February 5, 2004

Mr. Fred Dacimo
Site Vice President
Entergy Nuclear Northeast
Indian Point Energy Center
295 Broadway, Suite 1
Post Office Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 - NRC INTEGRATED INSPECTION REPORT 050000247/2003012

Dear Mr. Dacimo:

On December 31, 2003, the US Nuclear Regulatory Commission (NRC) completed an inspection at the Indian Point Nuclear Generating Unit 2 (Indian Point 2). The enclosed integrated inspection report documents the inspection results, which were discussed on January 9, 2004, with Mr. Schwarz and other members of your staff.

The inspection examined 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 one finding of very low safety significance (Green). The finding was determined to be a violation of NRC requirements. However, because of the very low safety significance and because the issues has been addressed and entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you deny this NCV, you should provide a response with the basis for your denial within 30 days of the date of this letter, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-001; with copies to the Regional Administrator, Region 1; the Director, Office of Enforcement; and the NRC Resident Inspector at Indian Point 2 facility.

Since the terrorist attacks on September 11, 2001, NRC has issued five Orders and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over access authorization. In addition to applicable baseline inspections, the NRC issued Temporary Instruction 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures," and its subsequent revision, to audit and inspect licensee implementation of the interim compensatory measures required by order. Phase 1 of TI 2515/148 was completed at all commercial power nuclear power plants during calendar year 2002 and the remaining inspection activities for Indian Point 2 were completed in January 2003. The NRC will continue to monitor overall safeguards and security controls at Indian Point 2.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) 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/adams.html (the Public Electronic Reading Room). Should you have any questions regarding this report, please contact Mr. David Lew at 610-337-5120.

Sincerely,

/RA/

Brian E. Holian, Deputy Director
Division of Reactor Projects

Docket No.50-247
License No. DPR-26

Enclosure: Inspection Report 05000247/2003012
w/Attachment: Supplemental Information

cc w/encl: G. J. Taylor, Chief Executive Officer, Entergy Operations
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C. Schwarz, General Manager - Plant Operations
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-247

License No. DPR-26

Report No. 05000247/2003012

Licensee: Entergy Nuclear Northeast

Facility: Indian Point Nuclear Generating Unit 2

Location: Buchanan, New York 10511

Dates: September 28, 2003 - December 31, 2003

Inspectors: P. Habighorst, Senior Resident Inspector
M. Cox, Resident Inspector
R. Berryman, Resident Inspector, Indian Point Unit 3
W. Cook, Senior Project Engineer
J. McFadden, Health Physicist
T. Jackson, Project Engineer
B. Bickett, Reactor Engineer
P. Frechette, Physical Security Inspector
A. Dimitriadis, Physical Security Inspector

Approved by: David C. Lew, Chief
Projects Branch 2
Division of Reactor Projects

CONTENTS

SUMMARY OF FINDINGS

IR 05000247/2003-012; 9/28/03 - 12/31/03; Indian Point Nuclear Generating Unit 2; Maintenance Effectiveness.

The report covered a three month period of inspection by resident and region-based inspectors. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified Findings.

Cornerstone: Mitigating System

- Green. A non-cited violation of 10 CFR 50.65 (a)(1) was identified when Entergy failed to take appropriate corrective actions when the No.1 Gas Turbine (GT1) exceeded its maintenance rule (a)(1) reliability monitoring goal.

  This finding was greater than minor because it affected the reliability of GT1 which is used to mitigate the consequences of a station blackout. This issue was evaluated using the significance determination process and determined to be of very low safety significance (Green) since the redundant gas turbine train was always available to perform the system safety functions (Section 1R12).

B. Licensee-Identified Violations.

- None

REPORT DETAILS

Summary of Plant Status

The unit began the inspection period at 100% power. On December 1, 2003, at approximately 9:48 p.m. the operators began a plant power reduction in response to an unplanned loss of instrument air to containment. The power reduction was stopped at 97% power when instrument air to containment was restored. Power returned to 100% on December 2, 2003, at approximately 12:35 a.m., and the unit remained at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity and Emergency Planning

1R01 Adverse Weather Preparation

a. Inspection Scope (71111.01 - 1 Sample)

The inspector reviewed Unit 2 procedure OAD-22, "Seasonal Weather Preparation," and the associated Station Operating Procedures and Check-Off Lists involving cold weather preparations, to verify that these procedures and checklists were completed in accordance with procedural requirements. The inspector verified that the actions taken by the licensee to assure freeze protection of plant equipment were completed consistent with prevailing weather conditions for the months of October, November, and December 2003. The inspector performed walkdowns of accessible areas of the Unit 2 power plant operating and auxiliary support structures to assess the adequacy of system freeze protection measures. The inspector also looked for any vulnerable systems or components not previously identified by Entergy.

The inspector reviewed past Condition Reports for any weather-related adverse trends or repeat problems to ensure Entergy had adequately addressed them through the Corrective Action Program. The inspector reviewed Quality Assurance surveillance report No. 03-22, dated November 5, 2003, which assessed the implementation of the cold weather preparation programs at both Unit 2 and Unit 3. Lastly, following the onset of cold weather and winter storm the week of December 1, 2003, the inspectors reviewed applicable Condition Reports and associated corrective actions for weather-related issues.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns (71111.04Q - 2 Samples) The inspectors performed system walkdowns during periods of train unavailability in order to verify that the alignment of the available train was proper to support the safety function. The inspectors also reviewed licensee identified equipment discrepancies that could potentially impair the functional capability of the available train.

On October 29, 2003, the inspector performed a partial system walkdown of the 21 and 22 safety injection sub-trains. The inspector used check off list (COL) 10.1.1, "Safety Injection System," and OASL 15.26, "Component Status Control and Position Verification," during the walkdown to assess general condition of the system and verify correct system alignment. The 23 safety injection pump was removed from service to replace zinc plugs on the lube oil cooler. The inspector reviewed a number of condition reports over the last two years involving deficiencies within COL 10.1.1 and equipment issues associated with the safety injection system. The condition reports reviewed are found within the enclosed attachment to the report.

On November 12, 2003, the inspector performed a partial system walkdown of Gas Turbine 1 support systems and adjacent equipment spaces. The inspector used COL 31.1, "Gas Turbine 1," and OASL 15.26, "Component Status Control and Position Verification," during the walkdown to verify correct system alignment. Gas Turbine 3 was out-of-service at the time, due to scheduled preventative maintenance activities.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope (71111.05Q - 2 Samples)

The inspector toured areas that were identified as important to plant safety and risk significant in Section 4.0, "Internal Fires Analysis," and Table 4.6-2, "Summary of Core Damage Frequency Contributions from Fire Zones," of the Indian Point 2 Individual Plant Examination for External Events (IPEEE). The objective of this inspection was to determine if the licensee had adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, and had adequately established compensatory measures for degraded fire protection equipment. The inspector evaluated conditions related to: 1) licensee control of transient combustibles and ignition sources; 2) the material condition, operational status, and operational lineup of fire protection systems, equipment and features; and 3) the fire barriers used to prevent fire damage or fire propagation. The areas reviewed were:

- Fire Zone 15, Central Control Room

- Fire Zone 40A, Turbine Building 53'

Reference material used by the inspector to determine the acceptability of the observed condition of the fire areas included the Fire Protection Implementation Plan, Pre-Fire Plan, and Station Administrative Order (SAO)-700, “Fire Protection and Prevention Policy,” SAO-701, “Control of Combustibles and Transient Fire Load,” SAO-703, “Fire Protection Impairment Criteria and Surveillance,” and Calculation PGI-00433, “Combustible Loading Calculation.”

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope (71111.06 - 1 Sample)

The inspector reviewed and toured various elevations in the Auxiliary Feedwater (AFW) and Control Buildings that contain safety related equipment and equipment important to safety which could potentially be susceptible to failure due to internal and/or external flooding. These plant areas were selected based upon their relative importance with respect to the contribution to core damage frequency (reference Individual Plant Examination of External Events (IPEEE) Section 5.0, Internal Flooding), should the safety related equipment in these buildings be compromised. The inspector verified the accuracy of the descriptive text contained in the IPEEE and compared it to the actual plant conditions in all elevations of the AFW and Control buildings.

The inspector reviewed applicable licensee procedures which address actions to mitigate the effects of flooding and to compensate for the loss of normal equipment function due to flooding damage. The inspector also reviewed past pertinent condition reports. The documents reviewed are listed in the enclosed Attachment.

b Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope (71111.11Q - 1 Sample)

The inspector observed the performance of Operating Team "2B" during licensed operator re-qualification training. Specifically, the inspector observed a simulator session associated with Abnormal Operating Procedure 2AOP-Leak-1, "Sudden Increase in Reactor Coolant System Leakage." The inspection was conducted to assess the adequacy of the training, licensed operator performance, implementation of the emergency plan, and the adequacy of the licensee's critique.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (Biennial)

1. Maintenance Effectiveness

a. Inspection Scope (71111.12B - 1 Sample)

The inspectors conducted a review of the Indian Point Unit 2 10 CFR 50.65 (a)(3) periodic evaluation covering the period from January 2000 to December 2001. The purpose of this review was to ensure that Indian Point Unit 2 effectively assessed its (a)(1) goals, (a)(2) performance criteria, system monitoring, and preventive maintenance activities. The inspectors verified that the assessment was completed in the required time period and that industry operating experience was properly utilized. The inspector noted that the licensee's January 2002 to December 2003 10 CFR 50.65(a)(3) evaluation was in progress at the time of this inspection. Additionally, the inspectors verified that Indian Point Unit 2 appropriately balanced equipment reliability with unavailability when planning maintenance activities.

The inspectors selected a sample of four risk-significant systems in category (a)(1) and (a)(2) status to verify that: 1) failed structures, systems, and components were properly characterized; 2) goals and performance criteria were appropriate; 3) corrective action plans were adequate; and, 4) performance was being effectively monitored in accordance with Entergy procedure ENN-CD-171, "Maintenance Rule Monitoring." The following systems were selected for this detailed review:

- Emergency Diesel Generators
- Gas Turbine System
- Auxiliary Feedwater System
- Component Cooling Water System

The inspectors reviewed corrective action documents for malfunctions and failures of the above listed systems to determine whether: (1) they had been correctly categorized as functional failures; (2) were correctly categorized as maintenance preventable; or (3)

system performance was properly evaluated to support appropriate (a)(1) status determinations.

b. Findings

Introduction. A Green non-cited violation (NCV) was identified involving the failure to take appropriate corrective actions as required by 10CFR50.65 when Gas Turbine No. 1 (GT1) exceeded its reliability performance goal.

Description. The Gas Turbine (GT) system is included within scope of the Maintenance Rule (MR) under 10CFR50.65(b)(2)(i). It is a non-safety related, risk significant system relied upon to mitigate accidents and transients. Specifically, the GT system Maintenance Rule functions include: providing an emergency power supply to alternate safe shutdown system components; providing alternate AC power during a station blackout; and providing a readily available supplemental fuel oil supply to the emergency diesel generators (EDGs). The GT system is comprised of three trains and is monitored at the train level. One train must be available in order to satisfy the GT system Maintenance Rule functions.

The GT1 has been in category (a)(1) status since the inception of the MR in 1996 due to its failure to achieve either the reliability goals, availability goals, or both, during the past eight years. The six most recent maintenance preventable functional failures (MPFFs), (between July 2002 and August 2003) have been attributed to poor maintenance practices and procedures. The (a)(1) reliability goal that Entergy established for GT1 is less than or equal to five MPFFS per 24-month rolling time interval. On August 8, 2003, GT1 experienced its sixth MPFF in less than 24 months due to GT1 failing to start after two attempts during the monthly surveillance. Entergy determined that the problem was caused by a loose battery cable terminal resulting from poor maintenance practices.

The inspectors learned that this failure was appropriately classified as the sixth MPFF for GT1. However, through interviews with the Entergy's MR coordinator and the GT system engineer, the inspectors discovered that no corrective actions were implemented to address the failed reliability performance goal. In addition, an evaluation of why the current (a)(1) action plan (July 2001) and its associated corrective actions were inadequate to meet this reliability goal was never performed.

Analysis. The inspectors determined that Entergy's performance deficiency was the failure to take appropriate corrective actions when the established performance reliability goal for the GT1 train was exceeded. This performance deficiency was determined to be of greater than minor significance because it affected the Mitigating Systems cornerstone objective. Specifically, the GT system is required to be reliable to mitigate initiating events such as a station blackout.

This finding was assessed in accordance with NRC Manual Chapter 0609, Appendix A, Attachment 1, "Significance Determination Process for Reactor Inspection Findings for At-Power Situations," and was determined to be of very low safety significance (Green) since the redundant gas turbine (GT3) was available when the GT1 was inoperable.

This issue screened out of the Phase 1 SDP as a Green finding because there was no actual loss of the GT system safety functions.

Enforcement. Paragraph (a)(1) of 10CFR 50.65 states, in part, that when the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken. Contrary to the above, the licensee failed to implement appropriate corrective actions when inadequate maintenance practices resulted in GT1 exceeding its (a)(1) reliability goal. Because this violation was determined to be of very low safety significance (Green) and because it has been entered into Entergy's correction action program (CR-2003-07485), this issue is being treated as a non-cited violation, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 05000247/2003012-01, Failure to take corrective action for GT1 when exceeding a MR (a)(1) reliability performance goal.)**

2. Maintenance Effectiveness

a. Inspection Scope (71111.12Q - 1 Sample)

The inspectors evaluated Entergy's work practices and preventive/corrective maintenance performed on the 13.8 kV electrical system to assess the effectiveness of maintenance activities. The inspectors reviewed the system's performance history to assess the adequacy of the licensee's corrective actions and to evaluate Entergy's monitoring, evaluations and disposition of issues in accordance with station procedures and the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance." The inspectors evaluated system deficiencies over the last four quarters to verify that maintenance preventable functional failures were being properly identified. The following documents associated with system performance were reviewed:

- System Health Report - 3rd Quarter 2003
- Indian Point 2 Maintenance Rule Bases Document for the associated system
- Condition Reports and Work Orders associated with system performance over the last 4 quarters.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Activities

a. Inspection Scope (71111.13 - 5 Samples)

The inspector observed selected portions of emergent maintenance work activities to assess the licensee's risk management in accordance with 10 CFR 50.65(a)(4). The inspector verified that the licensee took the necessary steps to plan and control emergent work activities, to minimize the probability of initiating events, and to maintain the functional capability of mitigating systems. The inspector observed and/or discussed risk management with maintenance and operations personnel for the following activities:

- Work Order (WO) IP2-03-066606, Repair broken disconnect for SI-MOV-887A.
- CR IP3-2003-05796, Actions associated with solar magnetic disturbance preparations.
- WO IP2-03-05580, Troubleshoot and repair of 23 EDG jacket water heater contactor.
- WO IP2-01-20781, Repair or replace valve operator for AC-803, (component cooling water outlet throttle valve).
- WO IP2-03-5641, Repairs to position indication for containment isolation valve (PCV-1280).

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events

a. Inspection Scope (71111.14 - 2 Samples)

On October 24, 2003, the operators experienced a loss of a 13.8 kV feeder (13W93). The loss of the 13.8 kV feeder resulted in numerous Unit 1 alarms and an automatic start of the security diesel generator. The inspector reviewed the operators' response to the event including their implementation of abnormal operating instruction (AOI) 27.1.3, "Loss of 13.8 kV Power," adherence to technical specifications, procedures and administrative requirements, and communications with distribution center personnel on 13.8 kV system restoration.

On December 18, 2003, the operators noted a drop in turbine load of approximately six megawatts coincident with a slight power increase. The operators also noted that all nine high pressure turbine drain valves were open (normally closed). Abnormal Operating Procedure (AOP) LOAD-1 was entered, reactor power was reduced to approximately 98 percent, and actions were performed to shut the turbine drain valves. Once conditions were stabilized the operators returned to Plant Operating Procedure (POP) 2.1. It was found that a maintenance activity inadvertently resulted in the opening of the turbine drain valves due to an inaccurate system drawing.

The inspectors observed operator response and verified that appropriate procedures were used following the transient. The inspectors also reviewed operator logs and plant computer data points to evaluate the magnitude of the plant transient and to ensure the plant performed as designed. Condition report (CR)-IP2-2003-07488 was written by the licensee to evaluate the cause of the maintenance error which resulted in the transient.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15 - 4 Samples)

The inspectors reviewed the below-listed condition reports and associated operability evaluations to ensure that operability was properly justified and that the component or system remained available, without a significant degradation in performance or unrecognized operability issue. The inspectors used Technical Specifications, Updated Final Safety Analysis Report, and design basis documents, as appropriate. The inspector also conducted a physical walk down of the affected equipment (when practicable), reviewed applicable drawings and operating procedures, and discussed the operability evaluation with the responsible systems engineer. Operability evaluations associated with these condition reports were also reviewed.

- CR-IP2-2003-05797, “23 EDG underground diesel fuel sample indicates a heavy bacteria growth,” and associated CR Nos. IP2-2003-04051, -05805, and -04092.
- CR-IP2-2003-6159, Incorrect installation of condensate pots for the containment pressure transmitters.
- CR-IP2-2003-7111, Containment fan cooler unit cooling water flow less than minimum required technical specification surveillance criteria per the new Improved Technical Specifications (ITS).
- CR-IP2-2003-7424, Potential for service water temperature to be less than the value assumed in the bounding analysis for a large break loss of coolant accident.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope (71111.16 - 1 Sample)

As of October 20, 2003, the inspector reviewed the list of all eighteen (18) designated operator burdens to assess the individual and cumulative effects on system reliability, availability, and potential for mis-operation of a risk significant system.

The inspector toured various areas of the plant and reviewed Entergy's control room deficiency work list, dated October 20, 2003, to evaluate if degraded conditions could impact operators during emergency operating procedure or abnormal operating procedure usage. The inspector identified two previously identified deficiencies involving the temporary technical support center diesel generator and failure of gas turbine unit 1 local operations trend monitoring system that were subsequently re-classified during the inspection period by Entergy as operator burdens. The inspector used OASL 15.43, "Operator Burden Program" as a reference for this review.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope (71111.19 - 4 Samples)

The inspector reviewed post-work test (PWT) 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 the maintenance work order (WO) 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 selected testing activities involved components that were risk significant as identified in the IP2 Individual Plant Examination. The regulatory references for the inspection included Technical Specification 6.8.1.a. and 10 CFR 50, Appendix B, Criterion XIV, "Inspection, Test, and Operating Status." The following testing activities were evaluated:

- WO IP2-03-03029293, PWT following positioner repair for FCV-437 (23 Feedwater Regulating Valve).
- WO IP2-03-20030, PWT for flushing line modification on 23 component cooling water (CCW) pump.
- WO IP2-03-27093, PWT following biannual maintenance on 21 coolant charging pump (CCP)
- WO IP2-03-31442, PWT following repairs of FCV-1207 (Low Pressure Steam Dump).

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope (71111.22 - 3 Samples)

The inspector reviewed surveillance test procedures and observed testing activities to assess whether: 1) the test preconditioned the component tested; 2) the effect of the 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 and the equipment was properly calibrated; 5) the test was performed per the procedure; 6) the test equipment was removed following testing; and 7) test discrepancies were appropriately evaluated. The surveillance tests observed were based upon risk significant components as identified in the IP2 Individual Plant Examination. The regulatory requirements that provided the acceptance criteria for this review were 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," Criterion XIV, "Inspection, Test, and Operating Status," Criterion XI, "Test Control," and Technical Specifications 6.8.1.a. The following test activities were reviewed:

- PI-M2, Vapor Containment Monthly Inspection
- PT-M38, Gas Turbine 1 Monthly Surveillance
- PT-Q29A, 21 Safety Injection Pump

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope (71111.23 - 1 Sample)

The inspectors reviewed the temporary modification (TA-03-2-186-001) to remove 22 reactor coolant pump (RCP) lower thrust bearing temperature from the plant information computer system (PICS) scan. The point was being removed due to erratic indications which caused the combined "RCP BRG Temp High" alarm to annunciate in the control room. The inspectors evaluated the basis for determining that the indication was not valid and reviewed the engineering analysis for adequacy and accuracy. The inspectors also reviewed applicable portions of the Updated Final Safety Analysis Report (UFSAR) to verify the applicability of the engineering analysis discussed in the alteration package and reviewed the temporary procedure changes required for the associated alarm response procedure and POP 3.3 "Plant Cooldown."

b. Findings

No findings of significance were identified.

1EP6 Emergency Plan Drill

a. Inspection Scope (71114.06 - 1 Sample)

On October 29, 2003, the inspectors observed the licensee's emergency response organization during an announced emergency preparedness training drill at Indian Point Unit 3. The simulated emergency included the activation of the Operations Support Center (OSC), the Technical Support Center (TSC), Emergency Operations Facility (EOF) and the Joint News Center (JNC) after an Alert (simulated) was declared by the control room operators.

The inspectors observed the conduct of the exercise in the control room simulator, TSC, and EOF. The inspectors assessed licensed operator and the licensee's adherence to emergency plan implementation procedures and their response to simulated degraded plant conditions. The inspectors verified licensee performance in classification, notification, and protective action recommendations. In addition to the drill, the inspectors observed the licensee's controller critique and evaluated the licensee's self-identification of weaknesses and deficiencies. The inspector verified that condition report CR-IP3-2003-05248 appropriately addressed these deficiencies. The inspectors reviewed the licensee's identified findings and their observations. The inspectors' review included the following documents and procedures:

- Indian Point Energy Center Emergency Plan
- IP-EP-410, Protective Action Recommendations, Revision 2
- IP-EP-250, Emergency Operations Facility, Revision 0
- Emergency Action Levels
- Condition Report Nos. IP3-2003-05952, IP3-2003-05248, IP3-2003-05249, IP3-2003-05251, IP3-2003-05250, IP3-2003-05279, IP3-2003-05278, and IP3-2003-05255.

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 - 4 Samples)

The inspector reviewed radiological work activities and practices and procedural implementation during tours and observations of the facilities and inspected procedures, records, and other program documents to evaluate the effectiveness of Entergy/Indian Point 2's access controls to radiologically significant areas.

On October 7, 2003, the inspector toured and observed work activities on the 70-foot elevation of the chemical systems building in Unit 1 and the area in the Unit 1 sphere annulus area where the pipe from the north curtain drain was located. Also, on this date, the inspector discussed, with the project leaders, the current status of work and plans for the Unit 1 remediation projects involving characterization of the tanks and vessels, the modification for the north curtain drain water processing, and the characterization of the east and west spent fuel pools. On November 18, the inspector observed a pre-job brief given by radiation protection technicians. This brief was for an entry into the reactor containment building at 100% power for replacement of a moveable in-core detector and its cable on radiation work permit (RWP) no. 032043. On November 19, the inspector observed a radiation protection technician providing job coverage for workers replacing a seal on a charging pump in the primary auxiliary building. The inspector also toured and observed work activities in the primary auxiliary, maintenance and outage, and fuel storage buildings in Unit 2. During the walkdown, the inspector observed and verified the appropriateness of the posting, labeling, and barricading of radioactive material, radiation, contamination, high radiation, and locked high radiation areas. The inspector reviewed work activities by both radiation workers and radiation protection technicians for compliance with the radiation work permit (RWP) requirements and radiological protection procedures.

At the routine radiologically-controlled-area (RCA) access control point, the inspector observed radiation workers logging into the RCA on radiological work permits (RWPs), using electronic dosimeters, and observed radiation workers exiting the RCA and then logging out of their RWPs. The inspector examined the use of personnel dosimetry and the radiological briefings for ingoing radiation workers. Also, the inspector reviewed procedures for and discussed with radiation protection personnel the control of high-risk, high-dose-rate areas and of very high radiation areas. On November 19, the inspector met with the Radiological Engineering Manager and a Radiological Engineer and discussed Condition Report (CR) No. CR-IP2-2003-06165 and the investigation into the contaminated sample from the Unit 2 fuel storage building's cask wash pit.

The inspector performed a selective examination of program documents (as cited in the List of Documents Reviewed section) to evaluate the adequacy of radiological controls.

The review was conducted considering criteria contained in 10 CFR 19.12, 10 CFR 20 (Subparts D, F, G, H, I, and J), site Technical Specifications, and site procedures.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls

a. Inspection Scope (71121.02 - 2 Samples)

The inspector reviewed the effectiveness of Entergy's program to maintain occupational radiation exposure as low as is reasonably achievable (ALARA).

The inspector discussed the actual cumulative year-to-date dose results for 2003 for Units 1 and 2 with Indian Point Energy Center (IPEC) radiation protection personnel. These results were tracking at or below the projected values. The inspector reviewed the radiation protection web page on the site local access network and noted that the cumulative annual exposure for individual radiation workers was available for review and work planning purposes. On November 20, the inspector met with an ALARA planning specialist and reviewed the current dose estimates for 2004 for the operational periods at Units 1 and 2 and for the planned refueling outage (2R16) at Unit 2.

On October 6, 8 and 9, the inspector discussed the status of the radiation exposure reduction plan, the ALARA outage planning process, and recent ALARA planning initiatives involving resin bed sluicing and hot spot reduction with the Technical Support Manager, the Assistant Radiation Protection Manager, and the ALARA Planning Supervisor. The inspector also discussed the radiological source term in Unit 2 and the IPEC five-year station exposure reduction plan (2003 - 2008) which indicated that the licensee had developed an understanding of the plant source term, including a knowledge of the input mechanisms. This plan contained action items and milestones for specific strategies aimed at reducing the radiological source term.

The inspector performed a selective examination of program documents (as cited in the List of Documents Reviewed section) for regulatory compliance and for adequacy of control of radiation exposure. The review was conducted considering criteria contained in 10 CFR 20.1101 (Radiation protection programs), 10 CFR 20.1701 (Use of process or other engineering controls), and site procedures.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope (71121.03 - 2 Samples)

The inspector reviewed the program for health physics instrumentation and for installed radiation monitoring instrumentation to determine the accuracy and operability of the instrumentation.

During the plant tours described in Section 2OS1 of this report, the inspector 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, continuous air monitors, and radiation monitors including whole body friskers, portal monitors, and area monitors. The inspector selectively verified current calibration, source checking, and proper instrument function. The inspector also identified and noted the condition and operability of selected installed area and process radiation monitors and any accessible local indication information for those monitors.

The inspector performed a selective examination of program documents (as cited in the List of Documents Reviewed section) for regulatory compliance and adequacy. The review was conducted considering criteria contained in 10 CFR 20.1501, 10 CFR 20 Subpart H, site Technical Specifications, and site procedures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

40A1 Performance Indicator (PI) Verification

a. Inspection Scope (71151 - 3 Samples)

Occupation Exposure Control Effectiveness

The inspector selectively examined records used by the licensee to identify occurrences involving high radiation areas, very high radiation areas, and unplanned personnel exposures for the period from August 2002 through September of 2003. The reviewed records included selected corrective action program records and Indian Point 2's Monthly PI Data Elements. This review was conducted considering the applicable criteria specified in Nuclear Energy Institute's (NEI) Regulatory Assessment Performance Indicator Guideline No. 99-02 (Revision 2, with an effective date of November 19, 2001). The inspector also examined the licensee's documentation package for a PI occurrence identified in Condition Report No. CR-IP2-2002-09618.

RETS/ODCM Radiological Effluent Occurrences

The inspector selectively examined records used by the licensee to identify any occurrences involving gaseous or liquid effluent releases. The reviewed record types included monthly and quarterly gaseous and liquid effluent release data and associated records. The inspector reviewed records covering the period from November 2002

through the third quarter of 2003. This review was conducted considering the applicable criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 2 (effective date of November 19, 2001).

Fitness-for-Duty, Personnel Screening, Protected Area Security Equipment Performance

The inspector performed a review of performance indicator (PI) data submitted by the licensee on physical protection cornerstone. The inspector reviewed the licensee's programs for gathering, processing, evaluating, and submitting data for the Fitness-for-Duty, Personnel Screening, and Protected Area Security Equipment Performance Indicators (PIs) to verify these PIs had been properly reported as specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 1 and Rev. 2, and to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators.

The review included the licensee's tracking and trending reports, personnel interviews and security event reports for the PI data collected from the first quarter of 2002 through the third quarter of 2003. The inspector noted from the licensee's submittal that there were no reportable failures to properly implement the requirements of 10 CFR 73 and 10 CFR 26 during the entire reporting period. Based on the data reviewed and interviews with personnel, the inspector concluded that the personnel screening and the fitness-for-duty programs functioned as intended.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

1. Baseline Procedure Problem Identification and Resolution Review (71152)

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors screened each items entered into the licensee's corrective action program. This review was accomplished by reviewing hard copies of each condition report.

b. Findings

No findings of significance were identified.

2. Annual Sample Review

a. Inspection Scope (71152 - 1 Sample)

Radiation Protection Practices The inspector selected three issues identified in the Corrective Action Program (CAP) for detailed review (Condition Report Nos. CR-IP2-2003-04752, 05293, -05813, -06289, -06469, -06541, -06808, and -06809). The issues were associated with verification of the status of high radiation and locked high radiation areas, postings in the Health Physics (HP) access control point, postings on the 33-foot elevation of the Unit 1 annulus, sampling of storm drains, records for locked high radiation areas, ALARA issues, and vapor containment entries, respectively. The documented reports for the issues were reviewed to ensure that the full extent of the issues were identified, appropriate evaluations were performed, and appropriate corrective actions were specified and prioritized.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On January 9, 2004, the inspectors met with Indian Point 2 representatives at the conclusion of the inspection. At that time, the purpose and scope of the inspection were reviewed, and the preliminary results were presented. The licensee acknowledged the preliminary inspection results.

The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was reviewed during this inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:

W. Axelson	Radiological Engineering Supervisor
T. Barry	Security Superintendent
J. Breban	Security Shift Supervisor
J. Cooper	Senior Security Specialist
R. Deschamps	Radiation Protection Coordinator
R. DeCensi	Technical Support Manager and Radiation Protection Manager
C. English	Unit 1 Project Coordinator
R. Fuchek	Radiation Protection Supervisor
D. Gainer	Risk Analyst
D. Gately	Assistant Radiation Protection Manager
T. Jones	Licensing
M. Kempski	System Engineer (Gas Turbines)
M. Kerns	Chemistry Manager
R. LaVera	ALARA Planning Supervisor
T. McCaffrey	Manager of System Engineering
R. Mages	Radiological Engineer
D. Mayer	Unit 1 Project Manager
B. Meeks	System Engineer (EDG)
J. O'Driscoll	System Engineer (CCW)
T. Phillips	Radiological Engineer
T. Redfern	Security Shift Supervisor
E. Salisbury	Radiological Engineer
R. Sutton	Maintenance Rule Coordinator

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened/Closed

05000247/2003012-01	NCV	Failure to take corrective action for GT1 when exceeding a Maintenance Rule (a)(1) reliability performance goal.

LIST OF DOCUMENTS REVIEWED

Section 1R01, Adverse Weather

Condition Reports

IP2-2003-06833, 05482, 05717, 06663, 06510, and 06883
Work Orders

IP2-03-07164, 03-05854, 054907, 05895, 05896, 05891, IP2-02-02938, 02939

Section 1RO4, Partial Equipment Alignment

Condition reports reviewed: CR IP2-2003-5314, 2002-10797, 2002-10921, 2002-10924, 2002-10565, 2003-419, and 2003-6305

Section 1R06, Flood Protection Measures

Procedures

Abnormal Operating Procedure, 2AOP-Flood-1, "Flooding," Revision 0
ECA-0.0, Loss of All AC Power, Revision 39
Individual Plant Examination of External Events, Section 5.0, "Internal Flooding"
Updated Final Safety Analysis Report, Sections 1.11.8. "Protection from Flooding of Equipment Important to Safety," and Section 2.5, "Hydrology."

Condition Reports

IP2-2002-00676, 00727, 04066, 04549, 05260, 06132, 06610, 07502, 07786, 07814, 07836, 08155, 08215, 09778, 09919, IP2-2003-00193, 00628, 00843, 01001, 01134, 01793, 02001, 02616, 03455, 05672, 06065, 06810, 06974.

Section 1R12, Maintenance Effectiveness

Maintenance Rule Periodic Assessment: Jan.1, 2000 - Dec. 31, 2001
ENN-DC-171, Rev. 0, "Maintenance Rule Monitoring" Dec. 2003.
ENN-DC-121, Rev. 1, "Maintenance Rule" Nov. 2003.
SE-SQ-12.108, Rev. 3, Indian Point Station System Engineering
Maintenance Rule Quarterly Report (1st - 3rd) 2003
Gas Turbine and Gas Turbine Fuel Oil Notebook
IPEC Unit 2 MR Program FF-MPFF Listing - 2003
IP-2 maintenance Rule Program Systems Status - 3rd Qtr 2003

(A)(1) Action Plans (Attachment 7.2 of procedure SE-SQ-12.108, Rev. 3)
Component Cooling Water (CCW)
Emergency Diesel Generators (EDGs)
Gas Turbine - All Trains

Auxiliary Feedwater

System Health Reports/MR Basis Documents

Component Cooling Water	Service Water
Emergency Diesel Generators	Condensate System
Gas Turbine - All Trains	Containment Spray System
Auxiliary Feedwater	

Corrective Action Plans Reviewed (IP2)

CR-2000-03935	CR-2002-00448	CR-2002-06471	CR-2002-11432
CR-2002-07081	CR-2002-07775	CR-2002-07829	CR-2003-01696
CR-2003-03403	CR-2003-04098	CR-2003-03428	CR-2003-00572
CR-2003-03695	CR-2003-05009	CR-2003-02707	*CR-2003-07485

* Initiated as a result of this inspection.

Section 2OS1, Access Control to Radiologically Significant Areas

RWP 031203, Rev. 03, Unit 1 project status
RWP 031204, Rev. 00, Unit 1 north curtain drain modification project
RWP 032034, Rev. 01, Dry cask storage project
Gamma spectroscopy counting results for Unit 2 spent fuel pool building wash down/truck bay floor test bore samples
IPEC common radiation protection/radioactive waste and transportation common procedure plan
Technical support integration/improvement plan
IPEC snapshot self-assessment report for environmental programs (LOCR No. IP3-2003-00086)
IPEC snapshot self-assessment of radiation worker training, August 30, 2003

Section 2OS2, ALARA Planning and Controls

IP#1 daily ALARA information dated October 5, 2003
IP#2 daily ALARA information dated October 5, 2003
Presentation package for IPEC ALARA committee meeting on September 30, 2003

Section 2OS3, Radiation Monitoring Instrumentation and Protective Equipment:

Snapshot self-assessment of OE 03-16239, “Separation of airline coupling on supplied-air hood” and CR-IP3-2003-04012

LIST OF BASELINE INSPECTIONS PERFORMED

71111.01	Adverse Weather	1R01
71111.04	Equipment Alignment	1R04
71111.05	Fire Protection	1R05
71111.06	Flood Measures	1R06
71111.11	Operator Requalification	1R11
71111.12	Maintenance Effectiveness	1R12
71111.13	Maintenance Risk Assessment and Emergent Work Activities	1R13
71111.14	Personnel Performance During Non-Routine Plant Evolutions	1R14
71111.15	Operability Evaluations	1R15
71111.16	Operator Workarounds	1R16
71111.19	Post Maintenance Testing	1R19
71111.22	Surveillance Testing	1R22
71111.23	Temporary Plant Modifications	1R23
71114.06	Emergency Plan Drill	1EP6
71121.01	Access Control to Radiologically Significant Areas	2OS1
71121.02	ALARA Planning and Controls	2OS2
71121.03	Radiation Monitoring Instrumentation and Protective Equipment	2OS3
71151	Performance Indicator Verification	4OA1
71152	Problem Identification and Resolution Sample	4OA2

LIST OF ACRONYMS

AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
AOP	abnormal operating procedure
CAP	corrective action program
CCP	coolant charging pump
CCR	central control room
CCW	component cooling water
CFR	Code of Federal Regulations
COL	check off list
CR	condition report
EDG	emergency diesel generator
EOF	emergency operations facility
GT	gas turbine
HP	health physics
IMC	Inspection Manual chapter
IPEC	Indian Point Energy Center
IPEEE	Individual Plant Examination for External Events
ITS	integrated technical specifications
JNC	joint news center
MPFF	maintenance preventable functional failure
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	other activities
OS	occupational radiation safety
OSC	operations support center
PARS	publically available records
POP	plant operating procedure
PWT	post work test
RCA	radiologically controlled area
RWP	radiation work permit
SAO	Station Administrative Orders
SDP	significance determination process
TS	technical specifications
TSC	technical support center
UFSAR	Updated Final Safety Analysis Report
WO	work order