report.

#### 7. Independent Verification of System Line-up

The inspectors independently verified the licensee's lineup of the auxiliary feedwater system utilizing the licensee's system checkoff list and latest system print. The inspectors concluded that the system was lined up to perform the function for which it was intended. However, an administratively controlled locked valve was found unlocked. The valve was in the correct position in accordance with the print and the checkoff list. The licensee conducted an investigation into why the valve was left unlocked. The inspectors reviewed the results of the investigation with the following results:

The locked valve was independently verified locked on four different occasions on October 9th by the operations staff, but on October 16th the system was being tested for pump head and flow verification to satisfy surveillance requirements. The licensee was having problems with the motor operated pumps meeting certain pump flow criteria. The pumps met the design flow and head characteristics, but leakage flow was suspected via the remote controlled isolation valve in the recirc line. The locks were removed to close the manual valve in the recirc line. After testing, all the locks were not replaced. The licensee has issued a directive to operations which states that any time a lock is removed from a locked valve, it will be logged in the Senior Watch Supervisor's log, and that it be followed until the lock is replaced.

No violations were identified.

8. Followup on IE Bulletin

Bulletin 83-BU-01 Periodic Test, "Reactor Protection Logic Channel Functional Test" (PTM-14A) was successfully performed on February 25, 1983 prior to receipt of IE Bulletin No. 83-01. The test demonstrated the operability of the reactor trip and bypass breaker undervoltor trip function independent of the shunt trip. Licensee action required by IE Bulletin No. 83-01 was satisfactorily completed and documented in the licensee's response letter to the NRC dated March 7, 1983.

9. Licensee Event Report Followup

Through discussions with licensee personnel and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished and corrective action to prevent reoccurrence had been accomplished in accordance with Technical Specifications:

- LER 84-012 - Auxiliary Feedwater Pump Relays found defective.
- LER 84-013 - Degraded Fire Dampers (1 hour vs. 3 hours) (Documented in Report 84-26.)

Each of these events were verbally reported to the resident inspector at the time of the event.

The above items are considered closed.

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 2.790 material.