

May 14, 2004

Mr. Fred Dacimo  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Indian Point Energy Center  
295 Broadway, Suite 1  
P.O. Box 249  
Buchanan, NY 10511-0249

**SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 - NRC INTEGRATED  
INSPECTION REPORT 05000247/2004002**

Dear Mr. Dacimo:

On March 31, 2004, 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 April 14, 2004, with you 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 four findings of very low safety significance (Green). Two of the findings were determined to be violations of NRC requirements. However, because of the very low safety significance and because the issues have been addressed and entered into your corrective action program, the NRC is treating the findings as non-cited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. If you deny these NCVs, 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.

Mr. Fred Dacimo

2

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Sincerely,

**/RA/**

Eugene. W. Cobey, Acting Chief  
Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000247/2004002  
w/Attachment: Supplemental Information

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4

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-247

License No. DPR-26

Report No. 05000247/2004002

Licensee: Entergy Nuclear Northeast

Facility: Indian Point Nuclear Generating Unit 2

Location: Buchanan, New York 10511

Dates: January 1, 2004 - March 31, 2004

Inspectors: P. Habighorst, Senior Resident Inspector  
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J. Lilliendahl, Reactor Inspector  
D. Silk, Senior Emergency Preparedness Inspector, DRS (In-office review  
March 5-12, 2004)

Approved by: Eugene W. Cobey, Acting Chief  
Projects Branch 2  
Division of Reactor Projects

## CONTENTS

<u>Summary of Plant Status</u> .....	1
REACTOR SAFETY .....	1
1R01 Adverse Weather Preparation .....	1
1R02 Evaluations of Changes, Tests, or Experiments .....	1
1R04 Equipment Alignment .....	2
1R05 Fire Protection .....	3
1R06 Flood Protection Measures .....	5
1R11 Licensed Operator Requalification Program .....	5
1R12 Maintenance Effectiveness .....	6
1R13 Maintenance Risk Assessment and Emergent Work Activities .....	7
1R14 Personnel Performance During Non-Routine Plant Evolutions and Events .....	8
1R15 Operability Evaluations .....	10
1R16 Operator Workarounds .....	16
1R19 Post Maintenance Testing .....	17
1R22 Surveillance Testing .....	17
1R23 Temporary Plant Modifications .....	18
1EP4 Emergency Action Level and Emergency Plan Changes .....	19
1EP6 Emergency Plan Drill .....	19
RADIATION SAFETY .....	20
2OS1 Access Control to Radiologically Significant Areas .....	20
2OS2 ALARA Planning and Controls .....	21
OTHER ACTIVITIES (OA) .....	22
4OA1 Performance Indicator (PI) Verification .....	22
4OA2 Identification and Resolution of Problems .....	23
4OA4 Cross-Cutting Aspects of Findings .....	26
4OA6 Meetings, Including Exit .....	26
ATTACHMENT: SUPPLEMENTAL INFORMATION	
KEY POINTS OF CONTACT .....	A-1
LIST OF ITEMS OPENED, CLOSED AND DISCUSSED .....	A-2
LIST OF DOCUMENTS REVIEWED .....	A-3
LIST OF ACRONYMS .....	A-8

## SUMMARY OF FINDINGS

IR 05000247/2004002; 1/1/04 - 03/31/04; Indian Point Nuclear Generating Unit 2; Fire Protection; Personnel Performance During Non-Routine Events; Maintenance Effectiveness; and Problem Identification and Resolution.

The report covered a three month period of inspection by resident and region-based inspectors. Two Green non-cited violations (NCVs) and two Green findings were 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 and Self-Revealing Findings

#### Cornerstone: Initiating Events

- Green. The inspector identified a non-cited violation of Technical Specification (TS) 5.4.1.d. that requires, in part, that written procedures shall be implemented for the Fire Protection Program. The inspector determined that no transient combustible evaluation (TCE) was completed for approximately 330 gallons of lubricating oil stored in fire zone 6A, "Waste Drumming and Storage Station," contrary to Procedure ENN-DC-161, "Transient Combustible Program," step 5.2.3.

This finding is greater than minor because it represented a condition similar to example 4.k in Appendix E, IMC 0612, in that the as-found condition involved transient combustible material loading in excess of the Fire Hazard Analysis limit. The finding is of very low safety significance because it did not increase the likelihood of a fire, no credible fire scenario was identified due to the type of storage containers used, there were no intervening combustibles, and no credible fire ignition source was present. (Section 1R05)

#### Cornerstone: Mitigating System

- Green. The inspector identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control." A component was modified during the replacement of a safety-related controller in the over-temperature delta-temperature (OTDT) circuitry of the reactor protection system without a formal modification package.

This finding was determined to be greater than minor since it was associated with the design control attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring reactor protection system reliability. Specifically, the failure to use a derated resistor to modify the circuit card had an adverse impact on the reliability of the OTDT controller. This finding

## Summary of Findings (cont'd)

is considered of very low safety significance since it did not result in the actual loss of safety function of a system. This issue did not impact fire, flooding, seismic, or severe weather initiating events. (Section 1R13)

- Green. The inspector identified that the control room operators placed the 345KV ring bus in a configuration that would challenge the availability of mitigating systems in the event of an off-site electrical transient. Specifically, in the event that a 345KV feeder fault caused a loss-of-load plant trip, two of the four 480 volt safety buses would require operator action to restore.

This finding is greater than minor since it is associated with the configuration control attribute of the mitigating systems cornerstone and that it impacted the cornerstone objective of ensuring the availability of mitigating systems. With the ring bus aligned with both output breakers shut and one feeder out of service, a subsequent fault on the remaining feeder would have resulted in a plant trip with the fast transfer blocked. This would de-energize vital busses 2A and 3A causing a loss of power to one of two motor-driven auxiliary feed pumps, one of three safety injection pumps, two of five containment fan cooler units, one of two residual heat removal pumps and two of six service water pumps. Manual operator action would then be required to restore this equipment. This finding is considered of very low safety significance because it did not result in an actual loss of safety function of any mitigating systems. This issue did not screen as potentially risk significant due to seismic, fire, flooding, or severe weather initiating events. (Section 1R14)

- Green. A finding was identified involving untimely corrective actions which contributed to increased unavailability of Gas Turbine 1 (GT-1) which is considered a mitigating system. Specifically, GT-1 was not available for approximately 116 hours due to the failure and subsequent replacement of the starting diesel battery charger.

This finding was determined to be greater than minor since it was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring system reliability and availability of systems that are used to prevent undesirable consequences due to initiating events. GT-1 is credited as an alternate AC power source for both station blackout and Appendix R fire scenarios. This finding was considered of very low safety significance because there was no actual loss of safety function for this mitigating system, since GT-3 was available while GT-1 was inoperable. This issue did not screen as potentially risk significant due to seismic, fire, flooding, or severe weather initiating events. (Section 4OA2)

## B. Licensee-Identified Violations

None



## REPORT DETAILS

### Summary of Plant Status

The unit began the inspection period at 100% power. On February 15, 2004, the licensee reduced power to 94% to perform turbine stop and control valve testing. Power was returned to 100% on the same day. On March 14, 2004, the licensee reduced power to 85% to facilitate repairs on a hot spot located on the outgoing 345KV transmission line (1R14). The licensee returned power to 100% on the same day. 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 January, February, and March 2004. The inspector performed walkdowns of circulating and service water intake structures to assess the adequacy of system freeze protection measures. The inspector also looked for any vulnerable components not previously identified by Entergy.

The inspector reviewed past Condition Reports (CRs) for any weather-related adverse trends or repeat problems to ensure Entergy had adequately addressed them through the corrective action program. The inspectors also reviewed outstanding work orders for selected systems to evaluate for any impacts on the freeze protection and cold weather preparations.

###### b. Findings

No findings of significance were identified.

##### 1R02 Evaluations of Changes, Tests, or Experiments

###### a. Inspection Scope (71111.02 - 18 samples)

The inspectors reviewed five safety evaluations (SE) that were completed during the past two years and one SE associated with a plant modification that was completed last year. The SEs reviewed were distributed among initiating event, mitigating system, and

Enclosure

barrier integrity cornerstones. These SEs were reviewed to verify that changes to the facility or procedures, as described in the Updated Final Safety Analysis Reports (UFSAR), and changes to tests not described in the UFSAR were reviewed and documented in accordance with 10 CFR 50.59, and that the safety issues pertinent to the changes were properly resolved or adequately addressed. The reviews also included verification that the licensee had appropriately concluded the changes and tests could be accomplished without obtaining license amendments.

The following six safety evaluations were reviewed:

- 02-0344-PR-02-RE Tavq Increase from 559F to 562F, Revision 2;
- 02-0245-EV-00-RE Use of Unit 3 Appendix R Diesel Generator to Satisfy Unit 2 Technical Specification 3.7.C.3;
- 02-0412-CL-00-RE Containment Leak Pressure for a Postulated Steam Line Break;
- 02-0420-CL-00-RE Evaluation of the Potential for Re-criticality;
- EVAL-02-061 Low Reactor Coolant System Pressure at Low Power Operation; and
- FPX-97-12766-F Safety Evaluation associated with Secondary Boiler Blowdown Purification System Piping Seismic Upgrade.

The inspectors also reviewed 12 screen-out evaluations for changes, tests, and experiments for which the licensee determined that safety evaluations were not required. This review was performed to verify that the licensee's threshold for performing safety evaluations was consistent with 10 CFR 50.59.

In addition, the inspectors reviewed the administrative procedures that were used to control the screening, preparation, and issuance of the safety evaluations to ensure that the procedure adequately covered the requirements of 10 CFR 50.59.

The listing of the safety evaluations and screen-out evaluations reviewed is provided in the supplemental information attached to this report.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope (71111.04 - 3 samples)

The inspectors performed system walkdowns during periods of equipment unavailability in order to verify that the alignment of the available train was proper to support the associated safety functions and to ensure the licensee had identified equipment discrepancies that could potentially impair the functional capability of the available train. The inspectors reviewed applicable system drawings and check-off lists to verify proper

alignment and observed the physical condition of the equipment during the verification. The following walkdowns were performed.

- 21 Boric Acid Transfer Pump (BATP) train while the 22 BATP was out of service for maintenance.
- 23 Auxiliary Feed Pump (AFP) alignment while the 21 AFP was out of service for maintenance.
- Gas Turbine #3 while Gas Turbine #1 was out of service for repairs.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope (71111.05Q - 8 samples)

The inspector toured areas that were identified as important to plant safety and risk significant per 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 14, 480VAC Switchgear Room;
- Fire Zone 650, Gas Turbine 1;
- Fire Zone 1A, PAB Pipe Pen Area;
- Fire Zone 23, Auxiliary Boiler Feed Pump Room;
- Fire Zone 7A, PAB 80' Elevation Corridor;
- Fire Zone 6A, Waste Storage and Drumming Room;
- Fire Zone 274, Technical Support Center (TSC) Diesel Generator Area; and
- Fire Zone 17, Turbine Oil Reservoir Area.

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," ENN-DC-161, "Transient Combustible Program," SAO-703, "Fire Protection Impairment Criteria and Surveillance," and Calculation PGI-00433, "Combustible Loading Calculation."

b. Findings

Introduction. A Green NCV was identified involving the failure to complete a transient combustible evaluation (TCE) for approximately 330 gallons of lubricating oil stored in fire zone 6A, "Waste Drumming and Storage Station." This was determined to be a violation of Technical Specification 5.4.1.d. and procedure ENN-DC-161, "Transient Combustible Program."

Description. During the week of February 5, 2004, the inspector identified approximately 330 gallons of combustible charging pump lubricating oil located in Fire Zone 6A, "Waste Drumming and Storage Station." According to the Fire Hazards Analysis, the normal fire loading for Fire Zone 6A is 270,000 BTUs. The transient fire loading of the 330 gallons of combustible liquid was analyzed by the inspector to be an increase of a factor of one hundred over the normal combustible fire loading. The transient fire load was present for approximately one week, until the inspector identified this issue to the licensee and it was immediately removed.

Analysis. The performance deficiency is greater than minor because it represented a condition similar to example 4.k in Appendix E, of IMC 0612, in that the as-found condition involved transient combustible material loading in excess of the Fire Hazard Analysis limit. The inspectors conducted a Phase 1 Significance Determination Process (SDP) screening and determined that the finding is of very low safety significance because this condition did not increase the likelihood of a fire, no credible fire scenario was identified due to the type of storage containers used, there were no intervening combustibles, and no credible fire ignition source was present.

Enforcement. Traditional enforcement does not apply since there were no actual safety consequences, potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or Entergy's procedures. However, the issue was determined to be a violation of TS 5.4.1.d. that requires, in part, that written procedures shall be implemented for the Fire Protection Program (FPP). Procedure ENN-DC-161, "Transient Combustible Program," revision 0, step 5.2.3 requires a TCE when more than five gallons of combustible liquids are stored in a Level II area. The waste drumming and storage station is a level II area. Because this failure to maintain proper controls for transient combustibles in Fire Zone 6A is of very low safety significance and has been entered into the licensee's Corrective Action Program (reference CR-IP2-2004-0724), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 50-247/04-02-01, Failure to perform a transient combustible evaluation for 330 gallons of oil temporarily stored in Fire Zone 6A)**

## 1R06 Flood Protection Measures

### a. Inspection Scope (71111.06 - 2 samples)

The inspector reviewed and toured the 480 volt switchgear room (flood area CTL 15-1) and the fire deluge room outside the switchgear room (flood area CTL 15-2) that contain safety-related equipment and equipment important to safety which could potentially be susceptible to failure due to an internal 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 rooms 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 auxiliary feedwater building and control building.

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 CRs. The documents reviewed are listed in the supplemental information attached to this report.

### b. Findings

No findings of significance were identified.

## 1R11 Licensed Operator Regualification Program

### a. Inspection Scope (71111.11Q - 1 sample)

The inspector observed the performance of Operating Team "2E" during licensed operator re-qualification training. Specifically, the inspector observed two simulator sessions, both of which involved multiple anomalies and entry into the EOP's for casualty response. 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. The inspector also verified that the training was conducted in accordance with Entergy procedures IP-SMM TQ-114, "Continuing Training and Regualification Examinations for Licensed Personnel," and Training Administrative Directive No. 202, "Conduct of Simulator Training." The inspectors reviewed CR-IP2-2004-00884, written to address exam security concerns raised by the inspector during the initial simulator scenario evaluation.

### b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness1. Emergency Diesel Generator (EDG) Wiringa. Inspection Scope (71111.12B - 2 samples)

The inspector performed a review of issues associated with emergency diesel generator (EDG) control wiring dating back to the year 2001. The inspector evaluated work orders and condition reports to verify appropriate work practices were in place and issues were being properly identified and addressed. The inspector also reviewed the scope of Design Basis Initiative project DBI-WIRE-3 for adequacy. A draft preventive maintenance procedure designed to minimize reliability concerns associated with EDG wiring was reviewed and the inspector verified that work orders were scheduled to perform this work. The inspector also evaluated the extent to which wiring issues had impacted EDG availability and verified that these issues had been properly dispositioned in the Maintenance Rule Program.

b. Findings

No findings of significance were identified.

2. Communicationsa. Inspection Scope

The inspectors evaluated Entergy's work practices and preventive/corrective maintenance performed on the plant paging system to assess the effectiveness of the 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 resolution 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.

- Indian Point 2 Maintenance Rule Bases Document for the Plant Paging System
- Condition Report IP2-1998-2780
- Maintenance Rule Program Quarterly Report (Second quarter of 2003)
- Work Orders 02-25247 and 02-40626

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Activitiesa. 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) IP2-03-27107, Light & Power Bus Section 3 Outage
- WO IP2-04-12538, Flux Drive 'D' Repair
- WO IP2-04-14907, 345KV Hot Spot On-line Repair
- WO IP2-02-39391, Replace Over-temperature delta-temperature Controller
- 2R15 45R Step List (RWP 042027 revision 0) Remove Vacuum crate from Sea Land Container to Transport Drum in Preparation for shipment

b. Findings

Introduction. A Green NCV was identified involving design control not being properly maintained during the replacement of a safety-related controller in the over-temperature delta temperature (OTDT) circuitry of the reactor protection system.

Description. On February 10, 2004, the licensee replaced a lead/lag controller in the OTDT instrument loop. The replacement involved changing the controller from an obsolete design to a newer design manufactured by a different vendor. The licensee documented in a material substitution authorization procedure (MSAP-92-00067-FFX) that these controllers were equivalent in design with the same electrical input and output characteristics. During the installation, technicians found that the replacement controller was set up for use in a voltage loop, whereas the existing controller was a current loop. After consulting with the vendor, the licensee installed a resistor in the controller input to allow it to work in a current loop application. This was done in accordance with a suggestion from the manufacturer, however, the installed resistor did not meet the specifications recommended by the manufacturer. The manufacturer specified a 200 ohm, 2 watt resistor and the licensee installed a 200 ohm, ½ watt resistor. While the engineering organization was aware of this design change, it was not evaluated, documented, or approved through Entergy's modification process, as required by ENN-DC-103, "Design Process."

Analysis. The inspectors determined that this is a performance deficiency since the licensee did not use the modification process and failed to perform appropriate engineering analysis during this design change to the controller. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function and the finding was not the result of any willful violation of NRC requirements or Entergy's procedures. This finding was

Enclosure

determined to be greater than minor since it was associated with the design control attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring system reliability. The inspectors noted that the manufacturer of the controller derates circuit components so that they operate at 25-50% of their rated values to ensure equipment reliability, a standard industry practice for critical circuits. The derating factor is one of the parameters used when determining a component's predicted failure rate and thus impacts equipment reliability.

The current loop input to the OTDT circuit was designed to operate at a current value of 10-50 mA. At that current rating, a 200 ohm resistor is subject to ½ watt of power dissipation, which is 100% of the rated value of the installed resistor. Consequently, not using a derated resistor has a potentially significant adverse impact on the reliability of the OTDT controller. The inspectors reviewed the post work testing and verified that instrument operability was not impacted. The inspectors conducted a Phase 1 SDP screening and determined that the failure to maintain proper design control was of very low safety significance since it did not result in the actual loss of safety function of a system and did not impact fire, flooding, seismic or severe weather initiating events.

This finding is associated with the cross-cutting area of problem identification and resolution. Specifically, a contributing cause to this event was the failure to implement effective corrective actions for similar events in the past year involving modifications implemented without appropriate engineering design controls (see section 4OA2).

Enforcement. 10 CFR 50, Appendix B, Criterion III, states in part that design changes shall be subject to design control measures commensurate with those applied to the original design and that design control measures shall provide for verifying or checking the adequacy of design. Contrary to Criterion III, the licensee failed to maintain proper design control during the unapproved modification of the OTDT controller involving the installation of a resistor without the proper rating. Because this failure to maintain proper design control is of very low safety significance and has been entered into Entergy's Corrective Action Program (reference CR-IP2-2004-000731) this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 50-247/04-02-02, Failure to implement appropriate design controls for a modification made to the OTDT controller.)**

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

##### a. Inspection Scope (71111.14 - 1 sample)

The inspectors reviewed operator response during a 345KV feeder outage in which one of two 100% capacity outgoing feeders was removed from service for repairs on March 11, 2004. The inspectors reviewed operator logs, system operating procedure (SOP) 27.1.1, "Operation of 345KV and 138KV Component," and discussed interactions between the on-shift crew and the grid operator.

##### b. Findings

Enclosure



Introduction. A Green finding was identified involving the control room operators placing the 345KV electrical ring bus in a configuration that would challenge mitigating systems in the event that a feeder fault caused a plant trip.

Description. During a daily plant status walk down tour on March 12, 2004, the inspector found that the 345KV ring bus was improperly aligned for the existing feeder configuration. One of the two 100% feeders was out of service for repairs and both plant output breakers were closed. In this configuration, the direct trip of the generator would be defeated if a fault occurred on the remaining feeder. Accordingly, a plant trip due to the subsequent load rejection would be complicated by a block of the fast transfer feature. This would cause a loss of power to four of six internal 6.9KV busses, the loss of power to the reactor cooling pumps, and the loss of power to two of four 480 volt vital busses. Manual operator action would be required to restore power to the vital busses.

The inspectors determined that feeder W93 was isolated on March 11, 2004, and the ring bus breaker alignment was left in the appropriate condition with the feeder's associated plant output breaker open. On the morning of March 12, the operations crew requested that the grid operator order Breaker #9 to be shut. This request was based on a lack of knowledge by the on-shift crew on how the 345KV system interacted with the generator protection circuitry. The grid operator concurred and the breaker was shut.

An event occurred at the plant in 1997 due to the ring bus being in the same configuration. A fault on the remaining out going feeder resulted in a plant trip and a rapid increase in generator frequency since the direct trip feature was defeated. Two specific corrective actions for this event were: 1) install an additional generator over-frequency protection trip to prevent equipment damage; and 2) procedural changes to ensure that the direct trip feature would not be disabled during a feeder outage. The inspectors determined that the grid operator's procedure was properly revised, but the applicable plant procedure for the 345KV electrical system operation was not revised.

The inspectors reviewed the re-qualification training to determine the extent of training provided to the operators on the 345KV system and its operation. Over the last two years, training had been provided to the operators on the electrical distribution system, but that training did not directly deal with required alignments during feeder outages.

Analysis. The inspectors determined that a knowledge deficiency led the operators to adversely impact the reliability of the mitigating systems. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function and the finding was not the result of any willful violation of NRC requirements or Entergy's procedures. This finding is greater than minor since it is associated with the configuration control attribute of the mitigating systems cornerstone and impacted the cornerstone objective of ensuring the reliability of mitigating systems. With the ring bus aligned with both output breakers shut and one feeder out of service, a subsequent fault on the remaining feeder would have resulted in a plant trip with the fast transfer blocked. This would de-energize vital 480 volt busses 2A and 3A causing a

loss of power to one of two motor-driven auxiliary feed pumps, one of three safety injection pumps, two of five containment fan cooler units, one of two residual heat removal pumps and two of six service water pumps. Manual operator action would then be required to restore this equipment. The inspectors conducted a Phase 1 SDP screening and determined that the 345KV system alignment discrepancy was of a very low safety significance because it did not result in an actual loss of safety function of any mitigating systems and it did not screen as potentially risk significant due to seismic, fire, flooding, or severe weather initiating events. This finding has been placed in Entergy's corrective action program as CR-IP2-2004-1188.

This finding is associated with the cross-cutting area of human performance, in that an operator knowledge issue contributed to the configuration error made on the out-going electrical distribution system. This error would have impacted the reliability of unit mitigating systems had an interruption of another off site electrical distribution system feeder occurred (see section 4OA4).

Enforcement. No violation of regulatory requirements occurred. The inspector determined that the finding did not represent a noncompliance since the configuration control error occurred on a non-safety related system. **(FIN 50-247/04-02-03, Improper control of an out-going 345 kV feeder breaker during a feeder outage.)**

#### 1R15 Operability Evaluations

##### 1. Routine Inspector Evaluations

###### a. Inspection Scope (71111.15 - 5 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-IP2-2004-00138, Non-conservative AFW flow rate used in LOCA containment response analysis.
- CR-IP2-2004-00219, Static inverter 22 inoperable due to frequency drift. Impacts on the associated vital bus.
- CR-IP2-2004-00760, Average coolant reference temperature improperly calibrated.
- CR-IP2-2004-01056, 21 station battery failed inter-cell resistance check.
- CR-IP2-2004-336, Degradation within the Unit 1 east spent fuel pool

###### b. Findings

Enclosure

- (1) On January 15, 2004, the inspectors evaluated the impact of 22 static inverter being declared inoperable due to the output frequency being greater than allowed per the surveillance criteria. On January 14, 2004, the operators noted the frequency to be 60.7 Hz during routine rounds. The maximum allowed frequency based on the surveillance criteria is 60.5 Hz. The inverter was subsequently declared inoperable. However, it was maintained as the power source for 22 and 22A instrument busses for approximately 12 hours until frequency was restored to 60.0 Hz. The inspectors questioned whether it was appropriate to power the instrument bus with the inverter inoperable due to out of specification frequency. The inspectors noted that there was no engineering evaluation performed to identify if the over-frequency condition would impact any of the loads supplied by the instrument bus. The licensee's initial response to the inspector's concern was that the condition was acceptable since there were no Technical Specification or surveillance requirements associated with the 118 VAC instrument bus frequency. While reviewing instrument bus loads the inspectors found multiple loads, consisting of current repeater and alarm bistables, that had frequency limitations that were less than the 60.7 Hz.

Based on an initial review of CR-IP2-2004-00244, the licensee issued a corrective action for Design Engineering to evaluate the 118 VAC instrument busses to determine a frequency limit based on the connected loads. Operations Management issued a standing order to declare the associated instrument bus inoperable if a static inverter is declared inoperable due to frequency drift outside specifications until design engineering provides an allowable frequency band. This item will remain unresolved pending completion of the licensee's evaluation, and inspector review, of the frequency limits associated with the 118 VAC instrument buses and a determination of the impact of operating risk significant loads at 60.7 Hz. Specifically, the inspectors will evaluate whether this condition adversely impacted the capability or reliability of mitigating systems to perform their safety functions. (URI 50-247/2004-002-04).

- (2) On February 15, 2004, the licensee noted that reference temperature (Tref) did not change during a reactor down power. A power change of 6% should have corresponded to a 0.9 degree change in Tref. Licensee investigation determined that Tref had been incorrectly calibrated during maintenance on May 20, 2003. No retest was performed to verify the as-left calibration was correct. The calibration error resulted in the average coolant temperature being outside its normal program band from 0% to 82% reactor power in an increased direction. Above 82% power Tref was maintained constant at its normal temperature for 100% power. On February 15, 2004, the licensee performed Work Order IP2-04-08829 to correct the Tref calibration error.

Based on CR-IP2-2004-00760 the licensee instituted corrective actions to evaluate what potential impacts this calibration error may have had on plant safety functions. At the conclusion of the inspection, engineering analysis was in progress to evaluate the impacts during a turbine runback due to the loss of a main boiler feed pump and its impact on plant trip frequency due to delaying steam dump actuation during the runback transient. The licensee also plans to analyze the impact on the Chapter 14 Updated Final Safety Analysis Report (UFSAR) for a uncontrolled rod cluster assembly

withdrawal for both subcritical and at power reactor conditions due to changing the assumed initial conditions for primary temperature. This item will remain unresolved pending the completion of the licensee's analysis and inspector review of the results. **(URI 50-247/2004-002-05).**

2. Wires and Raceway System (WARS) to Electrical Cable and Raceway System (ECRIS) Data Conversion Anomalies

a. Inspection Scope (71111.15)

As a result of concerns brought to the NRC's attention on February 23, 2004, about activities being conducted by Entergy at Indian Point Unit 2 related to the Wires and Raceways System (WARS) to the new Electrical Cable and Raceway Information System (ECRIS) data conversion process, an inspection was conducted during the period of March 15 - 18, 2004. The focus of the inspection was to verify that Entergy had a basis for continued operability associated with the apparent data conversion anomalies generated as part of transferring computer data contained in the WARS to the new ECRIS, and that there were no immediate safety issues. The inspectors reviewed condition reports and associated operability evaluations to assess whether operability was appropriately justified and that potentially affected components or systems remained available, without a significant degradation in performance. The inspectors assessed Technical Specifications, the Updated Final Safety Analysis Report, and design basis documents, as appropriate. The following operability evaluations associated with condition reports were reviewed:

- CR-IP2-2002-07454 - Resolve discrepancies identified by the WARS to ECRIS conversion
- CR-IP2-2003-02665 - Resolve data discrepancies, WARS to ECRIS conversion
- CR-IP2-2004-01059 - Reopens resolution of WARS to ECRIS data discrepancies
- CR-IP2-2004-01241 - Cable separation concern identified during field walk-down in PAB

b. Findings

In 2001, Entergy initiated a program at Indian Point Unit 2 to convert the electrical software application from the WARS to ECRIS. This program was part of a fleet wide effort to upgrade to the ECRIS software. The WARS software application was first introduced at IP2 in the 1982 time frame. Entergy personnel recognized that the data conversion process from one software application to the other application would result in data anomalies. The inspectors noted that this expectation was documented in CR-IP2-2001-12337 issued on December 14, 2001.

Subsequently, in May 2002, a licensee contractor issued to Entergy its Data Transfer Verification Report (DTVR). This report contained a number of potential anomalies organized into categories, such as: conduit and tray length issues; overfilled raceways, raceways containing cables with multiple trains, non-safety cables going from one train

to another; and safety cables in non-safety raceways. On August 1, 2002, an Entergy staff member involved in the oversight of the conversion process initiated CR-IP2-2002-07454 to identify that the anomalies identified may indicate some data quality issues. Corrective actions were assigned to the IP2 Electrical Design Engineering Department to research and disposition the various anomalies that occurred. The initial due date for these actions was December 20, 2002, but due to manpower resource constraints the due date was extended twice, first to April 30, 2003, and then to July 30, 2003. The reason stated in the CR was that the action for resolving ECRIS related anomalies during the transition from WARS was converted to a long term corrective action because of the extensive resource requirement needed to resolve the list of anomalies.

Subsequently on May 5, 2003, due to concerns about the lack of progress on the resolution of the data anomalies, CR-IP2-2003-02665 was issued to raise the priority about the corresponding issues. The inspector's noted that CR-IP2-2003-02665 stipulated that an operability determination was required. The operability assessment for this CR stated that all systems were operable pending further investigation. On June 5, 2003, a review conducted of CR-IP2-2003-02665 by the Corrective Action and Assessment (CA&A) group indicated that one of the previous extensions requested for CR-IP2-2002-07454 had also documented that there were no operability issues, but did not document the justification for this conclusion. On June 23, 2003, in response to the CA&A group's recommendation, the corrective action response by Entergy engineering stated that the engineering resources necessary to resolve and correct the discrepancies identified in the DTVR report were extensive (two individuals for approximately a half year) and that the anomalies identified in the DTVR do not constitute an operability concern, but rather are a result of data transfer and software compatibility issues. Therefore, both CRs were closed to an Engineering Request (ER IP2-03-20601, Review and Resolve WARS to ECRIS DTVR anomalies), which had a January 30, 2004, required completion date. The NRC will review, as necessary, implementation of Entergy's Corrective Action Program, including those aspects related to operability assessments, during a subsequent inspection. This review will include the actions taken by Entergy, as documented below, to reopen the issue of resolving the data discrepancies in the Corrective Action Program.

On March 4, 2004, Entergy issued CR-IP2-2004-01059 to allow resolution of the data discrepancies to be better tracked and the ultimate solution to be documented as part of the CR process. The immediate action description of this CR indicated that the discrepancies were reviewed and confirmed to have no impact on operability; a corrective action was assigned to document the basis of this conclusion. The inspectors discussed the basis for the operability evaluation with the Manager of Engineering Support because the written evaluation was undergoing final revision and approval. Subsequent to the on-site inspection activities, Entergy provided the inspectors with the documentation of the basis for the statement that the discrepancies were reviewed and confirmed no impact on operability.

The documentation for the operability determination contained in CR-IP2-01059 noted that there have been activities conducted over a number of years that have focused on

Enclosure

IP2 cable separation, such as, an assortment of analysis, evaluations, regulatory reviews, and field verifications. Among these activities was an in-depth review of individual cable installations that was conducted between 1989 and 1995 as part of the IP2 Cable Separation Program. This program performed individual cable walk-down of installed cabling in conduits and raceways as part of a field verification of cable configurations throughout the plant areas of the primary auxiliary building, containment building, electrical penetration area, electrical tunnel, 480 volt switchgear room, and the emergency diesel generator building, but this did not include the Cable Spreading Room. This program resulted in an engineering evaluation of identified field conditions, and where necessary, upgrades were performed on the as found configuration. Entergy indicated that this program also updated the original WARS database created in 1982 to reflect as-found or corrected conditions.

According to Entergy, plant upgrades since 1995 were controlled by the modification process for installing new cables and controlling the design of these new configurations. They indicated that the modification process did not rely on WARS or ECRIS for automated routing but rather required significant engineer and designer oversight in the implementation of manual selected cable routing that was part of the final design products to assure continuing compliance with the IP2 design and licensing bases. During the period of the on-site NRC inspection, Entergy conducted a limited review of modification documentation for 300 out of 2400 cables that were "touched" as part of modifications performed since 1995. Entergy indicated that this review was performed to confirm the confidence that they had in regard to relying on their modification process used for installing new cables. The term "touched" refers to cables that had their leads lifted and reinstalled on equipment, were rerouted, or were newly installed. No cable separation or operability issues were identified from this initial Entergy review. Following the NRC inspection, Entergy conducted an additional review of cables that were part of modifications done subsequent to 1995. This review identified one cable that was installed to the original cable separation design bases instead of the updated design bases. Entergy's position is that this condition was not a safety significant adverse condition. This will be further reviewed by the inspectors during a subsequent inspection. Entergy has indicated that they plan on completing the documentation review for the remaining cables affected by modifications since 1995 by the third quarter of 2004.

Entergy's activities, as stated above, provides their basis as to why they have a high confidence level that the as installed configurations are operable and meet the prevailing IP2 cable separation design bases. Based upon the inspectors' review of Energy's initial work to verify the continued operability of safety systems, and the performance of the initial NRC independent assessment of the potential significance of the issues brought to the NRCs' attention, the inspectors concluded that Entergy has an appropriate basis to conclude that there are no immediate safety issues associated with the electrical cable issues that have been raised. NRC inspection, however, continues.

During the conduct of the inspectors' field walk-downs to assess material condition of cables installed in the plant and to confirm some elements of the corrective actions associated with the 1989 - 1995 Cable Separation Program, the inspectors identified a

concern related to cable configuration at IP2. This involved 480 volt AC 3-phase power cables for the non-safety related charcoal filter drain line pump being run in more than one channel in a multi-channel separated cable raceway in the Primary Auxiliary Building at the 68' level. The condition was documented in CR-IP2-2004-01241, and resulted in an issued, then retracted, 10 CFR 50.72 report. The basis of the retraction was the subsequent identification of the 1997 modification that installed the cables included the use of dual fuses to provide electrical protection for the cabling from faulted conditions. Notwithstanding this retraction, the inspectors were concerned that the as-found condition of these cables reflected the potential for a configuration control issue that needed to be addressed by Entergy. To address this concern, Entergy has indicated that they plan on conducting additional field verifications to cover all raceways, which will be accomplished by the end of the next refueling outage to allow access within the containment. As part of these activities, the engineering staff at IP2 are developing field walk-down attributes to ensure that they have a consistent approach to document field conditions. The acceptability and extent of condition of the use of dual fuses at IP2 to provide electrical independence in lieu of physical separation for cables, and the development by Entergy of field walk-down attributes will be further reviewed by the NRC.

To address the issues related to the data conversion process between the two different software systems for electric cable and raceway databases the licensee has issued Revision 1 to Design Basis Improvement Project PI-10, Electrical Separation. This project is divided into two tasks - electrical separation program improvements and ECRIS program improvements. The first is the reconstitution of the electrical separation criteria, including the electrical separation licensing and design basis; ensuring processes are in place to maintain these bases and evaluating the processes plant personnel use to revise the plant configuration. The second task is to improve the new cable and raceway database, develop appropriate implementation procedures, and resolve the database anomalies. Elements of the project include: (1) reviewing aspects of the design change process used to address electrical separation criteria; (2) implementation of process changes for controlling installed cable configurations; (3) strengthened change management to ensure that the electrical separation licensing and design basis is well understood; (4) review cables entered into ECRIS that were installed since 1995, including cables designated as black cables or cables without color, to determine that they are consistent with the electrical separation criteria; (5) addressing fourteen open items from the engineering efforts that resulted in the revision of the Electrical Separation Design Basis Document IP2-DBD-222 dated December 17, 2003, in support of the WARS to ECRIS conversion; (6) review and validation of the justification used as part of the 1989 - 1995 Cable Separation program to not perform field verification of the cable spreading room and turbine building; (7) resolving raceway overflow anomalies; and (8) addressing issues of separation logic currently contained in the ECRIS program that is not consistent with the plant electrical separation criteria. The licensee is in the process of developing an integrated schedule for the implementation of Project PI-10. This schedule will be reviewed during further NRC inspection to assess the licensee corrective actions.

Enclosure

Based upon the on-site inspection activities, and the subsequent review of Entergy provided documentation, a number of issues warrant additional NRC review. Review items include: (1) further assessment of the operability issues as they relate to the existence of data conversion anomalies and configuration control practices at IP2; (2) the Corrective Action Program implementation activities as they relate to the CRs written to address the resolution of the data anomalies; (3) the process Entergy is using to review the adequacy of cable separation for cables installed as part of modifications made to the plant subsequent to 1995, and include the recent identification of a cable not being installed to the latest criteria; (4) the identification of attributes to be examined and criteria to be used in cable tray walk-downs aimed at detecting potential cable configuration control conditions that could adversely affect cable separation; (5) the acceptability of the use of dual fuses at IP2 to provide electrical independence in lieu of physical separation for cables; (6) the software and/or administrative controls used in the implementation of the WARS software program and database, and the extent that WARS data is either missing or inadequate; (7) the adequacy of design controls used to ensure proper electrical cable separation, including the adequacy of drawings and equipment identification tags used to ensure adequate configuration control; (8) Entergy's development of a schedule for the implementation of Project PI-10; and (9) the willingness of IP2 staff to bring cable separation issues to management's attention. This issue is unresolved (**URI 50-247/04-02-07**).

#### 1R16 Operator Workarounds

a. Inspection Scope (71111.16 - 1 sample)

The inspectors performed a cumulative review of operator workarounds to identify any potential effects on the functionality of mitigating systems and impacts on the operators. The inspectors reviewed workarounds and burdens identified by the licensee and also performed an evaluation of selected work orders and deficiencies to ensure the licensee was appropriately classifying these issues. The inspector evaluated deficiencies for effects on the reliability and availability, and the potential for mis-operation of a mitigating system. The inspector also reviewed the cumulative impact of deficiencies on the operators' ability to respond in a correct and timely manner to plant transients.

b. Findings

No findings of significance were identified.

#### 1R19 Post Maintenance Testing

a. Inspection Scope (71111.19 - 6 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 IP2-18895 through 18898, PWT for auxiliary feed valves FVC-406A and 406B
- WO IP2-03-20136, PWT for GT-1
- WO IP2-03-19511, PWT for 23 AFWP
- WO IP2-04-14507, PWT for stator cooling water control valve Y-07
- WO IP2-04-12726 and 13482, PWT after replacement of 22 EDG pre-lube pump
- WO IP2-03-17839, PWT following replacement of breaker 3A for 22 safety injection pump

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope (71111.22 - 5 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.

- PT-Q17B, Alternate Safe Shutdown Supply Verification to 23 Coolant Charging Pump
- PC-R19, Turbine 1<sup>st</sup> Stage Pressure Calibration
- PT-M21A, 21 Emergency Diesel Generator
- PT-M22, 22 Station Battery
- PT-Q54, Pressurizer Level Bistables

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope (71111.23 - 1 sample)

The inspectors reviewed temporary modification TA-03-2-095 implemented to block the nuisance alarm in the control room from the Power Range Upper High Flux 6% Deviation modules. CR-IP2-03-01988 identified that the nuisance alarms sounded several times a shift and were caused by two failed circuit cards (original cards supplied by Westinghouse). Because purchasing replacement cards requires a long lead time (July 2004 by the earliest) the licensee implemented temporary modification. The inspector reviewed: 1) the licensee's evaluation to confirm that defeating the failed circuit card outputs would not adversely impact the protective and control functions of the nuclear instrumentation; and 2) the 10 CFR 50.59 screen-out evaluation was appropriate to the circumstances. The inspector also reviewed the engineering evaluations in the modification package to determine their adequacy. Finally, the inspector walked-down the affected nuclear instrumentation to confirm that the alarm defeat switch was indexed to the appropriate position.

Reference material consulted by the inspector included station procedures ENN-LI-101, "10 CFR 50.59 Review Process," and ENN-DC-136, "Temporary Alterations."

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope (71114.04 - 1 sample)

An in-office inspection that reviewed recent changes to the Emergency Plan and Emergency Plan Implementing Procedures (EPIPs) was conducted on March 5-12, 2004. A thorough review was conducted for documents related to the risk significant planning standards (RSPS) and a general review was completed for non-RSPS documents. Numerous implementing procedures have been voided for the individual units because they have been incorporated into newer procedures under the combined emergency preparedness program. The review verified the changes satisfied the standards of 10 CFR 50.54(q), 10 CFR 50.47(b), the requirements of 10 CFR 50 Appendix E, the intent of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" and that the changes did not decrease the effectiveness of the Emergency Plan. These changes are subject to future NRC inspections to ensure that as a result of these changes the Emergency Plan continues to meet NRC regulations.

b. Findings

No findings of significance were identified.

1EP6 Emergency Plan Drilla. Inspection Scope (71114.06 - 1 sample)

On February 4, 2004, the inspectors observed the licensee's emergency response organization during an announced emergency preparedness training drill at Indian Point Unit 2. The simulated emergency included the activation of the Operations Support Center (OSC), 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 performance and the licensee's adherence to EIPs 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. CR-IP2-2004-00599 concluded that three of four performance indicator opportunities (classifications, notifications, and protective action recommendations) were successful. The inspectors compared the licensee's identified findings against 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
- IP-EP-222, Technical Support Center, Revision 0
- IP-EP-232, Operations Support Center, Revision 0
- IP-EP-120, Emergency Classification, Revision 0
- Emergency Action Levels
- Condition Report Nos. IP2-2004-00551, 552, 553, 556, 561, 573, 579, and 599.

b. Findings

No findings of significance were identified.

## 2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control to Radiologically Significant Areasa. Inspection Scope (71121.01 - 1 sample)

The inspector reviewed radiological work activities and practices and procedural implementation during tours and observations of the facilities to verify that the licensee was properly implementing physical, engineering, and administrative controls for access to high radiation areas and other radiologically controlled areas. Implementation of the access control program was reviewed against the criteria contained in 10 CFR 20, site Technical Specifications, and the licensee's procedures.

On March 9, 2004, the inspector observed a pre-job brief and high radiation area entry controls, as conducted by a radiation protection technician, for erecting scaffolding to support work on pressure control valve PCV-113B. The performance of this radiation work was reviewed with respect to radiation work permit requirements and verbal directions provided by the radiation protection technician. During a plant tour on March 9, the inspector observed work activities in the primary auxiliary, maintenance and outage, and fuel storage buildings in Unit 2. During the tour, 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, radiological protection procedures, and 10 CFR 20 requirements.

On March 11, the inspector toured and observed work activities in the fuel handling and chemical systems buildings in Unit 1 and the Unit 1 sphere annulus where the north curtain drain effluent is stored, subsequently treated through charcoal columns, and processed through a cesium-specification resin bed prior to release. The chemistry sample and analysis results of the north curtain drain effluent indicated barely detectable cesium-137 activity. Post-treatment release levels equate to a public dose level of  $1E-4$  mrem/yr. The inspector discussed with the project leaders the current status of work and plans for the Unit 1 fuel pool re-mediation project, which included a review of recent inspections of the structural integrity of the Unit 1 spent fuel and remediation plans for the East spent fuel pool.

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).

During the course of this inspection, the inspector reviewed recent Electric Power Research Institute (EPRI) standard radiation measurement program radiological source term data trends for both IP2 and IP3. Based on reactor coolant system piping dose rate data review, both units were low when compared to the national pressurized water reactor (PWR) median radiological source-term value.

Enclosure

The 2003 exposure performance and 2004 exposure estimates for all three units was reviewed. Collective exposure performance for IP2 and IP3 were the lowest exposures, to date (IP2 non-outage year - 9.3 person-rem, and IP3 outage year - 96.1 person-rem). Exposure estimates for 2004 are higher and reflect higher maintenance activities during the IP2 outage (IP2 outage year - 180.8 person-rem, and IP3 non-outage year - 8.883 person-rem).

The inspector also reviewed the Indian Point ALARA Committee Meeting minutes for November 20, 2003, December 16, 2003, and February 12, 2004.

The 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.

b. Findings

No findings of significance were identified.

## 4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator (PI) Verification1. Residual Heat Removal System Unavailabilitya. Inspection Scope (71151 - 1 sample)

The inspector reviewed Entergy's Performance Indicator (PI) data for Residual Heat Removal (RHR) Safety System Unavailability to verify whether the PI data was accurate and complete. The inspectors compared the PI data reported by the licensee to information gathered from control room logs, condition reports, and work orders for the four quarters in 2003. In addition, the inspectors interviewed the system engineers. The inspectors compared the PI data against the guidance contained in NEI 99-02, revision 1.

b. Findings

No findings of significance were identified.

2. Reactor Coolant System Leakagea. Inspection Scope (71151 - 1 sample)

The inspector reviewed the PI for reactor coolant system (RCS) leakage for the period from January - December 2003. This PI remained in the Green band. The inspector reviewed the completed SOP 1.7 RCS leak rate surveillance determinations documented in control room logs to verify the adequacy of the reported PI data. The licensee's corrective action program records were also reviewed to determine if any problems with the collection of PI RCS leakage data had occurred. The inspectors compared the PI data against the guidance contained in NEI 99-02.

b. Findings

No findings of significance were identified.

3. Unplanned Scrams Per 7000 Critical Hoursa. Inspection Scope (71151 - 1 sample)

The inspector reviewed Entergy's PI data for unplanned scrams per 7000 critical hours for the four quarters of 2003 to verify the PI data was accurate and complete. The PI remained in the Green band during 2003. The inspector reviewed operator logs, licensee event reports, and monthly operating reports to compare the PI data reported by the licensee. The data was evaluated against the guidance contained in NEI 99-02.

b. Findings

No findings of significance were identified.

#### 4OA2 Identification and Resolution of Problems

##### 1. Daily Review (71152)

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 item entered into the licensee's corrective action program. This review was accomplished by reviewing hard copies of each condition report.

##### 2. Annual Sample Review

###### a. Inspection Scope (71152 - 1 sample)

The inspector performed a detailed review of condition reports, corrective actions, and work orders associated with water intrusion into the gas turbine No. 1 (GT-1) enclosure and its impact on equipment operability. The inspector performed this review on documentation dating back to 2001. The reports 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

Introduction. A Green finding was identified involving untimely repairs of roof leaks on the GT-1 enclosure resulting in the failure of support equipment and additional GT-1 outage time during which the gas turbine could not perform its intended function.

Description. CR-IP2-2004-00610 was written on February 6, 2004, describing a condition involving GT-1 enclosure roof leaks and water dripping onto the diesel starting motor battery charger. Actions were taken at that time to dry out the battery charger. On March 5, 2003, the battery charger was replaced due to improper voltage regulation. The licensee determined that the failure was due to water leaking through the roof and into the battery charger. This was the second battery charger replacement since October 2003. While reviewing this issue the inspectors noted that there had been two related breaker failures due to water intrusion in May and June of 2003, which caused GT-1 to be inoperable. These were documented in CRs IP2-2003-03403 and IP2-2003-03687. The apparent cause evaluation for these two failures referenced other CRs that had been written, dating back to 1999, involving GT-1 enclosure roof leaks. Corrective actions were narrowly focused on patching the roof in only the specific areas that leaks had occurred. No evidence of an extent of condition review was identified by the inspectors during the detailed review of the above stated CRs. WO IP2-01-25055 was initiated to perform more complete roof repairs, but this work activity was still on hold at the time of the March 2004 failure. The inspectors determined that the voltage

regulation and subsequent repairs to the diesel starting motor battery charger resulted in over 116 hours of increased unavailability of GT-1 during the first quarter of 2004.

Analysis. The inspectors determined that this was a performance deficiency since corrective actions were not implemented in a timely manner to prevent additional failures due to water intrusion. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function and the finding was not the result of any willful violation of NRC requirements or Entergy's procedures. This finding was determined to be greater than minor since it was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring reliability and availability of mitigating systems. GT-1 is credited as an alternate AC power source for both station blackout and Appendix R fire scenarios. The inspectors conducted a Phase 1 SDP screening and determined that the untimely corrective action to prevent water intrusion in the GT-1 structure was of a very low safety significance. The unavailability of GT-1 did not result in an actual loss of safety function for the mitigating system since GT-3 was available while GT-1 was inoperable. This finding did not screen as potentially risk significant due to seismic, fire, flooding, or severe weather initiating events. This finding is also associated with the cross-cutting issue of problem identification and resolution, in that untimely corrective actions resulted in the increased unavailability of plant equipment. **(FIN 50-247/04-002-06, Failure to take appropriate corrective actions to ensure the reliability and availability of GT-1. )** This issue has been placed in Entergy's Corrective Action Program, reference CR-IP2-2004-1188.

Enforcement. No violation of regulatory requirements occurred. The inspector determined that the failure to perform timely corrective actions occurred on a non-safety related system and therefore did fall under the guidance of 10 CFR 50, Appendix B.

3. Annual Sample Review

a. Inspection Scope (71152 - 1 sample)

The inspectors reviewed a sample of open CRs, work orders, engineering requests, and procedure change requests to determine the extent and significance of the backlog of work related to the emergency preparedness (EP) facilities, equipment, procedures, and personnel. The inspectors also reviewed a sample of items from the last two years, including: completed CRs for adequacy consistent with their safety and risk significance, causal analysis, and operability/functionality; EP departmental self-assessments and Quality Assurance audits and surveillances of EP activities; and completed surveillance tests for accuracy and identification and resolution of problems and/or results not consistent with the acceptance criteria. The inspectors interviewed personnel from the EP organization and personnel supporting the emergency response organization. The inspectors toured all the IPEC emergency response facilities, including: both operations support centers; both technical support centers; the emergency operations facility; the alternate emergency operations facility; and the joint news center. The documents reviewed are listed in the supplemental information in the attachment to this report.

Enclosure



b. Findings

No findings of significance were identified. However, the inspectors identified that the licensee was unable to easily determine the extent of the backlog of open issues related to activities affecting the EP function. For example, the CR system did not contain keywords that supported an overall search for EP; instead, the licensee did a word search of the open CRs using such phrases as EOF (emergency operations facility), TSC (technical support center), and PRM (process radiation monitor). During the inspection, the licensee determined that additional keywords should be added to the CR system allowing for searches by function, in addition to searching by system. The inspectors noted that the station had recently created a new position of EP System Engineer. This individual is responsible for coordinating the review of activities related to the EP function, such as reviewing completed surveillance tests and condition reports.

4. Baseline Procedure Problem Identification and Resolution Review

a. Inspection Scope (71152)

The inspectors reviewed CRs associated with 10 CFR 50.59 issues and plant modifications to ensure that the licensee was identifying, evaluating, and correcting problems associated with these activities and that the planned or completed corrective actions for these problems were appropriate. The inspectors also reviewed five self-assessments related to 10 CFR 50.59 safety evaluation and plant modification activities at IP2.

The inspector selected 17 corrective action CRs associated with the radiation protection program. The inspector verified that problems identified by these CRs were properly characterized in the licensee's event reporting system, and that applicable causes and corrective actions were identified commensurate with the safety significance of the radiological occurrences.

The listing of the CRs and self assessments reviewed is provided in the supplemental information attached to this report.

b. Findings

No findings of significance were identified.

5. Cross-References to PI&R Findings Documented Elsewhere

Section 1R13 discusses a finding (non-cited violation) in which the licensee performed a modification to safety-related equipment without following the formal modification process. This was contrary to 10 CFR 50, Appendix B, Criterion III, "Design Control." This finding was also determined to have a causal factor associated with PI&R. During the past year, the corrective actions for modifications that did not have appropriate evaluations failed to prevent this issue from recurring.

4OA4 Cross-Cutting Aspects of Findings

Section 1R14 discusses a finding in which the configuration of the outgoing electrical distribution system was placed in a condition which impacted the reliability of mitigating equipment due to a lack of knowledge on the system operation and interrelations by the operations staff. This finding was determined to be associated with the cross-cutting area of human performance.

4OA6 Meetings, Including Exit

On April 14, 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

Enclosure

**SUPPLEMENTAL INFORMATION****KEY POINTS OF CONTACT**Licensee Personnel:

W. Axelson	Radiological Engineering Supervisor
T. Barry	Security Superintendent
F. Bloise	PI-10 Project Manager
J. Breban	Security Shift Supervisor
P. Conroy	Licensing Manager
J. Cooper	Senior Security Specialist
G. Dahl	Senior Licensing Engineer
R. Deschamps	Radiation Protection Coordinator
R. DeCensi	Technical Support Manager and Radiation Protection Manager
P. Donahue	Senior Environmental Specialist
C. English	Unit 1 Project Coordinator
K. Finucan	Senior Emergency Planner
R. Fuchek	Radiation Protection Supervisor
D. Gainer	Risk Analyst
D. Gately	Assistant Radiation Protection Manager
R. Giquere	Electrical Design Engineer
P. Gropp	Manager DBI Project
F. Inzirillo	Emergency Preparedness Manager
T. Jones	Nuclear Safety/Licensing Specialist, Licensing
M. Kempski	System Engineer (Gas Turbines)
M. Kerns	Chemistry Manager
L. Lee	System Engineering Supervisor, Support Systems
R. LaVera	ALARA Planning Supervisor
T. McCaffrey	Manager of System Engineering
R. Mages	Radiological Engineer
W. Mahlmeister	Technical Specialist
D. Mayer	Unit 1 Project Manager
B. Meeks	System Engineer (EDG)
R. Milici	Senior Engineer, Electrical Design Engineering
W. Mahlmeister	Electrical Engineer
J. O'Driscoll	System Engineer (CCW)
J. Peters	Unit 2 Plant Chemist
S. Petrosi	Manager, Design Engineering
F. Phillips	Emergency Preparedness Staff
T. Phillips	Radiological Engineer
J. Raffaele	Design Engineering Supervisor - Electrical
T. Redfern	Security Shift Supervisor
B. Roles	Senior Licensing Engineer
E. Salisbury	Radiological Engineer
R. Sutton	Maintenance Rule Coordinator
L. Theresa	System Engineer

J. Tuohy	Manager Engineering Support
R. Walpole	Nuclear Manager
C. Wend	Radiation Protection Manager
W. Zolotas	Radiation Protection Technician

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

Opened/Closed

NCV 05000247/200402-01	A non-cited violation of TS 5.4.1.d. for the failure to perform a transient combustible evaluation for 330 gallons of oil temporarily stored in Fire Zone 6A.
NCV 05000247/200402-02	A non-cited violation of 10 CFR 50, Appendix B, Criterion III "Design Control" for the failure to implement appropriate design controls for a modification made to the OTDT controller.
FIN 05000247/200402-03	A very low risk significant finding involving the improper control of an out-going 345 kV feeder breaker during a feeder outage.)
FIN 05000247/200402-06	A very low risk significant finding involving the failure to take appropriate corrective actions to ensure the reliability and availability of Gas Turbine No. 1.

Opened

URI 05000247/200402-04	This item will remain unresolved pending completion of the licensee's evaluation and inspector review of the frequency limits associated with the 118 VAC instrument buses and determination of the impact of operating at 60.7 Hz on risk significant loads.
URI 05000247/200402-05	This item will remain unresolved pending completion of the licensee's analysis and inspector review to assess the impacts during a turbine runback and uncontrolled rod withdrawal events during a miscalibration of the reference temperature conditions.
URI 05000247/200402-07	This item will remain unresolved pending the inspectors' final review of the adequacy of Entergy's technical basis for concluding the continued operability of safety systems associated with the WARS to ECRIS conversion and associated issues involving Entergy's handling of this cable separation issue.

## LIST OF DOCUMENTS REVIEWED

### Section 1R06, Flood Protection Measures

#### Procedures/Operating Experience

2-AOP-FLOOD-1, Flooding, revision 0  
2-AOP-SW-1, Service Water Malfunction, revision 2  
NRC Information Notice 2003-008, Potential Flooding Through Unsealed Concrete Floor Cracks  
NRC inspection report 50-397/02-03, Columbia Generating Station - NRC Integrated Inspection Report  
Final Safety Analysis Report Section 8.2.2.6

#### Condition Reports

CR-IP2-2003-5807, CR-IP2-2003-6065, CR-IP2-2003-6974, CR-IP2-2003-6975

### Section 1R15, Operability Evaluations

#### Program Documents/Procedures

CR-IP2-2004-01059 - Reopens resolution of WARS to ECRIS data discrepancies  
CR-IP2-2002-07454 - Resolve discrepancies identified by the WARS to ECRIS conversion  
CR-IP2-2003-02665 - Resolve data discrepancies, WARS to ECRIS conversion  
CR-IP2-2004-01237, concerning three cables extending through a wall  
CR-IP2-2004-01241, concerning a non-safety cable routed in two redundant safety channels  
CSR-013, Cable Separation Report: Heavy Power Cables, PAB, dated 1994  
Data Transfer Verification Report, P1469, INDMS Revision 03.03.00 IP2 0001A  
DBD 93-051, Electrical Separation Design Basis Document, Revision 0  
Design Basis Improvement Project PI-10: Electrical Separation, Revision 0 and 1  
EGP-S80-009-2, Calculation: Metal Dividers for Heavy Power Cable Trays, Revision 2  
Electrical Drawing 9321-F-3005-102, Rev 102, one-line diagram of 480V Motor Control Center 27 and 27A  
ER-IP2-03-20601, Review and Resolve ECRIS to WARS Data Transfer Verification Report Anomalies, Revision 0  
Indian Point 2 - Reactor Protection and Engineered Safety Features Installation Criteria, dated November 18, 1969  
IP2-DBD-222, Design Basis Document for Electrical Separation, Revision 1  
IP2-RPT-04-00007, Engineering Report: Evaluation of Cable Separation Issue With Circuit MCC27-8MR, Revision 0  
Letter from Con Ed to NRC, dated March 11, 1988, regarding original design criteria for electrical cable separation

Specification EI-2031, Design Criteria for Cable Separation at IP2, Revision 0

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Procedures

Indian Point Energy Center Emergency Plan, Rev 04-01  
IP-2003, Control Room Watch Chemist, Rev 7  
IP-EP-120, Emergency Classification, Rev 0  
IP-EP-130, Emergency Notification and Mobilization, Rev 1  
IP-EP-212, Unit 2 Control Room, Rev 0 & 1  
IP-EP-213, Unit 3 Control Room, Rev 0 & 1  
IP-EP-222, Unit 2 Technical Support Center, Rev 0 & 1  
IP-EP-223, Unit 3 Technical Support Center, Rev 0 & 1  
IP-EP-232, Unit 2 Operational Support Center, Rev 0  
IP-EP-233, Unit 3 Operational Support Center, Rev 0  
IP-EP-240, Security, Rev 0  
IP-EP-250, Emergency Operations Facility, Rev 1 & 2  
IP-EP-251, Alternate Emergency Operations Facility, Rev 2  
IP-EP-310, Dose Assessment, Rev 2 & 3  
IP-EP-320, Radiological Field Monitoring, Rev 0 & 1  
IP-EP-330, Airborne Sample Analysis, Rev 0  
IP-EP-350, Emergency Contamination Control, Rev 0  
IP-EP-360, Core Damage Assessment, Rev 0  
IP-EP-410, Protective Action Recommendations, Rev 3  
IP-EP-430, Personnel Accountability, Rev 1  
IP-EP-510, Meteorological, Radiological & Plant Data Acquisition System, Rev 2  
IP-EP-520, Modular Emergency Assessment & Notification System (MEANS), Rev 2  
IP-EP-630, On-Site Medical Emergency, Rev 1  
IP-1055, Fire Emergency Response, Rev 16

Section 4OA1, Problem Identification and Resolution

Condition Reports

Unit 2

CR-IP2-2004-00193, CR-IP2-2004-00592, CR-IP2-2004-00680, CR-IP2-2004-00737,  
CR-IP2-2004-00740, CR-IP2-2004-00748, CR-IP2-2004-00904, CR-IP2-2004-00952,  
CR-IP2-2003-06804, CR-IP2-2004-00506, CR-IP2-2003-07161, CR-IP2-2003-07330,  
CR-IP2-2003-07359, CR-IP2-2003-07411, CR-IP2-2004-00021, CR-IP2-2004-00076,  
CR-IP2-2004-00120

Section 4OA2, Identification and Resolution of Problems

**Program Documents & Procedures:**

Emergency Plan for Indian Point Unit NOS. 1 and 2 (4/24/96)  
ENN-LI-102, Corrective Action Process, Revision 2  
ENN-LI-104, Self-Assessment and Benchmark Process, Revision 3  
Indian Point 3 Emergency Plan, Revision 18 (1988)  
Indian Point Energy Center Emergency Plan, Revision 03-01  
IP-EP-510, Meteorological, Radiological & Plant Data Acquisition System, Revision 2  
IP-EP-AD2, Emergency Planning Controlled Documents, Revision 2  
IP-SMM EP-101, Emergency Plan Program Responsibilities, Revision 0  
IP-SMM-AD-102, IPEC Implementing Procedure Preparation, Review, and Approval,  
Revision 0  
IP-SMM-TQ-110, Emergency Response Training Program, Revision 0  
IPEC Emergency Response Training Program Curriculum, Revision 18

**Audits, Surveillances & Self-Assessments:**

Audit A02-06-I, IP3 Emergency Planning Program (June 2002)  
Audit A03-06-I, Emergency Planning, Training, Records and Documents, Quality Assurance,  
(June 2003)  
Self-Assessment, Emergency Response Organization Performance (March 2003)  
Self-Assessment, Department Program Performance (February 2003)  
Self-Assessment, Performance Evaluation 2002 FEMA Exercise (September 2002)  
Self-Assessment, Emergency Planning Inventories (November 2003)  
Self-Assessment, TSC & OSC Emergency Locker Position Books (March 2002)  
Self-Assessment, Drill Results (February 2003)  
Self-Assessment, Drill Results (June 2003)  
Self-Assessment, Drill Results (September 2003)  
Surveillance SR-03-24, Emergency Planning Exercise (October 2003)

**Surveillance Tests:**

2-IC-RMP-R-2/17B-F, Functional Test of Radiation Monitors R-2,4,6,7,8,17A,17B, Revision 1  
 2-PC-2Y23-49, Steam Generator Liquid Radiation Monitor Calibration, Revision 3  
 2-PC-2Y23-54, Unit 1 Liquid Waste Distillate Radiation Monitor Calibration, Revision 2  
 2-PC-EM30, Process Radiation Monitor R-41/42 Calibration, Revision 7  
 2-PC-EM31, Process Radiation Monitor R-43/44 Calibration, Revision 6  
 2-PT-M82, Process Radiation Monitor R-41/42 Channel Operational Test, Revision 16  
 2-PT-Q42, Wide Range Noble Gas Monitor R-27 Functional, Revision 19  
 2-PT-Q76, Liquid Effluent Radiation Monitor R-49 Channel Operational Test, Revision 3  
 2-PT-Q77, Liquid Effluent Radiation Monitor R-54 Channel Operational Test, Revision 1  
 2-PT-Q83, Effluent Radiation Monitor R-43/44 Channel Operational Test, Revision 5  
 3-PC-OL48, Fuel Storage Building Radiation Monitor Calibration R-5, Revision 1  
 3-PC-OL49A, Steam Generator Blowdown Radiation Monitor Calibration R-19, Revision 0  
 3-PC-OL58A, Process Radiation Monitors R-11,12 Calibration, Revision 1  
 3-PC-R14, Process Radiation Monitor Calibration, Revision 18  
 3-PC-R36, Channel Calibration of Wide Range Gas Monitor R-27, Revision 15  
 3-PC-R46A, Containment High Range Radiation Monitor Calibration R-25, Revision 11  
 3-PC-R58A, Process Radiation Monitors R-11,12 Calibration, Revision 8  
 3-PT-M032, Seismic Instrumentation Channel Check, Revision 15  
 3-PT-M36, Functional Test of Radiation Monitor R-14, Revision 14  
 3-PT-M36A, Process Radiation Monitor R-19, Revision 13  
 3-PT-M59, Wide Range Plant Vent Gas Monitor R-27, Revision 15  
 3-PT-Q3B, Fuel Storage Building Radiation Monitor Functional R-5, Revision 18  
 3-PT-Q56, Channel Functional Test of V.C. Radiation Monitors R-25,26, Revision 17  
 3-PT-Q70, Steam Generator Blowdown Radiation Monitor Functional R-19, Revision 20  
 3-PT-R37A, Triaxial Time-History Accelerograph Calibration, Revision 3  
 3-PT-R37B, Triaxial Peak Accelerograph Calibration, Revision 2  
 3-PT-R37C, Triaxial Response Time Spectrum Recorders Calibration, Revision 3  
 3-PT-SA24, Seismic Instrumentation Functional, Revision 14  
 3-PT-SA37, Meteorological Tower Semi-Annual Sensor Calibration, Revision 4 (10/14/03)  
 RE-EP-13-06, Wind Direction System Calibration and Substitution Box Test Procedures, Revision 8 (10/16/03)

**Condition Reports (\* denotes a CR generated as a result of this inspection):**

IP2-2003-00020	IP2-2003-05908	IP2-2004-00155	IP3-2002-03373	IP3-2003-00839
IP2-2003-00022	IP2-2003-06060	IP2-2004-00284	IP3-2002-03870	IP3-2003-02965
IP2-2003-02404	IP2-2003-06245	IP2-2004-00486	IP3-2002-03871	IP3-2003-05249
IP2-2003-02732	IP2-2003-06422	IP2-2004-00659*	IP3-2002-03922	IP3-2003-05250
IP2-2003-02778	IP2-2003-06445	IP2-2004-00718*	IP3-2002-04019	IP3-2003-05251
IP2-2003-03010	IP2-2003-06492	IP2-2004-00723*	IP3-2002-04244	IP3-2003-05252
IP2-2003-03477	IP2-2003-07187	IP3-2002-00787	IP3-2002-04249	IP3-2003-05278
IP2-2003-03485	IP2-2003-07200	IP3-2002-01360	IP3-2002-04363	IP3-2003-05279
IP2-2003-05169	IP2-2003-07224	IP3-2002-01946	IP3-2002-04385	IP3-2003-05789
IP2-2003-05176	IP2-2003-07287	IP3-2002-01947	IP3-2003-00644	IP3-2004-00388*
IP2-2003-05515	IP2-2003-07321	IP3-2002-02856	IP3-2003-00646	IP3-2004-00486*
IP2-2003-05584	IP2-2003-07445	IP3-2002-03344	IP3-2003-00685	IP3-2004-00487*
IP2-2003-05884	IP2-2004-00134	IP3-2002-03360	IP3-2003-00686	IP3-2004-00488*



**Learning Organization Condition Reports:**

IP3LO-2002-00103	IP3LO-2003-00088	IP3LO-2003-00318	IP3LO-2003-00519
IP3LO-2003-00087	IP3LO-2003-00090	IP3LO-2003-00442	IP3LO-2003-00528
IP3LO-2003-00087	IP3LO-2003-00091	IP3LO-2003-00472	

**Work Orders:**

I3-000315000	I3-920043700	I3-990265800	IP3-04-11479
I3-020131000	I3-980076700	IP3-03-04109	

**LIST OF BASELINE INSPECTIONS PERFORMED**

71111.01	Adverse Weather	1R01
71111.02	Evaluation of Changes, Texts or Experiments	1R02
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
71114.04	Emergency Action Level and Emergency Plan Changes	1EP4
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**

AC	alternating current
AFP	auxiliary feed pump
AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
AOP	abnormal operating procedure
BATP	boric acid transfer pump
CAP	corrective action program
CFR	Code of Federal Regulation
CR	condition report
CST	condensate storage tank
DTVR	data transfer verification report
ECRIS	electrical cable and raceway information system
EDG	emergency diesel generator
EOF	emergency operations facility
EP	emergency planning
GT	gas turbine
IMC	inspection manual chapter
IP2	Indian Point Unit 2
IPEC	Indian Point Energy Center
IPEEE	Individual Plant Examination for External Events
JNC	joint news center
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	other activities
OS	occupational radiation safety
OSC	operations support center
OTDT	over temperature delta temperature
PI	performance indicator
PWR	pressurized water reactor
PWT	post work test
RCS	reactor coolant system
RHR	residual heat removal
RSPS	risk significant planning standard
RWP	radiation work permit
SAO	station administrative orders
SDP	significance determination process
SE	safety evaluation
SOP	system operating procedure
TCE	transient combustible evaluation
TS	technical specifications
TSC	technical support center
UFSAR	Updated Final Safety Analysis Report
WARS	wire and raceway system
WO	work order