December 31, 2001

Mr. Robert J. Barrett
Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit 3
295 Broadway, Suite 3
Post Office Box 308
Buchanan, NY 10511-0308

SUBJECT: INDIAN POINT 3 NUCLEAR POWER PLANT - NRC INSPECTION REPORT 50-286/01-09

Dear Mr. Barrett:

On November 17, 2001, the NRC completed an inspection at the Indian Point 3 nuclear power plant. The enclosed report presents the results of that inspection. The results were discussed on December 5, 2001, with you and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green), one of which involved a violation of NRC requirements. These issues involved a failure to conduct triennial hydrostatic tests on self-contained-breathing-apparatus (SCBA) air cylinders, and a failure to monitor for potential degradation of underground cable splices. Because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating the SCBA issue as a Non-cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this Non-cited Violation, you should provide a response with the basis for your denial within 30 days of the date of this inspection report to, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 2055-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 2055-0001; and the NRC Resident Inspector at the Indian Point Unit 3 Nuclear Power Plant.

Since September 11, 2001, Indian Point Nuclear Generating Unit 3 has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts,

heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to Entergy Nuclear Operations, Inc.. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room **or** from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm.html (the Public Electronic Reading Room).

Sincerely,

/RA by Brian E. Holian
Acting For/

G. Scott Barber, Acting Chief
Projects Branch 2
Division of Reactor Projects

Docket No.50-286
License No. DPR-64

Enclosure: Inspection Report No. 50-286/01-09

Attachment: Supplemental Information

cc w/encl: J. Yelverton, Chief Executive Officer
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R. Schwartz, SRC Consultant
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R. Albanese, Executive Chair, Four County Nuclear Safety Committee
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Chairman, Standing Committee on Energy, NYS Assembly
Chairman, Standing Committee on Environmental Conservation, NYS Assembly
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-286

License No. DPR-64

Report No. 50-286/01-09

Licensee: Entergy Nuclear Northeast

Facility: Indian Point 3 Nuclear Power Plant

Location: 295 Broadway, Suite 3
Buchanan, NY 10511-0308

Dates: September 30 - November 17, 2001

Inspectors: P. Drysdale, Senior Resident Inspector
L. James, Resident Inspector
J. McFadden, Health Physicist
D. Silk, Senior Emergency Preparedness Inspector

Approved by: G. Scott Barber, Acting Chief
Projects Branch 2
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000286-01-09, on 09/30-11/17/2001, Entergy Nuclear Northeast, Indian Point 3 Nuclear Power Plant. Resident inspection report, radiation safety, emergency preparedness

The inspection was conducted by resident and regional inspectors. The inspection identified one Green Finding which was determined to be a Non-Cited Violation.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- GREEN. The licensee did not monitor for water intrusion or degradation of underground splices in electrical cables associated with mitigating systems. This finding is greater than minor because, if left uncorrected, degraded splices could increase the risk of loss of electric or control power to a mitigating system, and could result in a plant transient.

  This issue was determined to be of very low safety significance using the NRC's safety determination process (SDP) because no degradation was observed, and no equipment failures or transients had resulted from cable splice degradation (Section 1R06).

Cornerstone: Emergency Preparedness

- GREEN. A Non-cited Violation of 10 CFR 20.1703(c)(4)(vii) for failure to conduct triennial hydrostatic tests on approximately 80 self-contained-breathing-apparatus (SCBA) air cylinders.

  This finding is greater than minor because, if left uncorrected, inadequately tested respiratory protection equipment could have been used by personnel in the event of an emergency. This finding is of very low safety significance because unqualified equipment was not actually used, all of the affected air cylinders displayed the proper air pressure indicating that the cylinders maintained the requisite integrity, and a sufficient supply in excess of requirements was available for use. (Section 2OS3)

B. Licensee Identified Violations

There were no licensee identified violations.

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Report Details

SUMMARY OF PLANT STATUS

The Indian Point 3 Nuclear Power Plant remained at 100% power for the entire inspection period from September 30 through November 17, 2001. No significant equipment failures or events occurred during this time period.

1. REACTOR SAFETY
(Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness)

1R04 Equipment Alignment

a. Inspection Scope (71111.04Q and 71111.04S)

On October 2, 2001, the inspectors completed a partial walkdown of the 32 and 33 EDG mechanical and electrical systems to verify the availability of that equipment when the 31 EDG was out of service for preventive maintenance. The inspectors used check-off list COL-EL-5, "Diesel Generators," and flow diagrams 9321-F-20293, -20303, -27223, and -30083 to confirm that the engine fuel oil systems, air start systems, cooling systems, and electrical systems were configured to permit automatic start and operation of the EDGs.

On November 8, 2001, the inspectors walked down accessible portions of the 31 and 33 safety injection (SI) pumps and flow trains. During this inspection, the 32 SI pump was out of service to perform corrective maintenance (WR 01-03420-01) to repair a pump casing plug leak. The inspectors reviewed the equipment configuration designated on protective tagout 01-1718 to assure the 32 pump was properly isolated from the SI system, and that its isolation did not affect the availability of the 31 and 33 pumps. The inspectors also used check-off list COL-SI-1, "Safety Injection System," and flow diagram 9327-F-27503 to verify to correct alignment of valves and control room switches associated with the pumps, and the status of control room alarms during the maintenance on the 32 pump.

On November 13, 2001, the inspectors completed a full walkdown of accessible portions of the component cooling water (CCW) system to verify the correct equipment alignment for system operability at full power operations. The inspectors reviewed the following documents:

- Check-off list COL-CC-1, "Component Cooling System"
- System operating procedure SOP-CC-001B, "Component Cooling System Operation"
- Off-Normal operating procedure ONOP-CC-1, "Loss of Component Cooling"
- Design Basis Document IP3-DBD-308, "Component Cooling Water System"
- Technical Specifications and Bases Sections 3.7.8, "Component Cooling Water (CCW) System"
- Final Safety Analysis Report Section 9.3, "Auxiliary Coolant Systems"

The inspectors also reviewed outstanding maintenance activities, open work requests, outstanding corrective action program deficiencies, temporary modifications, and operator work-arounds associated with the CCW system and interviewed the system engineer and non-licensed operators regarding the operations of the CCW system.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope (71111.05Q)

The inspectors conducted fire protection tours in the fire zones listed below 1) to observe if the licensee had been controlling transient combustibles in accordance with fire protection procedure FP-9 “Control of Combustibles,” 2) to verify that the licensee had been controlling ignition sources in accordance with FP-8, “Controlling of Ignition Sources,” 3) to verify that the licensee had provided the fire protection equipment as specified in Pre-Fire Plans listed below; and 4) to assess the general material condition of the fire protection equipment and fire protection barriers.

- On October 22, 2001, the inspectors toured the 35 foot elevation of the turbine building under the main output generator. This area was affected by a small leak from the generator hydrogen coolers and required temporary ventilation to keep a high concentration from accumulating (Pre-Fire Plan 43, “General Floor Plan - Turbine Building 36ft-9in”).

- On October 26, 2001, the inspectors toured the 480 Volt switchgear room on the 15 foot elevation of the control building to assess the condition of fire protection equipment and convective air pathways in the room, and to identify the potential existence of transient combustible materials (Pre-Fire Plan 25, “480V Switchgear Room - Control Building”).

- On October 29, 2001, the inspectors toured the Fuel Storage Building to evaluate the existence of potential fire hazards (Pre-Fire Plan 20, “Fuel Storage Bay Area - Fuel Storage Building”).

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope (71111.06)

The inspectors reviewed FSAR Section 16.1 that described flood protection measures designed into the plant and flood mitigation equipment available to plant operators in the event of an internal flooding event caused from the potential break of a large pipe in the circulating water, condensate water, fire water, or city water systems.

The inspectors reviewed the licensee's proceduralized actions designated for response to an internal flooding event as described in operations directive OD-8, "Guidelines for Severe Weather," off-normal procedure ONOP-RW-3, "Plant Flooding," alarm response procedure ARP-7, "Panel SDF - Turbine Recorder," and maintenance procedure MET-002-GEN, "Location of Sandbags in Flood Warning Conditions."

The inspectors toured areas important to safety inside the plant to assess the condition of equipment intended to mitigate the consequences of internal flooding such as elevated berms, floor drains, and breakaway flood gates. Areas toured included the turbine building, the primary auxiliary building (PAB), and the auxiliary feedwater (AFW) pump room,

The inspectors reviewed the work request (WR 00-01619-00) and test procedure (3PT-R22) for the most recent functional test of the flood detection instruments (float switches LC-1240S and LC-1241S) on the 5 ft elevation of the turbine building (condenser trench). The float switches were installed to detect an 18 inch water level in the condenser trench, and to signal an alarm in the control room following a large condensate or circulating water system failure that could threaten the 6.9 KV switchgear on the 15 foot elevation of the turbine building. The test was satisfactorily performed on April 11, 2001, and is repeated every refueling outage. The inspectors also inspected the general areas around the condenser water boxes to verify that flood water flow paths were not obstructed and would direct water to the 5 foot elevation away from the 6.9 KV switchgear.

The inspectors noted that the licensee had identified several recent problems with floor drain blockage on the 15 foot elevation of the control building. The inspectors reviewed the DERs written over the past 12 months that were key worded for "flooding" and "drains," as follows:

DER 01-04168, Rust Discharged from Drains in 15ft Control Building"
DER 01-04067, Control Building Floor Drains - Debris Blown Out"
DER 01-03320, "Floor Drain Plugged in 480 Volt Switchgear Room" on the 15 foot elevation of the control building
DER 01-02163, "TCV-1103 Leaky Flange Rework"

The inspectors toured external areas of the site to observe areas of water accumulation, storm drainage paths, and areas where potential blockage could occur. The inspectors also observed the locations of storm drains and their proximity to underground cable vaults. Electrical engineering personnel provided the inspectors with a general schematic diagram of all buried cable routes on site, and also provided the manufacturer's design specifications and qualifications for buried power cables, control cables, and cable splices for service in a ground water environment.

b. Findings

During tours of external plant areas, the inspectors requested that the licensee remove four manhole covers to assess the general condition of underground cables and splices, and to inspect for possible accumulation of water in the manhole pits. The inspectors observed that a large amount of water had accumulated inside two manhole pits near the service water intake structure. These pits contained numerous cable bundles that supplied power to service water pumps and strainers, circulating water pumps, traveling screens, and screenwash pumps. All of the cables in these pits were completely submerged in water. It was not possible to identify each of the cables visually, but some of them had visible splices that were completely submerged. The inspectors also observed that a manhole pit near the main output transformers contained a large number of cable bundles that were completely submerged. Many of these cables had splices, but they also could not be identified visually. The licensee had stated that buried safety-related cables on site did not have any splices; however, there were no records on site which verified that the existing splices in systems important for mitigating a plant transient (e.g., circulating water pumps) were actually installed in accordance with the manufacturer's specifications.

The licensee subsequently pumped all the water out of the opened manhole pits and performed a visual inspection of the cables and splices for degradation. No degradation was observed; however, the licensee initiated DER 01-04270 to investigate the source of the water, and to specifically identify which cables contained splices. The licensee stated that no recent equipment performance problems were evident that could be attributed to underground cable or splice degradation.

The inspectors noted that the licensee did not have a planned periodic activity to inspect manhole pits for water accumulation, and did not have a preventive maintenance activity to inspect underground cables and splices for degradation. At the end of the inspection period, the licensee was developing a plan to initiate those activities and to perform an extent-of-condition review on buried cables and splices for other equipment important to safety such as the Appendix R diesel generator.

The lack of inspection records which could confirm that existing splices were installed in accordance with the manufacturer's specifications for service in a ground water environment; and the lack of a preventive maintenance activity to inspect for potential degradation in buried cable splices represents a Green finding. The issue is more than minor because, if left uncorrected, degraded underground cable splices could increase the risk of ground water intrusion, and the risk of subsequent electric or control power failures in equipment important to safety. Such conditions could degrade the ability of mitigating systems to perform their functions, or result in an electrical fault that could cause a plant transient.

1R12 Maintenance Rule Implementation

a. Inspection Scope (71111.12)

The inspectors reviewed the following systems and performance issues to assess the effectiveness of the maintenance program. Using 10CFR50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," and Regulatory Guide 1.1.60, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," the inspectors verified that the licensee was implementing their maintenance program in accordance with NRC regulations and guidelines; properly scoping of the system within the maintenance rule; proper classification of failures of structures, systems, and components (SSCs); proper classification of SSCs into 10 CFR 50.65 (a)(1) and (a)(2) status; and appropriate performance criteria for (a)(2) systems or the improvement plan for (a)(1) systems.

- 34 Reactor Coolant Pump Seal Outlet Temperature Indicator (TI-125) Fluctuating (Problem Identification (PID) 03393)

- Wide Range Temperature Element for Cold Leg Loop 34 TE-443B had been drifting (PIDs 03391, 03924, and 03930)

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work

a. Inspection Scope (71111.13)

The inspectors reviewed the maintenance risk assessments and corrective maintenance work packages for the following emergent work, and discussed the deficient conditions with cognizant personnel (system engineers, maintenance technicians, and work planners). The inspectors evaluated the licensee's revisions to the daily plant risk profile (i.e., changes to the conditional core damage probability) and changes to the scheduled sequence of preplanned activities resulting from the emergent work:

- Unplanned loaded run of the 32 EDG: On November 13, 2001, the licensee ran the 32 EDG to troubleshoot an air leak in the engine inlet valve lubricating system. This emergent work would have coincided with a scheduled surveillance of the containment fan cooler units; however, the licensee delayed the fan cooler work so that the two activities would not be performed concurrently.

- Extent-of-condition review for a loose nut on the 31 EDG oil pump: On October 3, 2001, the 31 EDG was out of service for planned maintenance (diagnostic testing) when a loose lock nut was identified on the engine-driven oil pump shaft that could have resulted in an engine failure (DER 01-03780). Given the potential significance of this problem, the licensee considered sequentially removing each of the other diesels from service to perform an immediate inspection of the corresponding locking nuts. However, the licensee performed a

risk analysis for having two EDGs inoperable with the plant at 100% power. The analysis indicated the conditional core damage probability (CDP) would exceed the nominal CDP and the licensee's risk threshold (E-6). The licensee concluded that ongoing maintenance on the 31 EDG must be completed prior to removing the other diesels from service for an inspection. Following return of the 31 EDG to service, the licensee inspected the oil pumps on the 32 and 33 EDGs, and the Appendix R diesel for a potential common cause failure associated with the oil pump shaft nuts. The investigations revealed that the corresponding nuts on the other three engines were properly torqued.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15)

The inspectors reviewed various DERs on degraded or non-conforming conditions that raised questions on equipment operability. The inspectors reviewed the resulting operability determinations (ODs) for technical adequacy, whether or not continued operability was warranted, and to what extent other system degradations adversely impacted the affected system or compensatory actions. The following DERs, calculations, and ODs were evaluated:

- OD 01-039 Operability of the 33 EDG with Leaking Fuel Pump Gaskets: Approximately 1 liter/minute leakage of fuel oil through the gaskets on the pump's "banjo bolts" occurred on initial engine start. The leakage stopped when the engine warmed up, and all of the leakage was retained within a retention tank. The leakage did not affect operation of the engine before and after it was loaded.

- OD 01-040 Pinhole Leak between Containment Wall and Service Water Valve SWN-44-3: An auxiliary operator discovered a one drop per minute pinhole leak on the service water outlet line from the 33 containment fan cooler unit. The licensee performed non-destructive testing in the area of the leak and performed a pipe stress analysis to determine operability of the pipe. The results concluded that flaw was minor and did not affect operability. The licensee also used criteria contained in ASME Code Case N-513 to determine that the leak was minor and could be repaired during a future outage.

- OD 01-041 EDG 32 Starting Air System Leakage During Engine Operation: The air inlet valve lubricator was isolated to perform troubleshooting. The lubrication system was not vital to engine operation and did not affect EDG operability.

- OD 01-042 EDG 31, 32, & 33 Air Consumption: The total air consumption of the inlet valve lubrication system could deplete the air start accumulator during engine operation within 13.1 hours after a loss of offsite power and subsequent loss of the air compressor. Without air makeup, the EDG ventilation system outlet dampers would eventually fail closed, and the EDG engine could overheat. The licensee concluded that 13.1 hours was sufficient time to block open the dampers to prevent overheating in the EDG room, and initiated a temporary procedure change (TPC 01-0545) to alarm response procedure ARP-019, "Panel Local - Diesel Generators," requiring operators to block open exhaust louvers if air to the louvers or the room temperature control panel is lost.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope (71111.19)

The inspectors reviewed post-maintenance test (PMT) procedures and associated testing activities to assess whether 1) the effect of testing in the plant had been adequately addressed by control room personnel, 2) testing was adequate for maintenance performed, 3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing documents, 4) test instrumentation had current calibrations, range, and accuracy for the application, and 5) test equipment was removed following testing. The following surveillance activities were evaluated:

- WR 00-04796-00: Preventive Maintenance performed on 32 Safety Injection Pump Motor

  On October 1, 2001, the inspectors reviewed the PMT documentation for the preventive maintenance (PM) performed on 32 safety injection (SI) pump motor. The inspectors verified that the PMT demonstrated functional capability of the 32 SI pump as delineated in the design basis document IP3-DBD-306, "Safety Injection System," and in Technical Specification 3.5.2, Emergency Core Cooling Systems - Operating.

- WR 01-00366-01: Post Maintenance Test for Boric Acid Transfer Pump Preventive Maintenance

  On October 11, 2001, the inspectors reviewed the PMT documentation for the PM inspection performed on the 32 boric acid transfer pump (BATP) under WR 01-00366-00. The inspectors verified that the PMT demonstrated functional capability of 32 BATP as delineated in the Final Safety Analysis Report section 9.2, Chemical and Control Volume System, and in Technical Requirements Manual 3.1.C, Boration Systems.

- WR 01-00455-01; Post-Maintenance Test following the 2-Year Preventive Maintenance on the 32 EDG

  The test was performed on October 24, 2001, and the results demonstrated satisfactory completion of the maintenance performed. No significant issues resulted from the PMT; however, the compressor for the engine air start system cycled approximately every 10 minutes between 295 - 285 psig during the test (DER 01-04036). The licensee subsequently conducted troubleshooting to evaluate this problem. The leakage occurred through the engine inlet valve lubrication system, which was isolated and had no impact on engine operation.

- WR 01-03420-01; Post-Maintenance Test following Corrective Maintenance on the 32 Safety Injection Pump

  On November 08, 2001, a plug on the 32 safety injection pump casing developed a leak of 20 ml/min (approximately 0.32 gallons/hour). This represented approximately two-thirds of the total emergency core cooling system (ECCS) leakage outside containment at that time. The licensee initiated DER 01-04202 to document the deficiency, performed corrective maintenance to remove the casing plug and to replace its seal, and then ran the pump to test for leakage. Although the seal continued to leak a very small amount, the leakage was reduced to approximately 0.1 ml/min when the pump was running. This leakage did not affect operability of the pump and significantly reduced ECCS leakage outside containment. The licensee intends to investigate replacement of the seal with an alternate design, or to install a vent valve to replace the plug and seal completely.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope (71111.22)

The inspectors observed portions of the following surveillance tests and reviewed the surveillance test procedures to assess whether 1) the test preconditioned the component(s), 2) the effect of testing was adequately addressed in the control room, 3) the acceptance criteria demonstrated operational readiness consistent with design

calculations and licensing documents, 4) the test equipment range and accuracy was adequate with proper calibration, 5) the test was performed in the proper sequence, and 6) the test equipment was removed following testing.

- 3PT-Q22 "Residual Heat Removal System Valves" (October 22, 2001)
- 3PT-M62 "480V Undervoltage/Degraded Grid Protection System Functional" (October 17, 2001)
- 3PT-Q120C "33 ABFP (Motor Driven) Surveillance and IST" (October 25, 2001)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope (71111.23A)

The inspectors reviewed the work package for one temporary modification (TM)

- TM 01-04455-02: Isolation of 32 EDG Inlet Air Valve lubrication system. Based upon the design and purpose of the inlet valve lubrication system, and the ability of the engine to function without it, isolation of the system did not affect operability. The temporary modification permitted the engine air start system to maintain a constant pressure without losses when the engine was operating.

b. Findings

There were no findings identified during this inspection.

Emergency Preparedness (EP)

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspectors conducted an in-office review of licensee submitted changes for the emergency plan-related documents listed below to determine if the changes decreased the effectiveness of the plan. A thorough review was conducted of documents related to the risk significant planning standards (RSPS), such as classifications, notifications and protective action recommendations. A cursory review was conducted for non-RSPS documents. The submitted and reviewed documents were as follows:

Emergency Plan

Section 1, Definitions/Acronyms, Rev 31
Section 2, Scope and Applicability, Rev 31

Section 3, Overview of the IP-3 Emergency Plan Procedures, Rev 30
Section 4, Emergency Conditions, Rev 37
Section 5, Organizational Control of Emergencies, Rev 34
Section 6, Emergency Measures, Rev 33
Section 7, Emergency Facilities and Equipment, Rev 33
Section 8, Maintaining Emergency Preparedness, Rev 35
Section 9, Recovery, Rev 3
Appendix A, Letters of Agreement, Rev 0
Appendix B, Time-Dose-Distance Plots, Rev 29
Appendix C, Evaluation of Core Degradation Using Containment Accident Monitors, Rev 29
Appendix D, Listing of Immediate Action Guidelines and Implementing Procedures, Rev 31
Appendix E, NUREG-0654, Rev. 1; IP-3 Emergency Plan Cross Reference, Rev 30
Appendix F, Stored Emergency Plan Equipment and Supplies, Rev 30
Appendix G, Evacuation Plan for Westchester, Rockland, Orange, and Putnam Counties, Rev 29

Implementing Procedures

IP-1038, Offsite Emergency Notification, Rev 26
IP-1059, Air Raid Alert, Rev 7
IP-1076, Roster Notification Methods, Rev 25

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope (71114.06)

On October 31, 2001, the licensee conducted an “off year” annual emergency preparedness exercise. The inspectors observed the drill from the onsite simulator facility to evaluate the adequacy of drill performance, and attended the post-drill critique to assess the licensee’s identification of weaknesses and deficiencies. The drill involved simulation of an intense weather storm at the Indian Point Station that caused significant damage to the onsite electrical distribution systems and challenged operators’ abilities to restore vital electrical power. The scenario also included a simulated fire at the Appendix R diesel generator, and a simulated search and rescue for an individual that was unaccounted for.

The evolution of the drill scenario required simulated classifications for an Alert and a Site Area Emergency, required progressive activation of the Technical Support Center (TSC) the Operations Support Center (OSC), the Alternate Emergency Operations Facility (AEOF), and the Joint News Center (JNC).

The inspector observed the progression of events during the simulated scenario and witnessed operators make the appropriate emergency classifications and notifications.

However, the inspectors also noted that the scenario did not generally progress as planned in that the operators declared a general emergency when it appeared that vital electrical power could not be restored. As planned, the simulated emergency was not expected to go beyond a site area emergency, since restoration of a vital electrical bus was expected in less than one half hour. However, the exercise controllers did not provide sufficient information to the operators to indicate that restoration of a vital electrical bus would be possible.

The inspector attended the post-exercise critique and noted that the licensee had identified inadequate controls on the part of the exercise controllers. The critique was comprehensive and provided a detailed review of other deficiencies, also identified by the licensee, as documented in the following DERs:

DER 01-04111, Failure to Control Exercise
DER 01-04112, Scenario Did Not Provide Enough Details to the ERO
DER 01-04113, I&C and Ops Personnel did not Adhere to the Accountability Process
DER 01-04114, JNC Objectives not Met.
DER 01-04120, Weaknesses in the Simulator Crew.

With the exception of issues related to staffing, and untimely notifications from the Joint News Center, all of the objectives for the scenario were achieved. However, the licensee developed a series of actions to address the deficiencies noted prior to the next scheduled exercise.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control To Radiologically Significant Areas

a. Inspection Scope (71121.01)

The inspectors reviewed the effectiveness of access controls to radiologically significant areas.

The inspectors toured the radiologically-controlled-areas (RCAs) including: various elevations of the primary auxiliary and RAMS buildings and outside areas within the protected area and the health physics (HP) access control point. During these walkdowns, the inspectors observed and verified the appropriateness of the radiological safety controls in place for active radiological work permits (RWPs). Also, the inspectors reviewed the locking, posting, barricading, and labeling, as appropriate; of radiation and high radiation areas, contamination areas, and radioactive material areas. The status of locked High Radiation Areas was also reviewed. The inspectors also observed activities at the main RCA access control point to verify compliance with

requirements for RCA entry and exit, wearing of record dosimetry, and issuance and use of alarming electronic radiation dosimeters. The inspectors evaluated the effectiveness of a pre-job radiation safety briefing for a containment entry at power on October 24, 2001

The inspection included a review of the following RWPs, procedures, records, and documents to evaluate the adequacy of controls for access to radiologically-controlled areas including the expected response to electronic radiation dosimeter alarms and controls for radioactive contamination outside the main RCA:

RWP 01-009,	Assessments in the RCA, Rev. 2
RWP 01-028,	Containment Entry-Reactor Critical, Rev. 1
RWP 01-011,	Health Physics Calibration-Routine, Rev. 1
RE-ADM-1-5,	RES Assessment, Rev. 11
RE-REA-4-1,	Radiation Work Permit (RWP), Rev. 16
RE-ADM-4-2,	Radiation Work Permit (RWP) Computer System, Rev. 5
RE-ACC-5-2,	Instructions to Control Point Personnel, Rev. 13
RE-INS-7UG-4,	Use of Merlin-Gerin DMC-100 Dosimeters, Rev. 6
RE-REA-4-6,	Containment Entry at Power or Initially After Shutdown, Rev. 13
RE-SUR-6-1,	Radiation Surveys, Postings, and Assessment, Rev. 12
RE-SUR-6-2,	Contamination Surveys, Postings, and Assessment, Rev. 10
RE-SUR-6-6,	Health Physics Periodic Task Scheduling, Rev. 13
RE-ADM-1-21,	Mixed Waste Management Program, Rev. 1
RE-EP-13-11,	Hazardous Waste Inspections, Rev. 6
RE-ADM-1-22,	Site Soil Characterization, Rev. 0
ICP-DD-01,	Work Package Planning, Rev. 11
RE-CON-3-4,	Release of Material from the Rad. Controlled Area, Rev. 10
RES-SD-05,	Rad. Control of Volumetric Materials Leaving the Site, Rev. 1
RE-CCI-037,	Analysis of volumetric material for free release, Rev. 3

IP3 Radiological and Environmental Services Department, Annual Self-Assessment Report, July 2000 to July 2001, dated July 13, 2001

IP3 Radiological and Environmental Services Department, Focused Self-Assessment Report, Contamination and Radioactive Material Control, dated October 15, 2001

Indian Point 3 nuclide mix evaluation report - 1998, TID-99-002, Rev. 0
Mixed waste weekly inspection log sheet records for October 3, 10, 17, and 24, 2001.

Letter titled “Implementation of 10 CFR 50.75(g)” (Reporting and recordkeeping for decommissioning planning), dated December 22, 1997 (IP-RES-97-256).

Decommissioning Planning: Soil Characterization and Remediation, TID 95-002, Rev. 0

10 CFR 50.75(g) Status Report for IP3, dated November 8, 1999.

The review of the above-cited documents and activities was against criteria contained in: Title 10 of the Code of Federal Regulations (CFR) Parts 20.1201 (Occupational dose

limits for adults), 20.1204 (Determination of internal exposure), 20.1208 (Dose equivalent to an embryo/fetus), Subpart F (Surveys and monitoring), 20.1601 (Control of access to high radiation areas), Subpart H (Respiratory protection and controls to restrict internal exposures in restricted areas), 20.1902 (Posting requirements), site Technical Specification 6.12 (High Radiation Area), and site procedures (identified above in this section).

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Control

a. Inspection Scope (71121.02)

The inspectors reviewed the effectiveness of ALARA (As Low As is Reasonably Achievable) planning and control.

The inspectors reviewed the following procedures, records, and documents for regulatory compliance and for adequacy of control of radiation exposure:

Radiation Protection Plan (AP-7), Rev. 24
Operation of Portable Ventilation System (RE-REA-4-10) Vent Carts, Rev. 6
ALARA Report for Refueling Outage No. 11
ALARA Committee Meeting Minutes for August 28, 2001
Second Quarter Review of Station ALARA Program
Third Quarter Review of Station ALARA Program
IP3 Outage Dose Reduction Project Action Plan IRES-APL-01-003, October 2001

The inspectors also reviewed the dose estimates versus actual exposures incurred and the post-job ALARA reviews for the following RWPs used during refueling outage no. 11 for regulatory compliance, and for the adequacy of the planning to minimize radiation exposure:

RWP 01-221, I&C Support for Reactor Head Work
RWP 01-233, Work on Reactor Coolant Pump (RCP) Motors
RWP 01-235, Removal and Replacement of No. 34 RCP Rotating Element
RWP 01-244, Secondary Side Steam Generator Sludge Lancing and Bundle Flush
RWP 01-260, Non-regenerative Heat Exchanger Gasket Replacement

The inspectors' review was against criteria contained in 10 CFR 20.1101 (Radiation protection programs), 10 CFR 20.1701 (Use of process or other engineering controls) and site procedures identified above.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope (71121.03)

The inspectors reviewed the program for health physics instrumentation and for installed radiation monitoring instrumentation to determine the accuracy and operability of the instrumentation. Also reviewed was the program to provide self-contained breathing apparatus (SCBA) to occupational workers.

During plant tours, the inspectors reviewed field instrumentation utilized by health physics technicians and plant workers to measure radioactivity and radiation levels, including portable field survey instruments, hand-held contamination frisking instruments, and continuous air monitors. The inspectors conducted a review of the instruments observed in the toured areas, specifically verification of current calibration, of appropriate source checks, and of proper function. The inspectors evaluated the calibration records for Eberline RO-2/-2A Survey Meters, dated September 10-20, 2001; and the following procedures for regulatory compliance and adequacy.

RE-ADM-1-10,	Portable Instrumentation Calibration Protocols, Rev. 6
RE-INS-7CA-1,	Calibration of RO-2 and RO-2A Ion Chambers, Rev. 5
RE-INS-7CA-12,	Calibration of the Eberline 6112 Teletector, Rev. 6
RE-INS-7CA-14,	Calibration of Ludlum 177 and Eberline RM-14 Friskers, Rev. 6
RE-INS-7CA-17,	Frisker Probe Efficiency Check, Rev. 8
RE-INS-7CB-1,	Calibration of Portable Air Samplers, Rev. 8
RE-INS-7CC-8,	Calibration of the Eberline AMS-4 Using Windows, Rev. 4
RE-INS-7CD-7,	Calibration and Use of the MGP Telepole, Rev. 0
RE-INS-7UC-8,	Use of the Eberline AMS-4 Continuous Air Monitor, Rev. 2
RE-INS-7UA-1,	Use of Portable Ion Chamber Instrumentation, Rev. 7
RE-INS-7UA-2,	Use of Portable GM Survey Instrumentation, Rev. 7

The inspectors identified and noted the condition and operability of selected installed area and process radiation monitors, and any accessible local response information on those monitors. The inspectors also interviewed the system engineer for the installed radiation monitoring system and reviewed for compliance and adequacy the following procedure and calibration record for an installed process radiation monitor.

RE-INS-7UD-6, Plant Radiation Monitors (ARMs/PRMs), Rev. 7
Process Radiation Monitor R11 Calibration Record dated July 30, 2001

The inspectors reviewed the adequacy of the program to provide SCBA for entering and working in areas of unknown radiological conditions. The inspection included a review of the status and surveillance records of bottled-breathing-air-cylinder stations, of SCBA air bottles, and of SCBA with air bottles attached and staged and ready for use in the plant. The inspectors also reviewed the status of training and qualification in the use of SCBA for operations and security personnel. The following procedures and documents were examined in the course of this review for regulatory compliance and adequacy.

AP-7.2, Respiratory Protection Program, Rev. 4
EP-ADM-05, Emergency Plan Equipment Inventory Administrative Procedure, Rev. 10
FP-13, Inspection and Testing of Self-contained Breathing Apparatus, Rev. 10

Respirator Qualification Status Records for Operations and Security Personnel; dated October 24, 2001

The inspectors' review was against criteria contained in 10 CFR 20.1501, 10 CFR 20 Subpart H, site Technical Specifications, and site procedures.

b. Findings

A Green non-cited violation was identified involving failure to conduct triennial hydrostatic tests on approximately 80 self-contained-breathing-apparatus (SCBA) air cylinders.

The inspectors identified this issue when comparing the periodic checks performed on bottled-breathing-air-cylinder stations in accordance with procedure EP-ADM-05, "Emergency Plan Equipment Inventory Administrative Procedure," to the periodic checks performed on SCBA air bottles in accordance with procedure FP-13, "Inspection and Testing of Self-contained Breathing Apparatus." EP-ADM-05 included a check on the currency of the cylinder hydrostatic test date while the latter procedure did not. The inspectors identified this fact and inquired how the licensee ensured that SCBA air cylinders were within their hydrostatic test frequency. During a subsequent sampling inspection of SCBA air cylinders, the licensee identified that several cylinders were outside their hydrostatic test frequency. In determining the extent of the condition, the licensee subsequently identified a total of approximately 80 SCBA air cylinders which were overdue for hydrostatic testing, some by more than a year. This number represented approximately 25 percent of the total number of SCBA air cylinders available for use. The licensee removed all affected cylinders from service and replaced them with qualified cylinders.

10 CFR 50.54(q) requires that emergency plans meeting the standards in 50.47(b), be followed and maintained in effect. 10 CFR 50.47(b)(8) requires that the onsite emergency response plans provide and maintain adequate emergency equipment to support the emergency response. Section 7.4.2 A, of the Emergency Plan provides for protective equipment specifically designated for emergency use including respiratory protective devices. Emergency Plan implementing procedure IP-1070, Rev. 31,

specified that the Emergency Planning Coordinator or designee ensure that adequate supplies and equipment are specified in procedure EP-ADM-05. Procedure EP-ADM-05, provided for conduct of checks of bottled-breathing-air-cylinder stations while procedure FP-13 provided for inspection of SCBA bottles. Neither procedure ensured that the periodic hydrostatic test date for SCBA cylinders was checked to ensure that SCBA cylinders used for emergency response do not have expired tests and are qualified for use. 10 CFR 20.1703(c)(4)(vii) requires that a respiratory protection program be implemented and maintained that includes written procedures regarding storage, issuance, maintenance, repair, testing, and quality assurance of respiratory protection equipment. The failure to implement adequate quality assurance and maintenance procedures to ensure that respiratory protection equipment is properly tested and maintained is contrary to 10 CFR 50.54 (q) and 10 CFR 20.1703(c)(4)(vii).

The licensee uses SCBAs as emergency response equipment. Consequently, this finding was evaluated under the Emergency Preparedness Significance Determination Process. This finding is greater than minor because, if left uncorrected, inadequately tested and maintained respiratory protection equipment could have been used by personnel in the event of an emergency. This finding was determined to be of very low safety significance (GREEN), because, although it involved a failure to maintain emergency response equipment in accordance with regulatory requirements, it did not result in the licensee's failure to meet a planning standard since unqualified equipment was not actually used, all of the affected air cylinders displayed the proper air pressure indicating that the cylinders maintained the requisite integrity, and a sufficient supply (in excess of requirements) was available for use. The licensee placed this issue into its corrective action system as DER 01-04041.

The inspectors identified that because this violation of 10 CFR 20.1703 (C)(4)(vii) is of very low safety significance and because it is in the licensee's corrective action process (DER 01-03577), this violation was being treated as a Non-Cited violation consistent with Section VI.A of the NRC Enforcement Policy issued May 1, 2000 (65FR25368). **(NCV 50-286/01-09-01)**

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

a. Inspection Scope (71151)

Reactor Coolant System Specific Activity

The inspectors reviewed the licensee's sample and analysis data used to report the reactor coolant system (RCS) specific activity performance indicator for the first and second quarters 2001 against the applicable criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Rev 1. In addition to record reviews, the inspectors observed a chemistry technician obtain an RCS sample on November 13, 2001.

Occupation Exposure Control Effectiveness

The inspectors selectively examined records used by the licensee to identify occurrences involving high radiation areas, very high radiation areas, and unplanned personnel exposures for the time period from mid-May 2001 to late October September 2001 against the applicable criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Rev 1, to verify that all conditions that met the NEI criteria were recognized and identified as Performance Indicators. The reviewed records included corrective action program records (Deviation/Event Reports) and issues captured by procedure RE-UOE-14-4, "Radiological Event Classification and Investigation." In conjunction with the reviews documented in previous inspection reports, this examination covered the intervening period back to late March 2001.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

On December 5, 2001, the inspectors presented the inspection results to Mr. R. Barrett and other Entergy staff members who acknowledged the inspection results presented. The inspectors asked Entergy personnel whether any materials evaluated during the inspection were considered proprietary. No proprietary information was identified.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

a. Key Points of Contact

K. Baumbach	Site Surveillance Coordinator
R. Barrett	Vice President, Operations - IP3
J. Barry	Sr. Radiological Engineer
R. Burroni	I&C Manager
R. Cavalieri	Outage and Planning Manager
J. Comiotes	Director, Safety Assurance
E. Danko	Licensing Engineer
J. DeRoy	General Manager of Plant Operations
R. Deschamps	Radiation Protection Manager/RES Dept. Manager
J. Donnelly	Licensing Manager
M. Gillman	Operations Manager
D. Gray	Senior Radiological Engineer-Environmental
B. Kyler	ALARA Specialist
R. LaVera	Sr. Radiological Engineer
J. LePere	Waste Management General Supervisor
F. Mitchell	HP General Supervisor
J. Perrotta	Quality Assurance Manager
K. Peters	Corrective Actions and Assessment Manager
T. Phillips	Waste Management Supervisor
C. Putnam	System Engineer, Radiation Monitoring Systems
E. Reagan	Waste Management Operator
R. Rodino	Radiological Engineer
J. Russell	Special Projects Manager
S. Sandike	Plant Chemistry
M. Smith	Director, IP-3 Engineering
R. Solano	HP Supervisor
R. Tagliamonte	Waste Management Supervisor
S. Van Buren	Fire Program Administrator
A. Vitale	Maintenance Manager
J. Wheeler	Training Manager

b. List of Items Opened, Closed, and Discussed

Opened

50-286/01-09-01	NCV	Failure to hydrostatically test self-contained-breathing-apparatus air cylinders. (Section 2OS3)

Closed

None

Opened/Closed

None

c. List of Acronyms

ABFP	auxiliary boiler feedwater pump
AEOF	Alternate Emergency Operations Facility
ALARA	As Low As Reasonably Achievable
ARP	alarm response procedure
ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
COL	check-off list
CCW	component cooling water
DBD	design basis document
DER	Deviation/Event Report
EDG	emergency diesel generator
EP	Emergency Preparedness
ERO	Emergency Response Organization
FP	fire protection
FSAR	Final Safety Analysis Report
HP	health physics
HRA	High Radiation Area
JNC	Joint News Center
LHRA	Locked High Radiation Area
IR	inspection report
ml	milli-liter
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OD	operability determination
ONOP	off-normal operating procedure
OS	occupational radiation safety
OSC	Operations Support Center
PI	performance indicator
PID	problem identification
PMT	post-maintenance test
RCA	radiological controlled area
RCP	reactor coolant pump
RCS	reactor coolant system
RSPS	Risk Significant Planning Standard
RWP	radiation work permit
SCBA	self-contained breathing apparatus
SI	safety injection
SOP	system operating procedure
SSCs	structures, systems, and components
TS	Technical Specifications
TSC	Technical Support Center
WR	work request