IE:I Form 12
(Jan 75) (Rev)

U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-03/76-10, 50-247/76-23, 50-286/76-25

Docket No: 50-03, 50-247, 50-286

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

License No: DPR-5, DPR-26, DPR-64

Priority: --

Category: D, C

Safeguards Group: --

Location: Buchanan, New York

Type of Licensee: PWR, 615 MWt (B&W), PWR, 2758 MWt (W), PWR, 3025 MWt (W)

Type of Inspection: Special, Unannounced

Dates of Inspection: September 27-October 1, October 12-13, and 19-20, 1976

Dates of Previous Inspection: September 13-16, September 27-October 1, 1976

Reporting Inspector: for D. R. Neely, Radiation Specialist — DATE: 11-13-76

Accompanying Inspectors: J. F. Streeter, Reactor Inspector — DATE: 11-15-76

_____ — DATE

_____ — DATE

Other Accompanying Personnel: NONE — DATE

Reviewed By: P. J. Knapp, Chief, Radiation Support Section — DATE: 11-13-76

SUMMARY OF FINDINGS

Enforcement Action

Items of Noncompliance

A. Violations

None.

B. Infractions

1. 76-23-01 - Control of High Radiation Areas.

10 CFR 20.203(c)(2) requires that high radiation areas established for more than 30 days, be equipped with control devices to reduce the level of radiation upon entry into the area, or be equipped with control devices to energize conspicuous visible or audible alarm signals upon entry into the area, or be maintained locked except during periods when access is required, with positive control over each individual entry.

Contrary to the above, on September 29, 1976, a high radiation area at the Refueling Water Storage Tank which had been established for more than 30 days, was not equipped with the specified control device or locked with positive control maintained over each individual entry. (Details 5)

2. 76-25-01 - Adherence to Radiation Protection Procedures.

Technical Specification 6.11 requires that procedures for personnel radiation protection be prepared consistent with the requirements of 10 CFR 20 and be approved, maintained and adhered to for all operations involving personnel radiation exposure.

General Administrative Directive RS GAD-2, Revision 1, "Radiological Health and Safety Procedures," dated February 24, 1975, specifies that employees are not to smoke in the Controlled Area except for areas that have been approved for smoking.

Contrary to the above, General Administrative Directive RS GAD-2, Revision 1, was not adhered to on September 28, 1976, in that an individual was observed smoking on the 73' elevation of the Unit 3 Primary Auxiliary Building, an area not approved for smoking. (Details 6)

C. Deficiencies

None.

Licensee Action on Previously Identified Enforcement Action

A. Inspection Nos. 50-003/76-05 and 50-247/76-08, Limits for whole body exposures of individuals required by 10 CFR 20.101(b). (Details 8)

B. Inspection Nos. 50-003/76-05 and 50-247/76-08, Adherence to requirements of Station Administrative Order No. 105, Revision 3, "Work Permits." (Details 7)

C. Inspection Nos. 50-003/76-05 and 50-247/76-08, Adhering to radiation protection procedures; (1) Revised Controlled Area Sign-In Procedure, (2) General Administrative Directive RS GAD-2, Revision 3, "Radiological Health and Safety Procedures," (3) Station Administrative Order No. 105, Revision 3, "Work Permits." (Details 7)

D. Inspection Nos. 50-003/76-05 and 50-247/76-08, High radiation area access controls required by 10 CFR 20.203(c)(2). (Details 5)

E. Inspection Nos. 50-003/76-05 and 50-247/76-08, Posting of high radiation areas required by 10 CFR 20.203(e)(1). This item is considered closed. (Details 9)

F. Inspection Nos. 50-003/76-05 and 50-247/76-08, Posting of Radiation Areas required by 10 CFR 20.203(b). (Details 9)

Design Changes

Not inspected.

Licensee Events

Not inspected.

Other Significant Findings

A. Current Findings

1. Acceptable Areas

No inadequacies were identified during inspection of the following areas:

a. Radiation Work Permits.

b. Survey Records.

c. Air Sample Records.

d. Maintenance Procedure No. 2/3 CM-RV1/2.4, "Removal of Reactor Vessel Upper Internals and Closure Head."

2. Unresolved Items

None.

3. Infractions and Deficiencies Identified by the Licensee

A number of items of noncompliance were identified by the licensee through their internal audit system conducted April 13, 1976 through September 29, 1976. Because of the number of items identified, the items have been grouped into the four categories listed below:

a. Contrary to 10 CFR 20.203(b), during the period April 13, 1976 to September 29, 1976 at least 27 instances were identified by the licensee's audit program in which areas had radiation fields in excess of 5 mr/hr and were not posted as radiation areas by the licensee. (Details 4)

b. Contrary to 10 CFR 20.203(c)(1), during the period April 13, 1976 to September 29, 1976 at least 25 instances were identified by the licensee's audit program in which areas had radiation fields in excess of 100 mr/hr and the licensee failed to post the areas as high radiation areas. (Details 4)

c. Contrary to 10 CFR 20.203(c)(2), during the period April 13, 1976 to September 29, 1976 at least 103 instances were identified by the licensee's audit program in which high radiation areas established for more than 30 days, were not equipped with the specified control device or locked with positive control maintained over each individual entry. (Details 4)

d. Contrary to Technical Specification 3.2.6 (Unit 1) and 6.8 (Unit 2), during the period April 13, 1976 to September 29, 1976 at least 40 instances were identified by the licensee's audit program in which Station Administrative Order No. 105, Revision 3, "Work Permits," dated March 1, 1976, was not adhered to. (Details 4)

4. Deviations

None.

B. Status of Previously Identified Unresolved Items

Not inspected.

Management Interview

A management interview was conducted at Buchanan, New York (site) on October 1, 1976.

Persons Present

E. Kessig, Acting Manager, Nuclear Power Generation Department
J. Bayne, Power Authority State of New York
S. Cantone, Superintendent of Power, Power Authority State of New York
T. Law, Plant Manager
J. Makepeace, Director Technical Engineering
R. Hayman, Manager, QA Monitoring and Review
B. Moroney, Chief Operations Engineer
S. Zulla, Operations Engineer
R. VanWyck, Manager, Nuclear Services
A. Cheifetz, Radiation Safety Director
N. Hartman, Consultant, QS&R
P. Upson, Quality Assurance and Review
J. Cullen, Director Health Physics

A second management interview was conducted at Buchanan, New York (site) on October 13, 1976.

Persons Present

T. Law, Plant Manager
R. VanWyck, Manager, Nuclear Services
R. Hayman, Manager, QA Monitoring and Review

J. Makepeace, Director, Technical Engineering
A. Cheifetz, Radiation Safety Director
J. Cullen, Director, Health Physics
W. Sipperly, Planning Engineer

Items Discussed

A. Purpose of the Inspection

The inspector stated that the purpose of the inspection was to review the licensee's corrective action with regard to their response to the Notice of Violation, issued June 21, 1976 and to review additional licensee commitments established during telephone discussions on July 15 and 16, 1976.

B. Acceptable Areas

The items discussed are as identified under the "Other Significant Findings" section of this report.

C. Items of Noncompliance

The items discussed are as identified under the "Enforcement Action" section of this report.

DETAILS

1. Persons Contacted

E. Kessig, Acting Manager, Nuclear Power Generation Department
T. Law, Plant Manager
R. VanWyck, Manager, Nuclear Services
A. Cheifetz, Radiation Safety Director
J. Makepeace, Director, Technical Engineering
W. Monti, Plant Engineer
B. Moroney, Chief Operations Engineer
S. Wisla, Senior Engineer
J. Cullen, Director, Health Physics
G. Liebler, Radiological Engineer
G. Imbimbo, Health Physics Supervisor
J. Perrotta. Health Physics Supervisor
P. Gaudio, Health Physics Supervisor
W. Grassi, Administrative Supervisor
S. Sadlon, Health Physics Technician
J. Odendahl, Senior Electrical Technician, Radiation Safety

2. Scope of the Inspection

The scope of the inspection consisted of a review of survey records, Radiation Work Permits, interviews with plant personnel and an inspection of the Unit 1, Unit 2, and Unit 3 controlled areas.

3. Plant Records

The inspector reviewed the following records for the periods indicated and found that they appeared to be acceptable.

Radiation Work Permits	9/12/76 - 9/28/76
Air Sample Records	8/24/76 - 9/28/76
Survey Records	9/12/76 - 9/28/76
High Radiation Area Door Checks	10/6/76 - 10/13/76

4. Internal Audit Program

The licensee in their response to the Notice of Violation, issued June 21, 1976, and in accordance with supplemental commitments made in telephone conversations on July 15 and 16, 1976 initiated a formal audit and inspection program. The program was designed to assure compliance with the regulations and to strengthen management controls over the radiation safety program.

The licensee's commitments are as follows:

a. "The inspections by an experienced staff member of the health physics organization will be conducted daily until the end of the present outage, and will then be conducted weekly until the end of the year, at which time the program will be reviewed and the frequency adjusted as appropriate."

b. "The independent special audits initiated by the Assistant Vice President are done monthly."

c. "The audits by the Quality Assurance and Reliability organization are conducted monthly."

During the course of inspection, the licensee's program was audited to determine that; (1) the audits were being conducted as specified, (2) the daily report of findings and the weekly summary reports were submitted to the levels of management as specified in the response letter dated July 9, 1976, and (3) corrective action had been accomplished or instituted on a timely basis for all of the licensee identified items of noncompliance.

The inspector reviewed the results of the audits and inspections conducted during the period April 13, 1976 through September 29, 1976. The inspector noted that the licensee had conducted approximately 12 monthly audits (two organizations auditing monthly). During the conduct of these internal audits, the licensee identified many items of noncompliance and documented that corrective action had been accomplished or instituted on a timely basis.

In order to determine if the licensee's management control system had been effective as a result of the audits, a trend analysis consisting of an arrangement of the licensee identified items into four categories was tabulated.

The table showing the number of items identified during each month, beginning April 13, 1976 and ending September 29, 1976 follows:

TABLE I

Four of the categories of items of noncompliance identified by the licensee during the period April 13, 1976 through September 29, 1976

Period Audited	Number of Instances Identified			
	High Radiation Area Posting	High Radiation Area Access and Control	Radiation Area Posting	Adherence to Radiation Work Permits
4/13/76 - 4/30/76	5	6	0	1
5/1/76 - 5/31/76	4	23	4	11
6/1/76 - 6/30/76	8	23	9	15
7/1/76 - 7/31/76	5	20	11	12
8/1/76 - 8/30/76	2	21	0	0
Following 8/30/76 work areas were being closed and the number of individuals working in the controlled area was reduced by approximately 200.				
9/1/76 - 9/29/76	1	10	3	1

The inspector stated to a licensee representative that in reviewing the results of the trend analysis it appeared that the licensee's corrective action had been effective in reducing items of noncompliance with the exception of the category identified as high radiation area access and control. Analysis of this category indicated that the licensee's corrective action did not appear to be effective.

The inspector selected at random a few items of noncompliance from each category and examined the status during site tours and interviews to determine if the licensee's corrective action was satisfactorily accomplished. Detailed examination revealed that all items had been satisfactorily corrected with the exception of controlling access to a high radiation area. This item is discussed in detail 5 of this report.

The inspector stated that while the audit program appeared to be effective, management's followup corrective action was not completely satisfactory.

5. Control of High Radiation Area

As previously described in detail 4, the inspector reviewed the licensee's audit program to determine if corrective action for all items of noncompliance had been accomplished or instituted on a timely basis. The inspector selected at random and examined areas from the category, High Radiation Areas Access and Control. Corrective action had been completed with the exception of the following case:

On September 21, 1976, the licensee's internal audit identified the area around the Refueling Water Storage Tank (RWST), as a high radiation area which had been established for more than 30 days and required that the licensee document in the audit report that the area had to be either locked or controlled.

On September 29, 1976, the inspector selected the Refueling Water Storage Tank as an area to examine in detail to determine if the licensee's corrective action had been accomplished.

The inspector found the entrance to the area unlocked and unattended. The inspector observed that the area around the tank was posted as a high radiation area. The health physics supervisor

measured radiation fields up to 190 mR/hr at 18" from accessible surfaces of the RWST.

The inspector and the health physics supervisor did not observe any individuals working in the RWST area during this time. While observing the locking mechanism on the door located at the entrance to the RWST area, the inspector noted that the door could not be locked in such a manner as to prevent unauthorized entry into the RWST area. The inspector noted that the finding constituted noncompliance with 10 CFR 20.203(c)2.

At approximately 4:30 p.m. the inspector and a health physics supervisor went to the RWST area and found the door unlocked and unattended. The inspector expressed his concern with the health physics supervisor and stated that the Plant Manager would be notified as to the status of the RWST area.

At approximately 5:00 p.m. the inspector, reviewed the matter with Plant Manager. The Plant Manager stated that the area would be locked or controlled.

On September 30, 1976 the inspector verified that the RWST area was locked and that positive control was being maintained.

On October 12, the inspector returned to the site to again inspect the control of high radiation areas. The inspection consisted of examining the high radiation areas of Unit 1, 2 and 3 to determine that they were locked or positive control was being maintained over each individual entry. The inspector found no unlocked or uncontrolled areas during the inspection.

During the inspection a licensee representative stated that on approximately October 15, 1976 a key control program would be implemented for the control of high radiation areas for Units 1, 2 and 3.

Furthermore, the licensee implemented a program which consists of checks of high radiation area doors to verify that they are locked. The checks are performed by a Nuclear Plant Operator two times a shift and once every two shifts by the watch chemistry technician. The inspector was told that these checks are being conducted three shifts per day, seven days a week.

In addition, licensee representative stated that five vendors had been contacted with regard to supplying new gates for the entrances to high radiation areas. The licensee representative further stated that the gates should be installed by the end of the year.

On October 19, 1976 the inspector again returned to the site to examine high radiation area control. The inspector examined high radiation areas in Units 1, 2 and 3 and found that 11 areas were locked or controlled.

Key control has also been implemented for Units 1, 2 and 3 at this time as a means of controlling access to high radiation areas. Many of the locks on high radiation area doors have been changed and previously issued keys have been returned with the exception of a few held by individuals on vacation. A licensee representative stated that as the employees return from vacation their keys will be collected.

The inspector reviewed Station Administrative Order (SAO) No. 111, Revision 0, "High Radiation Area Access Control," dated October 18, 1976. The inspector stated that compliance with the SAO would be examined at subsequent inspections and that control of access to high radiation areas will continue to be inspected to permit confidence that licensee's corrective action remains satisfactory.

6. Smoking in the Controlled Area

On September 28, 1976, during an inspection of the Unit 3 Primary Auxiliary Building, the inspector observed an individual smoking in the controlled area on the 73' elevation. The inspector asked the licensee representative accompanying him if individuals were permitted to smoke in the controlled area. The licensee representative stated that smoking was not permitted in the controlled area except for areas that have been approved for smoking. The licensee representative further stated that the individual was smoking in an area that had not been approved. The licensee representative took immediate action to correct this matter.

During the exit interview it was stated to the inspector that further management action had been taken with regard to the individual involved. In addition, a memo had been issued to all plant personnel reinstructing them in the fact that smoking was not permitted in the controlled areas.

The inspector had no further questions concerning this matter.

7. Radiation Protection Procedures

The inspector reviewed the licensee's corrective action in regard to individuals adhering to the requirements of radiation protection procedures.

Station Administrative Order (SAO) No. 105, Revision 3, "Work Permits," dated March 1, 1975, was revised on August 24, 1976. It will be reviewed at a future inspection.

Operations and health physics personnel authorized to issue Radiation Work Permits, Radiation Exposure Authorizations and Work Permits were specifically reinstructed in the requirements of SAO 105.

The subject of adhering to the requirements of Radiation Work Permits and the importance of communications with health physics and operations was emphasized in meetings held with plant personnel.

The Plant Engineer held meetings with maintenance personnel and discussed the following:

Details in regard to the thimble withdrawal incident.

Importance of adhering to the requirements of Radiation Work Permits (RWP) and Radiation Exposure Authorizations (REA).

Interfaces with RWP's and REA's.

Adherence to instructions and posted in signs.

The Plant Engineer's "Open Door" policy with regard to safety items.

In addition, the Plant Engineer issued a memo on April 14, 1976, titled "Radiation Safety" and discussed it with the maintenance personnel. The memo emphasized the fact that radiation safety was everyone's responsibility.

The inspector reviewed the licensee's corrective action in regard to adhering to the requirements of procedures in the following cases:

Revised Controlled Area Sign-In Procedure, effective November 11, 1975.

General Administrative Directive RS-GAD-2, Revision 1, "Radiological Health and Safety Procedures," dated February 24, 1975.

It was stated to the inspector that plant personnel had been reinstructed to adhere to the requirements of the above procedures and as part of the Annual Retraining Program these procedures would be reviewed. The licensee representative stated that the training program is expected to begin during the first part of November 1976 and that the outline for the retraining had not been prepared. The inspector stated that the outline would be reviewed when it is completed and that several of the retraining sessions would be reviewed at subsequent inspections.

8. Whole Body Exposures

The licensee's corrective action in regard to the whole body exposure of 10.06 rem to a nuclear plant operator on April 15, 1976, consisted of:

a. Completing a detailed design review by September 1, 1976.

b. Conducting an evaluation of personnel monitoring devices presently available and evaluation of new devices as they become available.

The design review was performed as part of the effort to prevent unnecessary or inadvertent exposure of plant personnel due to unexpected high radiation fields. The review was conducted to identify areas of potential hazard. Such locations included areas containing certain waste processing and chemical control equipment (e.g., Demineralizers and Ion Exchangers) and waste storage areas. The review also dealt with the disposition of materials and equipment which had been activated by neutron flux irradiation during normal reactor operation. Such equipment included reactor internals, Rod Control Cluster assemblies, speciman samples, incore instrumentation and fuel assemblies.

Other areas of the plant, which were reviewed, appeared not to have the potential for the unanticipated creation of a sudden significant increase in radiation levels.

In a memo dated September 29, 1976 and titled, "Design Review of Indian Point Unit No. 2 Nuclear System," the licensee documented this review.

The inspector examined the results of the design review which appeared to be adequate and had no further questions.

The inspector discussed the licensee's progress in evaluating personnel radiation exposure devices that had been ordered for evaluation. A licensee representative stated that several devices were being evaluated but noted that sufficient test data had not yet been accumulated. The inspector stated that the results of the evaluations would be reviewed at a subsequent inspection.

10. Posting of Radiation Areas/High Radiation Areas

The inspector reviewed the results of the internal audits conducted during the period April 13, 1976 through September 29, 1976 in regard to posting of areas. The audit results revealed that the licensee's corrective action in regard to posting radiation areas and high radiation areas has been intensified as described in detail 4. The inspector selected several areas at random and examined the status of the posting during site tours and observed that the areas appeared to be posted as required by 10 CFR 20. The inspector stated that the licensee's corrective action appeared to be satisfactory and had no further questions.