

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

Region I

Report No. 50-03/80-01
50-247/80-10
50-03
Docket No. 50-247
DPR-5
License No. DPR-26 Priority -- Category D
C
Licensee: Consolidated Edison Company of New York, Inc. (Con Ed)
4 Irving Place
New York, New York 10003

Facility Name: Indian Point Nuclear Generating Station, Units 1 and 2

Inspection at: Indian Point Generating Station, Buchanan, New York and at the
Corporate Offices of Consolidated Edison Company of New York

Inspection conducted: July 21-August 8, 1980

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

11/10/80
date signed

Robert J. Bores
R. J. Bores, Chief, E&SP Section (July 29-30, 1980
only)

11/10/80
date signed

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

date signed
11/10/80
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Inspection Summary:

Inspection July 21 - August 8, 1980 (Combined Report Nos. 50-03/80-01 and 50-247/80-10)

Areas Inspected: Routine, unannounced inspection of environmental monitoring programs for operations including: the management controls of these programs; the licensee program for quality control of analytical measurements; implementation of environmental monitoring programs - radiological; implementation of environmental monitoring programs - biological/ecological; nonradioactive release rates and limits; and a followup on the licensee action on previous inspection findings. The inspection involved 31 inspector-hours onsite for Unit 1 and 32 inspector-hours for Unit 2 by two NRC regionally-based inspectors.

Results: Of the five areas inspected, no items of noncompliance were identified in three areas. Three apparent items of noncompliance (Deficiency - Failure to perform Sr-90 analyses of drinking water and lake water samples during 1979 - Paragraph 6.b; Deficiency - Failure to collect and analyze drinking water samples - Paragraph 6.b; and Deficiency - Failure to record the rate of delta Tc during all flow conditions - Paragraph 8.a(1)) were identified in two areas.

DETAILS

1. Persons Contacted

Consolidated Edison (Con Ed)

- W. Monti, Manager - NPG, IP
- (1,5) M. Shatkouski, Plant Manager, IP
- S. Wisla, Director, Chemistry and Radiation Safety, IP
- J. Makepiece, Director, Technical Engineering, IP
- (4) K. Burke, Attorney (Secretary, Environmental Protection Committee)
- (4) J. Davis, Senior Attorney (Secretary, Nuclear Facilities Safety Committee)
- (4) A. Cheifetz, Division Chemist
- (4) F. Karp, NEM Associate Engineer
- (1) S. Sadlon, Supervisor, NEM, IP
- (1) C. Limoges, Reactor Engineer, IP
- (1) J. Curry, Chief Operations Engineer, IP
- (1) P. Upson, Quality Assurance, IP
- (1) J. Quirk, Test and Performance Engineer, IP
- H. Searles, Senior QA Engineer
- N. Hartman, Senior Engineer - Offsite Review, IP
- H. Hoffman, Consultant, Quality Assurance
- J. Higgins, Chemistry Supervisor, IP
- L. Cohen, Senior Meteorologist
- W. Carson, Test Engineer, IP
- T. O'Connor, Manager, Biological Studies, IP
- (3) R. Keppel, Project Biologist, IP
- W. Breckel, Senior Clerk, IP
- A. Brescia, I&C Supervisor, IP
- E. Eich, Performance Supervisor, IP
- W. Gallagher, Senior Production Technician, IP
- H. Morrison, Watch Supervisor, IP
- R. Shacklinsky, Senior NEM Technician, IP
- G. Muller, Senior NEM Technician, IP

Power Authority of the State of New York (PASNY)

- (3,5) S. Zulla, Resident Manager, IP 3
- (2) W. Josiger, Superintendent of Power, IP 3
- (3) W. P. Hamlin, Assistant to Resident Manager, IP 3
- J. Kelly, Radiological and Environmental Services Supervisor, IP 3
- (2) J. Perrotta, Radiological Protection Supervisor, IP 3
- (2) L. Lomanaco, Assistant Radiological and Environmental Services Supervisor, IP 3
- (1,2,3) D. Quinn, Radiological Engineer, IP 3

- J. McGrady, QA Project Engineer, IP 3
- D. Halama, Site QA Engineer, IP 3
- S. Masciulli, Radiological Engineer
- D. Dunning, Aquatic Biologist
- J. Catano, Production Technician, IP 3
- (2) E. Tagliamonte, Operations Superintendent, IP 3
- M. Hansler, Assistant Operations Superintendent, IP 3
- N. McElroy, Senior Production Technician, IP 3
- (1,2) J. Van Amerongen, Summer Student (Environmental Monitoring), IP 3

Others

- A. Rosenmeyer, Engineer, York Research Corporation
- R. Shapot, Operations Manager, Texas Instruments

- (1) denotes those present at the exit interview on August 8, 1980 at the Indian Point 2 site.
- (2) denotes those present at the August 8, 1980 exit interview at the Indian Point 3 site.
- (3) denotes those contacted by telephone on August 14, 1980.
- (4) denotes those contacted at Con Ed corporate offices on July 29-30, 1980.
- (5) denotes those contacted by telephone on September 12, 1980.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (3/77-14-03; 247/77-33-03): Failure to report radiological environmental results in accord with the requirements. At the time of Combined Inspection 50-03/78-06 and 50-247/78-19 the licensee had not yet submitted all of the data required by the ETSR in the 1976 Annual Environmental Operating Report and had not yet submitted the 1977 Annual Environmental Operating Report. The inspector determined, through discussions with the licensee and review of the 1977 Annual Environmental Operating Report, Part B Supplement, and subsequent Annual Environmental Operating Reports, that the licensee had subsequently submitted the required radiological data for 1976, 1977, 1978, and 1979. This item is therefore closed (Details 6.b.(1)).

(Closed) Unresolved Item (3/78-06-01; 247/78-19-01): Revision of water sampling procedures. The licensee had stated that the appropriate procedures would be revised to prevent recurrence of an anomalous measurement due to nonrepresentative sampling methods. The inspector determined through discussions with the licensee and review of procedure NEM-C-02, Revision 3,

"Collection, Preparation, and Counting of Water Samples" dated February 22, 1979 that this procedure contained instructions for samples to be taken from areas where mixing is likely to occur and away from shore and influent streams of water. The inspector stated that based on revision of this procedure this item is considered closed.

(Closed) Deficiency (3/78-06-02; 247/78-19-02): Failure to submit anomalous measurement report in timely manner. The inspector determined through discussions with the licensee and review of anomalous measurements reports submitted to the NRC since the last inspection of this area, that these reports had been submitted to the NRC in a timely manner and that the corrective actions taken subsequent to Inspection 50-03/78-06 and 50-247/78-19 appeared to have been adequate. This item is therefore considered closed (Details 6.b.(2) and 7.b.(2)).

(Closed) Unresolved Item (3/78-06-03; 247/78-19-03): TLD deployment/analysis procedure revision. As described in Inspection Report 50-03/78-06 and 50-247/78-19 the licensee previously had posted three sets of TLDs at each location on a quarterly change rotation, with one set being changed and read each month. Only one set of quarterly data was used for reporting purposes, and reported data had not been normalized into an easily used format. The inspector discussed with the licensee the current TLD deployment/analysis procedure, NEM-C-03, Revision 4, "Preparation, Placement, Collection, and Counting of CaSO_4 TLDs", dated February 22, 1979. The licensee stated that two sets of TLDs were currently used at each station, one of which was changed and read monthly, and the second of which was changed and read quarterly. The licensee stated that exposed TLDs were returned to a contractor, Teledyne Isotopes, Inc., for analysis. The inspector noted that data were normalized and reported in terms of exposure per day. The inspector determined that based on the revised TLD deployment/analysis procedure in use, this item is closed.

(Closed) Unresolved Item (3/78-06-04; 247/78-19-04): LLD definition in accord with NRC staff position. At the time of the previous inspection in this area the licensee was using a method for calculation of LLD (lower limit of detection) which resulted in a higher probability of false-positive results than the method recommended by the NRC staff. The licensee had stated at that time that the method of LLD calculation would be revised in accord with the NRC staff recommendation. The inspector verified that the licensee's contractor, Teledyne Isotopes, Inc., had informed the licensee by letter on December 4, 1978 that they had begun calculating LLDs according to the method described in the HASL Procedures Manual, HASL 300, with the analysis of samples collected since July 1, 1978. The inspector stated that based on the continuing use of this calculational method for determination of LLDs, this item is considered closed.

(Closed) Deficiency (3/78-06-05; 247/78-19-05): Failure to approve temporary procedure changes in accord with ETSR. The licensee's EPC had failed to review and approve temporary changes to the 1978 fish biocharacteristics sampling program as required by the ETSR. The inspector noted that Amendment No. 23 for Unit 1 and No. 48 for Unit 2, effective February 17, 1979, changed Section 5.4.1 of the ETSR such that it no longer requires the Environmental Protection Committee (EPC) to approve temporary procedure changes to procedures pertaining to Section 4.0 of the ETSR. The inspector determined through review of selected temporary procedure changes pertaining to other sections of the ETSR that these had been reviewed and approved as required. This item is therefore closed.

(Open) Unresolved Item (3/78-06-06; 247/78-19-06): Completion and implementation of procedure for observing thermal stress in fish. The inspector reviewed the licensee's procedure POP 2.1, "Operation at Power," Revision 8, which includes a note to Section 2.2.D, Paragraph 2.1-5, which requires operators to look for thermally stressed fish at the plant discharge when the limit of Section 2.1.4.1 of the ETSR has been exceeded. The inspector discussed with the licensee the guidance given to operators regarding what constitutes thermal stress in fish and the indefinite time period within which observations must be made. The inspector also noted that the licensee had submitted to the NRC on December 4, 1979 a request for change of the ETSR which would eliminate the requirement for observing thermal stress in fish. The inspector stated that until the procedures are clarified in terms of thermal stress symptoms to be observed and time of observation, or the change in the ETSR is approved by NRR, this item will remain unresolved (Details 7.b.(1)).

(Closed) Unresolved Item (3/78-06-07; 247/78-19-07): Compliance with annual environmental operating report submission date requirements. The inspector noted that the current requirement in Section 5.6.1 of the ETSR specifies that the annual operating report be submitted within 120 days of January 1 of each year. This is a revision of the former requirement for submittal within 90 days of January 1 of each year. The inspector noted that the licensee had submitted the Annual Operating Reports for 1977, 1978, and 1979 within the specified 120 day period. The inspector stated that this item is therefore closed.

(Closed) Unresolved Item (3/78-06-08; 247/78-19-08): Reporting of required non-radiological data for 1977 per ETSR 5.6.1.1. The inspector determined through discussions with the licensee and review of the 1977 Annual Environmental Operating Report, Part A Supplement, that 1977 non-radiological environmental data were reported as required by ETSR Section 5.6.1 subsequent to the last inspection of this area. This item is therefore closed.

(Closed) Deficiency (3/78-06-09; 247/78-19-09): Failure to monitor each inlet temperature and record the rate of change of delta Tc continuously per ETSR 3.1.1.1 and 3.1.4.1. The inspector determined through discussions

with the licensee, examination of thermal monitoring system equipment, and review of selected thermal monitoring system records that each inlet temperature was now being recorded. This item is therefore closed.

The inspector determined that the rate of change of delta Tc was not recorded as required on several occasions during 1980. This recorder was also not operable during the last inspection of this area and the inspector stated that the failure to record the rate of change of delta Tc during all flow conditions is therefore a recurrent item of noncompliance (Details 8.a(1)).

(Closed) Deficiency (3/78-06-10; 247/78-19-10): Failure to perform annual temperature sensor system calibrations and monthly functional checks. The inspector determined through discussion with the licensee, review of Procedure PC-SA2, "River Water Temperature Monitoring System Calibration," Revision 2 and Procedure PT-M36, "River Water Temperature Monitoring System Functional Test", Revision 2, and review of results of calibrations and functional tests performed pursuant to these procedures, that the licensee now was performing the calibrations and functional tests required by ETSR Section 3.1.1.6. This item is therefore closed (Details 8.a.(1)).

(Closed) Unresolved Item (3/78-06-11; 247/78-19-11): Sensitivity and accuracy of temperature sensors per ETSR 3.1.1.3. As stated above, the inspector determined that the required annual calibrations of the thermal monitoring system have been performed since the last inspection in this area, and the licensee provided the inspector with calibration data for the RTD sensors installed during these system calibrations. The inspector determined through discussions with the licensee and review of river water temperature sensor calibration certification data that the sensors have an accuracy and sensitivity as good or better than required by the ETSR. This item is therefore closed.

(Closed) Infraction (3/78-06-12; 247/78-19-12): Failure to follow procedures - response to audits/Partlow temperature system calibration and failure to have procedure - temperature system calibration and functional tests. The inspector determined through discussions with the licensee and review of Procedure IPC-I-032, "Temperature Recorder Calibration (Partlow)" that since the last inspection of this area the Partlow temperature monitoring system has been calibrated annually according to a revised, reviewed and approved procedure. As described above, the inspector also determined that the primary (Bendix) temperature monitoring system was calibrated and monthly functional tests were performed according to reviewed and approved procedures. The inspector further determined through discussions with the licensee and review of audits completed since the last NRC inspection of this area (50-03/78-06; 50-247/78-19) that audit findings were responded to and resolved according to procedure and the results reviewed by the appropriate oversight committee (Environmental Protection Committee or Nuclear Facilities Safety Committee). The inspector stated that this item is therefore closed (Details 4.c and 8.a.(1)).

(Open) Unresolved Item (3/78-06-13; 247/78-19-13): Determination of whether rate of change of delta Tc is obtained by differentiation. The inspector determined during this inspection through discussions with the licensee, review of records, and review of internal audit findings, that the rate of change of delta Tc is still not obtained by differentiation but by a method of determining the difference in delta Tc over five minute intervals. The licensee stated that the ETSR change request submitted on December 4, 1979 would eliminate the requirement that rate of change of delta Tc be differentiated. This item remains unresolved pending approval of the ETSR change to Section 3.1.4.1 by NRR (Details 8.a.(1)).

(Closed) Unresolved Item (3/78-06-14; 247/78-19-14): Mismatches between ETSR and installed temperature monitoring system. The inspector determined through discussions with the licensee and examination of installed instrumentation that system modifications have been made such that discharge temperatures as low as 40°F can now be measured and that all three intake temperatures are now recorded continuously. This item is therefore closed.

3. General

Environmental monitoring programs at Indian Point continue to be operated on a site basis with operational responsibilities and administration divided between Con Ed and PASNY. PASNY operates the outfall structure and monitors those parameters associated with it, while Con Ed administers the remainder of environmental monitoring activities for both licensees through contractual agreements with PASNY. Section 5, "Administrative Controls", of the ETSRs differ for Unit 3 from that of Units 1 and 2, to reflect the PASNY organization, administrative structure, and responsibilities in place of those of Con Ed.

4. Management Controls

a. Con Ed

The Division Chemist, who reports to the Vice President, Power Generation through the Chief Chemical Engineer and the General Manager, Power Generation Services, has primary responsibility for conduct of the radiological environmental monitoring program. The Nuclear Facilities Safety Committee (NFSC) has the independent review and audit function in the radiological monitoring area.

The Environmental Protection Committee (EPC) also functions as an independent review and audit body which advises upper management. Amendments No. 23 to the Unit 1 ETSR and No. 48 to the Unit 2 ETSR, Section 5.1.2, limits responsibility of the EPC to non-radiological areas of environmental monitoring. The amended ETSR specifies that the Director, Water and Land Use, and the Director of the Biology Department have primary responsibility for execution of the non-radiological environmental surveillance programs, and these individuals

then report to the Vice President, Environmental Affairs, who is also Chairman of the EPC. Mr. John A. Nutant has replaced Mr. W. G. Kelleher as Vice President, Environmental Affairs.

The change to the ETSR described above also limits EPC responsibility for review and approval of procedures and temporary changes to procedures to those activities involved in carrying out Sections 2 and 3 of the ETSR.

b. PASNY

The licensee stated that responsibility for all environmental monitoring rests with the Radiological and Environmental Services Supervisor who reports to the site Resident Manager through the Superintendent of Power. The Resident Manager reports to the President & Chief Operating Officer through first Senior V.P-Nuclear Generation, and then the Executive V.P. & Director of Power Operations.

The inspector verified that any changes made offer the same or higher level of management controls as found during the previous inspections.

c. Licensee Audits

The licensee had been cited in Inspection Reports 50-03/78-06 and 50-247/78-19 for failing to respond to internal QA audit findings as required by procedure.

The inspector reviewed the responses to Con Ed Audit No. 77-A10 which were made subsequent to the last NRC inspection of this area (3/78-06; 247/78-19), and discussed these with the licensee. The inspector noted that all Audit No. 77-A10 items had since been addressed and corrective actions taken as appropriate.

The inspector also reviewed the following audits of non-radiological environmental monitoring programs.

<u>Audit No.</u>	<u>Audit Date</u>
79-10-B	December 12-21, 1979
79-10-A	April 5-29, 1979
78-10-B	November 29-December 19, 1978
78-A-10	June 23-July 12, 1978
77-A-10	March 25-April 27, 1977

The licensee stated that these audits were conducted according to procedure QSR-410 until August 29, 1978 and procedure QA-410-1 thereafter.

The inspector reviewed the following audits of the Nuclear Environmental Monitoring (NEM) program.

<u>Audit No.</u>	<u>Audit Date</u>
79-01-E	April 23-May 24, 1979
78-01-E	June 14-29, 1978

The inspector noted that PASNY QA personnel had participated in Audit No. 78-01-E. The licensee stated that audits of the NEM program were conducted according to procedures QSR-400 and QSR-401. The inspector reviewed these procedures and also reviewed Con Ed QA document CI-240-I, "QA Program Scope". The inspector determined that audit findings had been addressed and corrective actions taken as required and in a timely manner.

The inspector reviewed the PASNY QA procedures, QAP 18.1 and QAP 16.1 and the following PASNY QA Audits.

<u>Audit No.</u>	<u>Audit Date</u>	<u>Audit Subject</u>
SR-78-07	June 14, 1978	Collection of Air Samples
SR-78-08	June 14, 1978	Collection of Milk Samples
SR-79-09	March 14-22, 1979	Reporting Requirements of the Radiological Environmental Monitoring Program
SR-79-10	March 29-April 2, 1979	Radiological Environmental Monitoring Program Records

PASNY and Con Ed representatives stated that it is intended that PASNY QA personnel participate in the following scheduled Con Ed QA audits.

<u>Audit No.</u>	<u>Scheduled Date</u>	<u>Subject</u>
80-01-EB	November 30, 1980	Radiological Environmental Monitoring
80-10-B	December 31, 1980	Non-Radiological Environmental (Hydraulic)

No items of noncompliance were identified in the above area.

5. Licensee Program for Quality Control of Analytical Measurements

a. Radiological

The inspector determined through discussions with the licensee, review of applicable procedures, and review of the licensee's and contractor's quality control results since May 1978 that the quality control programs covered all sample media and had provisions for the:

- (1) Assignment of responsibility to manage and conduct the program;
and
- (2) Type and minimum number of quality checks to be performed.

The inspector noted that Procedure NEM-AD-08, Revision 3, "Quality Control Program", dated May 9, 1977 had not yet been amended to address an acceptance criteria for QC measurements nor the followup action on identified discrepancies. The licensee stated that these aspects of the quality control program were being developed and would be reviewed, approved and implemented by October 1, 1980. The inspector stated that this would be re-examined during a subsequent inspection (3/80-01-01; 247/80-10-01).

The licensee stated that the current QC program is being managed by NUS Corporation for Con Ed and includes at least 10% of sample load as QC samples. The inspector reviewed data from the 1978 and 1979 QC programs, which were managed by Con Ed. The inspector had no further questions in this area at this time.

b. Biological/Ecological

The inspector determined through discussions with the licensee that the quality control for the biological/ecological programs was provided, in part, through direct observations by cognizant Con Ed personnel over contracted services and by the contractor (Texas Instruments) through procedural requirements. The latter provided for assignment of responsibilities, for type and frequency of quality checks, for acceptance criteria and for followup on identified discrepancies. The inspector also verified through discussions with the licensee, the mechanisms employed to assure that required sampling and analyses were scheduled and performed in a timely manner.

The inspector had no further questions in this area.

6. Implementation of the Environmental Monitoring Program - Radiological

a. Direct Observation

The inspector examined selected air sampling stations and observed the changing of the air particulate and air iodine collection media, the recording of the required information for each sample, and the performance checks made on each sampler as it was returned to service. No deviations from the approved procedure were noted in this area.

The inspector also examined selected TLD, precipitation collection, and water collection locations and noted that those examined were located as required by the ETSR.

The inspector discussed with the licensee the methodology of radiological sampling of air. The inspector reviewed procedure NEM-D-10, Revision 2, "Calibration of Gas Meters" and noted that this procedure did not incorporate the actual methodology used for calibration of the gas meters used to measure sample volume for radiological air sampling. The licensee stated that the gas meters were calibrated by the Con Ed Meter Calibration Department according to that Department's calibration procedure and that the methodology used would be incorporated in procedure NEM-D-10. The inspector stated that this item would be reexamined when calibration methodology is incorporated into the appropriate procedure (3/80-01-02; 247/80-10-02).

The inspector discussed with the licensee the effects of fluctuations in ambient temperatures on the air sample volume measured by the gas volume meters. The inspector noted that the gas meters in use did not compensate for temperature fluctuations and the licensee stated that the gas meters were calibrated at 60°F. The licensee also stated that it is intended that temperature compensated gas meters will be purchased and installed as part of the radiological air monitoring system as soon as possible. The inspector stated that this item will also be reexamined during a subsequent inspection (3/80-01-02; 247/80-10-02).

The inspector discussed with the licensee the routine checks of air sampler lines for leaks. The inspector observed the licensee change air sampler cartridges and observed the routine check of the inlet sample line for leaks between the sample cartridge and the air pump. The inspector observed that leak checks were not performed on that part of the sample line carrying exhaust air from the pump to the gas volume meter. Leaks in this part of the sample line would result in less than actual sample volume measurements, which would therefore bias radioanalytical results toward "higher than actual", overly conservative, concentrations. The licensee stated that routine leak

checks of this section of the air sample line will be made in the future. The inspector stated that this item will also be reexamined in a subsequent inspection (3/80-01-02; 247/80-10-02).

b. Review of Reports

(1) Routine Reports

The inspector reviewed the following radiological reports as part of this inspection:

- Supplement to Annual Environmental Operating Report - Parts A and B, January 1, 1977-December 31, 1977.
- Annual Environmental Monitoring Report - Part B, January 1, 1978-December 31, 1978.
- Annual Environmental Monitoring Report - Part B, January 1, 1979-December 31, 1979.
- Annual Environmental Operating Report - Part B, Supplemental Report, January 1, 1979-December 31, 1979.

The inspector determined through discussions with the licensee, review of these reports, and review of data records, that the required information had been reported with the following exceptions. Section 4.2.1.1 and Table 4.2-1 of the ETSR require that Sr-90 analyses be performed once per year on drinking water and surface lake water. The inspector determined that these Sr-90 analyses were not performed during 1979 and stated that failure to perform these required analyses was an item of noncompliance with regulatory requirements. The inspector did note that Sr-90 analyses of these media were performed during 1978 and 1980 (3/80-01-03; 247/80-10-03).

The inspector determined that Amendment No. 21 to the Unit 1 ETSR and Amendment No. 45 to the Unit 2 ETSR were issued by the NRC and became effective on January 2, 1979. The inspector noted that although Section 4.2.1.1 and Table 4.2-1 of the Amended ETSRs required monthly drinking water samples to be collected and analyzed from Station No. 26, New York City Aqueduct, no samples were obtained from this station until May 21, 1979. The inspector stated that failure to collect and analyze the required drinking water samples was an item of noncompliance with regulatory requirements (3/80-01-04; 247/80-10-04).

The inspector noted that during 1979 there were numerous occasions when the MDAs (minimum detectable activities) required by Section

4.2.1.1 and Table 4.2-3 of the ETSRs were not met in various media. The inspector reviewed various correspondence between the licensee and Teledyne Isotopes which discussed methods of improving the achieved analytical MDAs. The licensee stated that Teledyne was already counting samples for as long as practical and that they were continuing efforts to lower MDAs to meet the specifications of the ETSR through further revisions of laboratory techniques. The licensee stated that problems in meeting the MDAs specified in the ETSR began when the NRC Staff's accepted method of LLD calculation (HASL 300 methodology) was adopted subsequent to NRC Combined Inspection 50-03/78-06 and 50-247/78-19. Prior to that time the licensee was using a method of calculating LLDs which resulted in larger preselected risk for falsely including background as net sample activity but which enabled calculated results to achieve the ETSR MDA values. The licensee stated that a request to revise the MDAs specified in Table 4.2-3 of the ETSR to more readily achieved values (values described in the NRC Branch Technical position on environmental monitoring) was submitted to the NRC on July 20, 1979. The inspector stated that the failure to meet the current MDA requirements of the ETSR would be considered unresolved pending completion of ongoing efforts by the licensee to achieve the required MDAs and/or approval of the licensee's ETSR change request by NRR (3/80-01-05; 247/80-10-05).

(2) Nonroutine Reports

The inspector reviewed the circumstances and licensee's evaluations relative to the anomalous measurement reports submitted to the NRC in letters dated July 9, 1979 (LER 79-019/04T) May 10, 1979 (LER 79-015/04T), April 18, 1979 (LER 79-002/04T), March 14, 1979 (LER 79-012/04T), and January 11, 1979 (LER 78-038/04T) for IP Units 1, 2, and 3 concerning tritium levels in precipitation samples from Eastview station, located 15 miles SE of the site. These reports were made because the tritium levels in Eastview precipitation exceeded the control station value by at least ten times. The inspector noted that at the time these measurements were made, the State of New York had become involved in investigating the source of the tritium which was attributed to a local manufacturer. The licensee stated that there had been no more anomalous tritium levels noted since April, 1979, until June of 1980. The licensee stated that the Eastview precipitation sample for June 1980 contained 3530 pCi/l of tritium and the control station precipitation sample contained 520 pCi/l tritium. The inspector noted that this value was less than ten times the control station value and well below the 10 CFR 20 Appendix B, Table II level of 3×10^6 pCi/l. The State of New York was informed of these results.

The inspector also reviewed the circumstances and licensee's evaluations relative to the anomalous measurement report submitted to the NRC in letters dated August 28, 1978 and January 2, 1979 (LER 79-023/04T). These reports concerned anomalous Cs-137 levels in aquatic vegetation taken from the Hudson River at Lovett on June 29, 1978. The licensee stated that other vegetation samples from the same station taken at the same time and samples of the same species from other stations taken at this time did not show unusual levels of Cs-137. The licensee attributed the anomalous measurement to contamination of the above sample in transit, and stated that a separate vehicle is now used to transport environmental samples to the licensee's contractor for analysis to reduce the possibility of contamination. The inspector examined the licensee's efforts to determine the cause of the anomalous Cs-137 measurement and reviewed radioanalytical results for samples of vegetation collected during 1979. The inspector had no further questions regarding this item at this time.

The inspector discussed with the licensee the criteria for determining reporting levels for anomalous measurements reports and reviewed procedure NEM-A-07, Revision 1, "Notification, Investigation, and Reporting of Abnormal Activity in Environmental Samples", dated October 11, 1977. ETSR Section 4.2.1.7 requires that a non-routine report be made in accordance with Section 5.6.2.2, Part B as indicated in Table 5.6-1 if a confirmed measured level of radioactivity in any environmental medium exceeds ten times the control station value. The licensee's procedure NEM-A-07 specifies that if there is no control station specified for a particular medium that the pre-operational data tabulated as part of that procedure be used as the "control station" value. This value must then be exceeded by a factor of ten at an indicator station in order for the indicator value to be considered reportable pursuant to ETSR Section 4.2.1.7. The inspector reviewed procedure NEM-C-06, Revision 4, "Collection, Preparation, and Counting of Hudson River Sediments", dated September 27, 1979 and noted that this procedure designated Manitou, Station #50, as a control. Procedure NEM-A-07, however, indicated that for Hudson River sediment samples the reporting level to be used was the pre-operational data. The inspector stated that this could allow ambiguity to be introduced into a decision as to which level was indeed the reporting level to be used. The licensee stated that procedure NEM-A-07 would be revised to incorporate all indicator stations specified for appropriate media and eliminate any ambiguity, approved, and implemented by November 1, 1980. The inspector stated that this area would be reexamined during a subsequent inspection (3/80-01-06; 247/80-10-06).

c. Other Records

The inspector reviewed selected results of analyses of the radiological monitoring program since May 1978 for media including air particulates, air iodines, aquatic and terrestrial vegetation, soil, sediment, fish, precipitation, drinking water, and surface and ground water. The inspector determined that except as described above, the required environmental samples had been collected and analyzed in accord with the ETSR. The inspector also reviewed minutes of the NFSC meetings held since May 1978 and had no further questions regarding the above area.

The inspector noted that the licensee had notified the NRC as required of changes in locations of milk sample locations by letters dated October 30, 1978, March 6, 1979, and July 19, 1979. The licensee indicated in these letters that Windsor Farm (10.1 miles ENE of plant) replaced Strawtown Dairy (7.0 miles SSW of plant), Shenandoah Farm (19.6 miles NNE of plant) replaced Crowley Milk Company (Newburgh, New York), and Hilltop Hanover Farm (8.9 miles ESE of plant) replaced Guard Hill Farm (10 miles ESE of plant). The licensee stated that these station changes had been described in a request for amendment to the ETSR submitted to the NRC on July 20, 1979. The inspector had no further questions regarding this item at this time.

d. Meteorological Monitoring

The inspector verified that the meteorological instrumentation was operational at the time of the inspection by direct observation at the meteorological tower and of the instrument read-outs in the Units 1 and 2 Control Room. The inspector reviewed instrument calibration procedures and records of calibrations performed since May 1978. No items of noncompliance were identified in this area.

7. Implementation of the Environmental Monitoring Program - Biological/Ecological

a. Direct Observations

The inspector examined selected portions of the Indian Point biological/ecological monitoring programs through discussions with licensee and contractor personnel, selected reviews of sampling and analytical procedures, and direct observation of impingement sampling and beach seine survey sampling. No items of noncompliance were identified in this area.

b. Reports and Records

(1) Routine

The inspector examined minutes of the EPC meetings held since May 1978 and the following reports relative to the biological/ecological studies:

- Annual Environmental Operating Report - Part A, January 1-December 31, 1979.
- Annual Environmental Operating Report - Part A, January 1-December 31, 1978.
- Supplement to Annual Environmental Operating Report - Part A, January 1-December 31, 1978.
- Supplement to Annual Environmental Operating Report - Part A, January 1-December 31, 1977.
- Indian Point Thermal Survey Program, Routine Monthly Thermal Monitoring, August 1977 Survey, Report 4.
- Indian Point Thermal Survey Program, Routine Monthly Thermal Monitoring, August 1978 Survey.
- Indian Point Thermal Survey Program, Routine Monthly Thermal Monitoring, September 1978 Survey, Report 5.
- 1978 Annual Report, Indian Point Generating Station Entrainment Survival and Related Studies.
- Hudson River Ecological Study in area of Facilities, 1978 Annual Report.
- Semiannual Progress Report Covering ETSR Section 5.6.1.2A (a) through (m), January 1-June 30, 1978.
- Semiannual Progress Report Covering ETSR Section 5.6.1.2A (a) through (m), July 1-December 31, 1978.
- Semiannual Progress Report Covering ETSR Section 5.6.1.2A (a) through (m), January 1-December 31, 1979.

The inspector identified no items of noncompliance relative to the above reports.

(2) Nonroutine

The inspector reviewed the circumstances and licensee's evaluations relative to LERs 78-024/04L and 79-001/04L concerning two releases of chromates to the Hudson River from Unit 2, dated September 22, 1978 and February 7, 1979. The inspector verified through discussions with the licensee and review of chemical discharge monitoring records that there were no increases in effluent chromate concentrations measured during these releases. The inspector had no further questions regarding these occurrences at this time.

The inspector also reviewed the circumstances and licensee's evaluation of three LERs concerning Unit 2 thermal discharges in excess of the ETSR Section 2.1.3.1 limits: LER 78-025/04L (September 27, 1978), LER 78-034/04L (December 13, 1978), and LER 79-005/04L (February 26, 1979). The licensee stated that each of these instances occurred because of errors in the method specified in the ETSR at that time for calculating the heat rejection rate to the Hudson River. The inspector noted that the calculational method in Section 2.1.3.1 of the Unit 2 ETSR for heat rejection rate had been revised in Amendment No. 47, effective February 15, 1979. The inspector had no further questions in this area at this time.

c. Procedures

Section 3.1.4.2 of the ETSR requires that observations be made to determine whether fish are undergoing thermal stresses from the rate of temperature change and that the results be reported to the NRC. The inspector reviewed the licensee's procedure POP 2.1, Revision 8, "Operation at Power" which discusses observation of thermally stressed fish on Page 2.1-5 in a note to Section 2.2.D. The note to this procedure specifies that observations shall be made "as soon as practicable" for thermally stressed fish at the discharge after the "rate of change of delta Tc" limit has been exceeded. The inspector stated that this unspecified time period within which observations are to be made could allow stressed fish to swim away or be washed away from the vicinity of the discharge before they are observed if too long a period elapses. The inspector also noted that the term "thermal stress" is not defined and therefore provided no guidance to operators on what to look for. The licensee stated that a requested change to the ETSR, submitted to the NRC on December 3, 1979, would eliminate the requirement to observe thermal stress. The inspector noted that this procedure was an unresolved item from a previous inspection and the inspector stated that this item would remain unresolved pending approval by NRR of the change to the ETSR or revision of the procedure by the licensee to clarify the time frame for observation and symptoms of fish thermal stress to observe (3/78-06-06; 247/78-19-06).

8. Nonradioactive Effluent Release Rates and Limits

a. Thermal

(1) Records

The inspector reviewed selected records of the thermal monitoring system made since May 1978 including charts showing intake and discharge temperature, site delta Tc, and rate of change of delta Tc. The inspector noted that Section 3.1.4.1 of the ETSRs require the rate of change of delta Tc to be determined by differentiation of delta Tc and be recorded during all flow conditions. The inspector determined through review of chart records of rate of change of delta Tc that there were periods when the rate of change of delta Tc was not recorded, including the following during 1980: April 29-May 19, May 20-24, May 26-30, June 4-9, and June 10-July 7. The inspector stated that failure to record the rate of change of delta Tc during all flow conditions was a recurrent item of noncompliance with regulatory requirements (3/80-01-07; 247/80-10-07).

The licensee stated that the rate of change of delta Tc was not determined by differentiation but by a method of determining the difference in delta Tc over five minute intervals. The licensee stated that a request had been submitted to the NRC on December 3, 1979 to change the ETSRs Section 3.1.4.1 requirements to eliminate the requirement to determine rate of change of delta Tc by differentiation and the requirement to record rate of change of delta Tc under all flow conditions. The inspector stated that compliance with the requirements for differentiation of delta Tc as the method of determination will be considered unresolved pending approval of a change to Section 3.1.4.1 of the ETSR (3/80-01-08; 247/80-10-08).

The inspector reviewed the records of calibrations of the thermal monitoring system completed since May 1978. The primary thermal monitoring system was calibrated as required according to Procedure PC-SA2, Revision 2, "River Water Temperature Monitoring System Calibration". The thermal monitoring system monthly functional check was performed monthly as required according to Procedure PT-M36, Revision 2, "River Water Temperature Monitoring System Functional Test". The inspector noted that these two procedures had been reviewed and approved as required. The inspector also reviewed the calibration records for the backup thermal monitoring system, which was performed annually as required according to Procedure IPC-I-032, Revision 3, "Temperature Recorder Calibration (Partlow)", and noted that this procedure had been reviewed and approved by the Con Ed EPC on October 10, 1978. The inspector had no further questions in this area at this time.

(2) Instrumentation

The inspector examined the installed river water thermal monitoring systems and verified that the various components and recorders were functioning as required at the time of the inspection.

c. Chemical Releases

The inspector reviewed the records of chemicals released at IP site since May 1978, examined selected sampling and analytical procedures and discussed selected results with the licensee. The inspector also reviewed the operation of the continuous discharge canal sampling system. The inspector also discussed with both PASNY and Con Ed representatives, the coordination between the two utilities in maintaining chemical releases within the ETSR site limitations. Both licensees indicated that this area was handled through plant-to-plant communications. The inspector had no further questions in this area at this time.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during this inspection are described in Details 6.b(1), 7.b(1), and 8.a(1).

10. Exit Interviews

On August 8, 1980, at the conclusion of the inspection the inspector met with the individuals denoted in Paragraph 1. During this meeting the purpose and scope of the inspection were summarized and the inspection findings, including the items of noncompliance and unresolved items were discussed. Additionally, on September 12, 1980 the inspector discussed noncompliances 3/80-01-07 and 247/80-10-07 with Mr. M. Shatkouski of Con Ed. The licensee acknowledged the items of noncompliance.