

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-286/80-04

Docket No. 50-286

License No. DPR-64 Priority -- Category C

Licensee: Power Authority of the State of New York (PASNY)

10 Columbus Circle

New York, New York 10019

Facility Name: Indian Point Nuclear Generating Station, Unit 3

Inspection at: Indian Point Nuclear Generating Station, and Con Ed Buchanan Service Center, Buchanan, New York

Inspection conducted: September 3-4, 1980

Inspectors: T. J. Jackson  
T. J. Jackson, Radiation Specialist

10/24/80  
date signed

date signed

date signed

Approved by: R. J. Bores  
R. J. Bores, Chief, Environmental & Special Projects Section, FF&MS Branch

10/24/80  
date signed

Inspection Summary:

Special Inspection on September 3-4, 1980 (Report No. 50-286/80-14)

Areas Inspected: Special, announced inspection of the meteorological monitoring system. The inspector examined the monitoring equipment and the support facilities in the Emergency Operations Facility and reviewed licensee actions taken in response to the February 11, 1980 Confirmatory Order in the following areas: Primary Meteorological Measurements Program; Backup Meteorological Measurements Program; Real-Time Predictions of Atmospheric Effluent Transport and Diffusion; and Remote Interrogation of the Atmospheric Measurement and Prediction Systems. The inspection involved 3 inspector-hours on site by one NRC regionally-based inspector.

Results: In the area inspected, no items of noncompliance were identified. All items specified in Annex 1 to the Appendix of the Confirmatory Order dated February 11, 1980 were found to be addressed by the licensee.

## DETAILS

### 1. Persons Contacted

#### Power Authority of the State of New York (PASNY)

- \*W. Hamlin, Assistant to the Resident Manager/IP-3
- \*D. Halama, Site QA Engineer/IP-3
- J. Kelly, Radiological and Environmental Services Supervisor/IP-3

#### Consolidated Edison Company of New York, Inc. (Con Ed)

- \*C. Jackson, Project Manager, Emergency Preparedness/IP
- \*L. Cohen, Senior Meteorologist
- \*F. Phillips, Manager, Field Office/QA/IP
- G. Christianson, Senior Computer Applications Engineer
- W. Thompson, Consultant Quality Assurance and Reliability
- S. Sadlon, Supervisor, Nuclear Environmental Monitoring/IP

#### Pickard, Lowe and Garrick

- K. Woodard, Consultant

#### EDS Nuclear, Inc.

- \*J. A. Bowles, Section Manager

\*denotes those present at the exit interview on September 4, 1980.

### 2. Licensee Response to Confirmatory Order Requirements

#### a. General

On February 11, 1980 the NRC issued a Confirmatory Order to Con Ed and PASNY requiring certain actions to be taken regarding Indian Point Nuclear Generating Station. Item F.2. of the Appendix to the above Order specified that within six months of the date of the Order, the licensee shall meet the meteorological acceptance criteria for emergency preparedness contained in Annex 1 to the Appendix. The purpose of this inspection was to verify that the licensee had performed the actions required by Item F.2. of the Appendix to this Order.

b. Primary Meteorological Measurements Program

(1) Instrumentation

The inspector verified by observation and discussion with the licensee that the installed primary meteorological instrumentation was functioning at the time of the inspection and that the instrumentation enabled the licensee to measure or calculate those parameters required by Section 1.C(1) and 1.C(2) of Annex 1 to the Confirmatory Order.

(2) Quality Assurance

The inspector determined through review of records and discussion with the licensee that a QA program had been established for the design, construction and operation of the meteorological monitoring facilities; the facilities and component parts of which the licensee had designated as "Class MET". The licensee stated that this QA program was consistent with the Con Ed QA program for the operating phase which was submitted to the NRC on June 7, 1977 and approved by the NRC in a letter dated August 5, 1977. The inspector determined that based on the class "MET" program being consistent with the licensee's NRC approved QA program, it therefore meets the acceptance criteria specified in Section 1.C(3) of Annex 1 to the Confirmatory Order.

The licensee stated that the "Class MET" QA structure and organization of responsibility was established for the design through initial operation phases of the meteorological monitoring program, and that the QA program for continued maintenance and operation will remain essentially the same with possible changes in the organization responsible for carrying out the program.

The licensee stated that review responsibility for audits, procedures, and program results currently rests with the Con Ed Nuclear Facility Safety Committee and the PASNY Plant Operations Review Committee. The licensee stated that the program operating and QA procedures were still being developed and were expected to be reviewed, approved, and implemented by September 17, 1980. The inspector reviewed Con Ed Special Audit No. 80-01-EC of Meteorological Monitoring conducted August 15-25, 1980 by the Con Ed QA Department and noted that the licensee was in the process of addressing the audit findings.

The licensee stated that the test and acceptance programs for the equipment in the Emergency Operations Facilities, including the meteorological monitoring system, were being performed for the licensee by EDS Nuclear.

The licensee stated that training of personnel in emergency use of the meteorological system will be part of emergency plan training, which will be revised to incorporate operation of new equipment. The licensee stated that one or more special QA audits of the meteorological monitoring system will be scheduled when the Emergency Operations Facility and the meteorological monitoring system are completed. The licensee stated that routine Con Ed audits of the meteorological monitoring system are currently scheduled semiannually and that it is planned that PASNY QA personnel will participate in these audits.

The inspector had no further questions in the above area at this time.

(3) Equipment Maintenance

The inspector determined through observation and discussions with the licensee that, except for the instrument sensors, the meteorological monitoring system was in a controlled-environment housing and that the meteorological system and housing were connected to separate and redundant power supplies (required by Section 1.C(4) of Annex 1 to the Confirmatory Order).

The inspector observed a test of the diesel generator serving as alternate power source for equipment and housing at the primary meteorological tower and noted that all systems functioned as required. The inspector observed the back-up battery power system, in part serving the meteorological monitoring equipment in the Emergency Operations Facility (EOF). The licensee stated that the EOF was directly tied into the Con Ed Buchanan Substation and that power to the EOF would be available as long as the Buchanan Substation was operable. The licensee stated that the battery back-up power system was a non-interruptable source which would last for four hours, during which a minimum of one of the three gas turbines available (one on Indian Point Site and two at the Buchanan Substation) could be started to supply long-term emergency power. The licensee stated that it is planned to use a diesel generator as the back-up power supply to the EOF and that the back-up sources described above are to be used until this diesel generator can be delivered and installed.

The inspector had no further questions in this area at this time.

c. Backup Meteorological Measurements Program

(1) Instrumentation

The inspector examined the backup meteorological tower, located adjacent to the Indian Point Site on the roof of the Con Ed Buchanan Service Center which provides the backup instrumentation at approximately 10m elevation (15 feet above the roof of the building). The inspector noted that the backup instruments were functioning as required at the time of the inspection and that data from the backup instruments were recorded in the EOF. The licensee stated that it is intended to keep the backup meteorological monitoring system operating continuously. The licensee stated that atmospheric stability category was estimated from the wind direction recorder chart, in addition to a determination through direct sampling and calculation using the computer. The licensee stated that the backup meteorological system was supplied with power continuously from the EOF and would have emergency power from the same source as the EOF. The licensee stated that maintenance and calibration of the backup meteorological instrumentation will be performed and scheduled similarly to the primary meteorological system.

The licensee stated that a portable unit for measuring wind speed and wind direction was also available as additional backup at the primary meteorological tower which could be installed at the 10 meter level and was powered by battery. The inspector examined this equipment and noted that all necessary components were maintained in the support trailer at the base of the tower.

The inspector stated that the above information addressed Items 2.C(1), 2.C(2), 2.C(3), 2.C(4), and 2.C(6) of Annex 1 to the Confirmatory Order. The inspector had no further questions in the above areas at this time.

(2) Quality Assurance

The licensee stated that the "Class MET" QA program in operation for the primary meteorological monitoring system also applied to the backup system. The inspector had no further questions in this area at this time (Item 2.C(5) of Annex 1 to the Order).

d. Real-Time Predictions of Atmospheric Effluent Transport and Diffusion

The inspector determined through observation and discussions with the licensee that both Class A and Class B atmospheric transport and diffusion models were available using the computer associated with the meteorological monitoring system. The models used real-time meteorology

from the site meteorological tower and incorporated site area topography to varying degrees depending on whether the Class A or Class B model was used. The Class B model could be updated to account for changes in parameters affecting transport and diffusion and could incorporate forecast data. The licensee also subscribes to a weather forecasting service that provides a 24-hour forecast, updated every three hours. The source of data used in Class A and B modeling was identified on the data display, and updated data were available at a minimum of 30 minute intervals. Both the Class A and Class B models included current and forecast plume position, dimensions and radioactivity concentrations at a minimum of 30 minute intervals. All information, including data and modeling results, was available through remote interrogation of the system.

The licensee stated that estimates of accuracy and conservatism were available in general terms in several publications for the models used and the inspector was provided with a list of these references. The licensee also stated that a tracer study was planned for the Spring of 1981 which will enable better estimates of accuracy and conservatism to be made based on site-specific features incorporated into the Class A and Class B models used by the licensee.

The inspector stated that the above information addressed Items 3.C(1), 3.C(2), and 3.C(3) of Annex 1 to the Confirmatory Order. The inspector had no further questions in the above areas at this time.

e. Remote Interrogation of the Atmospheric Measurement and Prediction Systems

The inspector determined through operation of a telephone terminal that the atmospheric measurement and prediction systems were remotely interrogable. The licensee stated that there were four 300 Baud lines and five 1200 Baud lines available on two rotary exchanges so that an incoming call would be inserted into the first available open line. In addition, the licensee stated that there were three dedicated, single-number, 300 Baud lines: one for input of weather forecast data; one for computer programming purposes; and one for the licensee's meteorological consultant, Pickard, Lowe, and Garrick. The licensee stated that the remote interrogable phone lines could be accessed through either the Croton or Peekskill telephone exchanges, which provided for two physically separated lines and exchanges accessing the system. The inspector noted that the NRC had approved this form of redundancy in telephone communications through a July 31, 1980 letter from S. A. Varga to P. Zarakis, V. P. of Con Ed until an alternate microwave communications system can be established. The inspector noted that atmospheric measurement and prediction data were presented in the format specified by the NRC. The licensee stated that no format was specified for presentation of Class B modeling data and that it was not possible to fit the data required by the NRC into an

80 column line, and therefore they had developed a format which they considered acceptable to meet the specifications. The system as it was installed would recall 15 minute averages of meteorological parameters from any period or interval on record, and the resolution of the data presented met the accuracy specifications of Regulatory Guide 1.23 (Safety Guide 23).

The inspector stated that the above information addressed Items 4.C(1), 4.C(2), 4.C(3), 4.C(4), and 4.C(5) of Annex 1 to the Confirmatory Order. The inspector had no further questions in the above areas at this time.

3. Inspector's Evaluation

Based on the above information, the inspector determined that the licensee had addressed all of the items listed in Annex 1 to the Appendix of the February 11, 1980 Confirmatory Order.

4. Exit Interview

As part of the inspection, on September 4, 1980, the inspector discussed with those personnel denoted in paragraph 1 the scope and findings of the inspection.