UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

October 22, 2009

Mr. Joseph E. Pollock
Site Vice President
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 – NRC INTEGRATED INSPECTION REPORT 05000247/2009004

Dear Mr. Pollock:

On September 30, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 2. The enclosed integrated inspection report documents the inspection results, which were discussed on October 8, 2009, 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of the inspection, no findings of significance were identified.

In accordance with Title 10 of the Code of Federal Regulations Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room of from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Blake Welling, Acting Chief
Projects Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000247/2009004
w/ Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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U.S. Nuclear Regulatory Commission

Region I

Docket No.:	50-247
License No.:	DPR-26
Report No.:	05000247/2009004
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	Indian Point Nuclear Generating Unit 2
Location:	450 Broadway, GSB Buchanan, NY 10511-0249
Dates:	July 1, 2009 through September 30, 2009
Inspectors:	G. Malone, Senior Resident Inspector - Indian Point 2 C. Hott, Resident Inspector - Indian Point 2 J. Ayala, Reactor Inspector J. Heinly, Reactor Inspector O. Ayegbusi, Reactor Inspector S. Barr, Senior Emergency Preparedness Inspector
Approved By:	Blake Welling, Acting Chief Projects Branch 2 Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY OF FINDINGS 3

REPORT DETAILS 4

1. REACTOR SAFETY 4
   1R01 Adverse Weather Protection 4
   1R04 Equipment Alignment 5
   1R05 Fire Protection 5
   1R06 Flood Protection Measures 6
   1R07 Heat Sink Performance 6
   1R11 Licensed Operator Requalification Program 7
   1R12 Maintenance Effectiveness 7
   1R13 Maintenance Risk Assessments and Emergent Work Control 8
   1R15 Operability Evaluations 8
   1R19 Post-Maintenance Testing 9
   1R22 Surveillance Testing 9
   1EP2 Alert and Notification System (ANS) Evaluation 10
   1EP6 Drill Evaluation 10

4. OTHER ACTIVITIES 11
   4OA1 Performance Indicator Verification 11
   4OA2 Identification and Resolution of Problems 11
   4OA3 Event Follow-Up 13
   4OA5 Other Activities 13
   4OA6 Meetings 14

ATTACHMENT: SUPPLEMENTAL INFORMATION 14

   KEY POINTS OF CONTACT A-1
   LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED A-1
   LIST OF DOCUMENTS REVIEWED A-1
   LIST OF ACRONYMS A-8

SUMMARY OF FINDINGS

IR 05000247/2009004; 07/01/2009 – 09/30/2009; Indian Point Nuclear Generating (Indian Point) Unit 2; Resident Integrated Inspection Report.

This report covered a three-month period of inspection by resident and region based inspectors. The NRC's program for overseeing safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

REPORT DETAILS

Summary of Plant Status

Indian Point Unit 2 operated at or near full reactor power (100%) for the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Hurricane Preparedness

a. Inspection Scope

The inspectors evaluated implementation of the adverse weather preparation procedures and compensatory measures before the onset of, and during adverse weather conditions. Specifically, the inspectors evaluated Entergy staff's preparations and implementation of compensatory measures during periods of severe storms and approaches of hurricanes. The inspectors conducted walkdowns of plant equipment that could be affected by high winds and heavy rains, and reviewed operating procedures to ensure that equipment important to safety would not be adversely affected by severe weather conditions. The documents reviewed during this inspection are listed in the Attachment. This inspection satisfied one inspection sample for the onset of adverse weather.

b. Findings

No findings of significance were identified.

.2 External Flooding

a. Inspection Scope

The inspectors evaluated the site's readiness to cope with external flooding prior to the onset of several days of heavy rain forecasted due to Atlantic storm approaches. The inspectors reviewed design documentation and site procedures to identify areas most susceptible to external flooding and methods for the site of coping with flood conditions. The inspectors walked-down the service water pump area, the 480-Volt switchgear room, and the auxiliary feed pump room to evaluate the condition of equipment used to mitigate the effects of flooding and to evaluate the condition of potential sources of internal flooding (e.g., additional fluid systems, piping expansion joints, fire protection systems). The documents reviewed during this inspection are listed in the Attachment. This inspection satisfied one inspection sample for the onset of external flooding.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04Q - 4 samples)

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns to verify the operability of redundant or diverse trains and components during periods of system train unavailability or following periods of maintenance. The inspectors referenced system procedures, Updated Final Safety Analysis Report (UFSAR), and system drawings to verify the alignment of the available train supported its required safety functions. The inspectors also reviewed applicable condition reports (CRs) and work orders to ensure Entergy personnel identified and properly addressed equipment discrepancies that could potentially impair the capability of the available train, as required by Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action." The documents reviewed during these inspections are listed in the Attachment.

The inspectors performed a partial walkdown on the following systems, which represented four inspection samples:

- 21 residual heat removal (RHR) system train when 22 RHR pump was tagged out for maintenance;
- 21 and 23 safety injection systems in response to 22 safety injection valve discovered unlocked;
- 24 and 25 service water trains during 26 service water pump outage; and
- 21 and 23 auxiliary feed water trains during 22 auxiliary boiler feed pump testing.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q – 5 samples)

.1 Resident Inspector Quarterly Walkdowns

a. Inspection Scope

The inspectors conducted tours of several fire areas to assess the material condition and operational status of fire protection features. The inspectors verified, consistent with the applicable administrative procedures, that: combustibles and ignition sources were adequately controlled; passive fire barriers, manual fire-fighting equipment, and suppression and detection equipment were appropriately maintained; and compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with Entergy's fire protection program. The inspectors evaluated the fire protection program for conformance with the requirements of License Condition 2.K. The documents reviewed during this inspection are listed in the Attachment. This inspection represented five inspection samples for fire protection tours, and was conducted in the following areas:

- Fire Zone 55/55A/56A/57A/58A, Main, station auxiliary, and unit auxiliary transformer yard;

- Fire Zone 31A, Primary auxiliary building piping tunnel;
- Fire Zone 32A, Electrical tunnel;
- Fire Zone 106A, Reactor water storage and primary water storage tank area; and
- Fire Zone 600/610, Conventional hydrogen storage tank area.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 sample)

a. Inspection Scope

The inspectors completed one internal flood protection sample. The inspectors reviewed selected risk-important plant design features and Entergy procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors focused on mitigation strategies and equipment for the 18' and 32' elevation of the auxiliary feedwater pump building. The inspectors reviewed flood analysis and design documents, including the UFSAR, and abnormal operating procedures. The inspectors observed the condition of wall penetrations, watertight doors, hinged flood gates, and drains to assess their readiness to contain flow from an internal flood in accordance with the design basis. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A - 1 sample)

a. Inspection Scope

The inspectors selected the 21 component cooling water heat exchanger for review to determine the heat exchanger's readiness and availability to perform its safety functions. The inspectors reviewed the design basis for the component, reviewed station commitments to NRC Generic Letter 89-13, and reviewed engineering reports that documented results of previous heat exchanger internal inspections. The inspectors reviewed engineering results of the inspection to verify appropriate corrective actions were initiated for deficiencies that were discovered by station personnel. The inspectors reviewed documents for and verified that the amount of tubes plugged within the heat exchanger did not exceed the maximum amount allowed. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q – 1 sample)

.1 Quarterly Review

a. Inspection Scope

On August 23, 2009, the inspectors observed licensed operator simulator training, which included a steam generator tube leak and subsequent rupture coincident with a loss of offsite power scenario. The inspectors observed the training session to verify operator performance was adequate and evaluators identified and documented crew performance problems. The inspectors evaluated the performance of risk-significant operator actions including the use of emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms, performance of timely control board operation and manipulation, and the oversight and direction provided by the control room supervisor. The inspectors also assessed simulator fidelity with respect to the actual plant. The inspectors evaluated licensed operator training for conformance with the requirements of 10 CFR 55, "Operator Licenses." The documents reviewed during this inspection are listed in the Attachment. This observation of operator simulator training represented one inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors reviewed performance-based problems that involved structures, systems, and components (SSCs) to assess the effectiveness of maintenance activities. When applicable, the reviews focused on:

- Proper maintenance rule scoping in accordance with 10 CFR 50.65;
- Characterization of reliability issues;
- Changing system and component unavailability;
- 10 CFR 50.65(a)(1) and (a)(2) classifications;
- Identifying and addressing common cause failures;
- Trending of system flow and temperature values;
- Appropriateness of performance criteria for SSCs classified (a)(2); and
- Adequacy of goals and corrective actions for SSCs classified (a)(1).

The inspectors also reviewed system health reports, maintenance backlogs, and maintenance rule basis documents. The inspectors evaluated maintenance effectiveness and monitoring activities for conformance with the requirements of 10 CFR 50.65. The documents reviewed during this inspection are listed in the Attachment. The following samples were reviewed and represented two inspection samples:

- 118-Volt (alternating current) vital electrical system inverters; and
- Main turbine runback circuit.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 4 samples)

a. Inspection Scope

The inspectors reviewed scheduled and emergent maintenance activities to verify that the appropriate risk assessments were performed prior to removing equipment from service for maintenance or repair. The inspectors reviewed selected risk assessments to verify assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors reviewed the plant risk to ensure risk was promptly reassessed and managed. The documents reviewed during this inspection are listed in the Attachment. The following activities represented four inspection samples:

- Planned maintenance associated with 22 auxiliary boiler feed pump testing;
- Planned maintenance associated with pump down of fire water tank and testing of 21 RHR heat exchanger outlet flow-control valve, HCV-638;
- Planned maintenance on 23 component cooling pump during 480-Volt vital bus under-voltage relay replacement; and
- Planned maintenance on 22 turbine closed cooling heat exchanger and 22 instrument air dryer during reactor protection logic testing.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 3 samples)

.1 Resident Quarterly Review

a. Inspection Scope

The inspectors reviewed operability evaluations to assess the acceptability of the evaluations, the use and control of compensatory measures when applicable, and compliance with Technical Specifications (TS). The inspectors' reviews included verification that operability determinations were performed in accordance with procedure ENN-OP-104, "Operability Determinations." The inspectors assessed the technical adequacy of the evaluations to ensure consistency with the TS, UFSAR, and associated design basis documents (DBDs). The documents reviewed during this inspection are listed in the Attachment.

The following operability evaluations were reviewed and represented three inspection samples:

- Unexpected vibrations on service station transformer bus 6A;
- Impact of groundwater leakage on safety related cables and bus-work on electrical tunnel; and

- Low flow conditions in the central control room heating, ventilation, and air conditioning (HVAC) system.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 6 samples)

a. Inspection Scope

The inspectors reviewed post-maintenance test procedures and associated test activities for selected risk-significant mitigating systems, and assessed whether the effect of maintenance on plant systems was adequately addressed by control room and engineering personnel. The inspectors verified that: test acceptance criteria were clear and the test demonstrated operational readiness consistent with design basis documentation; test instrumentation had current calibrations with the appropriate range and accuracy for the application; and the tests were performed as written, with applicable prerequisites satisfied. Upon completion of the tests, the inspectors reviewed whether equipment was returned to the proper alignment necessary to perform its safety function. Post-maintenance testing was evaluated for conformance with the requirements of 10 CFR 50, Appendix B, Criterion XI, "Test Control." The documents reviewed during this inspection are listed in the Attachment. The following post-maintenance activities were reviewed and represented six inspection samples:

- Rebuild of 21 primary water pump;
- 26 service water strainer modification maintenance;
- Repair of containment spray pump 22 discharge isolation valve;
- Repair of 22 charging pump seal package;
- Replacement of 23 component cooling pump power supply breaker; and
- Replacement of 22 residual heat removal pump power supply breaker.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 5 samples)

a. Inspection Scope

The inspectors observed performance of portions of surveillance tests and/or reviewed test data for selected risk-significant SSCs to assess whether tests satisfied TS, UFSAR, Technical Requirements Manual, and Entergy procedure requirements. The inspectors verified that: test acceptance criteria were clear, demonstrated operational readiness, and were consistent with design basis documentation; test instrumentation had accurate calibration, and appropriate range and accuracy for the application; and tests were performed as written, with applicable prerequisites satisfied. Following the tests, the inspectors verified that the equipment was capable of performing the required safety functions. The inspectors evaluated the surveillance tests against the requirements in TS. The documents reviewed during this inspection are listed in the Attachment. The following surveillance tests were reviewed and represented five inspection samples:

- 2-PT-Q026F, 26 Service Water Pump In-Service Test;
- 2-PT-Q030B, 22 Component Cooling Pump In-Service Test;
- 0-SOP-Leakrate-001, RCS Leakrate Surveillance, Evaluation and Leak Identification;
- 2-PT-3Y9, Service Water Flow Line 408 In-Service Inspection; and
- 2-PT-Q027B, 23 Auxiliary Feed Water Pump In-Service Test.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

1EP2 Alert and Notification System (ANS) Evaluation (71114.02 - 1 sample)

a. Inspection Scope

The inspectors conducted a review of the station's new ANS to assess the maintenance, testing, and performance of the system. During this inspection, the inspectors accompanied an on-site team from the Federal Emergency Management Agency (FEMA) to assess the new ANS for final acceptance by FEMA. The inspectors interviewed Entergy's staff responsible for implementation of ANS modifications, testing, and maintenance. The inspectors reviewed CRs pertaining to the ANS for causes, trends, and corrective actions. The inspectors further discussed with Entergy personnel the ANS siren system improvements made in response to FEMA concerns and the system performance from August 2008 through July 2009. The inspectors reviewed Entergy's procedures and the latest revision of the ANS design report to ensure compliance with commitments made for system maintenance and testing. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 2. The inspectors used planning standard 10 CFR 50.47(b)(5) and the related requirements of 10 CFR 50, Appendix E as reference criteria.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)

a. Inspection Scope

The inspectors evaluated an emergency classification conducted on August 23, 2009, during a licensed-operator requalification simulator training evaluation. The inspectors observed an operating crew in the simulator respond to various, simulated initiating events that ultimately resulted in the simulated implementation of the site's emergency plan. In particular, the inspectors observed the training event to verify the adequacy and accuracy of the emergency classification of an 'Alert.' While other simulated classifications were declared, the inspectors verified that the initial classification was appropriately credited as an opportunity toward NRC performance indicator data. The inspectors observed the management evaluator and training critique following termination of the scenarios, and verified that performance deficiencies were appropriately identified and addressed within the critique and the corrective action program. Also, the inspectors reviewed the summary performance report for the evaluation and verified that appropriate attributes of drill

performance including deficiencies were captured. This evaluation constituted one inspection sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 - 3 samples)

a. Inspection Scope

The inspectors reviewed performance indicator data for the cornerstones listed below and used Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, to verify individual performance indicator accuracy and completeness. The documents reviewed during this inspection are listed in the Attachment.

Mitigating Systems Cornerstone

- Mitigating Systems Performance Index – High Pressure Injection System (July 2008 to June 2009)
- Mitigating Systems Performance Index – Residual Heat Removal System (July 2008 to June 2009)

Barrier Integrity Cornerstone

- Reactor Coolant System (RCS) Activity (July 2008 to June 2009)

The inspectors reviewed data and plant records from July 2008 to June 2009. The records included performance indicator data summary reports, licensee event reports, operator narrative logs, the licensee corrective action program, and maintenance rule records. The inspectors verified the accuracy of the number of critical hours reported, and interviewed the system engineers and operators responsible for data collection and evaluation.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152 - 1 sample)

.1 Resident Inspector Daily Review of Condition Reports

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and to identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of all items entered into Entergy's corrective action program. The review was accomplished by accessing Entergy's computerized

database for condition reports (CRs) and attending condition report group screening meetings.

In accordance with the baseline inspection modules, the inspectors selected corrective action program items across the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for further follow-up and review. The inspectors assessed Entergy personnel's threshold for problem identification, adequacy of the causal analysis, extent of condition reviews, operability determinations, and timeliness of the associated corrective actions.

b. Findings

No findings of significance were identified.

.2 Annual Sample: Multiple Static Inverter Transfers to the Alternate Source

a. Inspection Scope

The inspectors reviewed Entergy staff's evaluations and corrective actions in response to CRs generated as a result of source transfers associated with the 118-Volt electrical distribution system static inverters. The inspectors also reviewed Entergy's maintenance procedures, technical manuals, and design documents. In addition, the inspectors interviewed applicable members of Entergy's staff. The focus of this inspection was to verify the evaluations and corrective actions were appropriate to the circumstances.

b. Findings and Observations

No findings of significance were identified.

The inspectors reviewed CRs related to inverters transferring to alternate sources associated with 22, 23, and 24 static inverters over the previous twelve months. Entergy personnel determined that 23 and 24 static inverters switched sources per design on November 24, 2008, and February 8, 2009 respectively, due to component failures downstream of the inverters that were subsequently replaced. However, Entergy personnel were unable to identify a definitive cause for 22 static inverter switching sources on February 13, 16, and 18, 2009.

Entergy personnel performed troubleshooting on the 22 static inverter and determined that the cause of the inverter transferring to its alternate source was due to one of two external events. Specifically, Entergy personnel determined an overcurrent condition or frequency transient downstream of the inverter was the likely cause of the transfers. Entergy staff performed a review of work conducted during the time of the transfers and determined no maintenance was performed on or near the 22 inverter or 22 instrument buses. Entergy personnel noted in a 2009 CR that an unimplemented modification, ER IP2-02-48708, was to remove the frequency transfer feature from the inverters due to the vulnerability of the frequency meter resulting in undesired transfers to the alternate source. The inspectors noted that the same modification was referenced in a condition report as a potential fix for an unexplained transfer of the same static inverter in 2007. Entergy staff plans to implement the modification if the inverter performance declines such that the transfers occur at an unacceptable frequency.

The inspectors concluded the long periods of uninterrupted operation both before and after the February 2009 transfers did not support a reasonable conclusion that a design deficiency associated with the static inverter frequency transfer function was the cause of the transfers. A performance deficiency did not exist because the nuisance transfers were not reasonably within the licensee's ability to foresee and correct. Specifically, the inspectors concluded that it was not reasonable to determine that the frequency transfer function was the likely cause of the three transfers that occurred within a one week period in February 2009. The inspectors determined that Entergy staff's conclusion that an external event caused the 22 inverter to switch on multiple occasions was reasonable. In addition, no maintenance has been performed on the 22 inverter since the last switch occurred on February 18, 2009, and there have been no additional source transfers.

4OA3 Event Follow-Up (71153 – 1 sample)

.1 (Closed) Licensee Event Report (LER) 2009-002-00, Manual Reactor Trip Due to Decreasing Steam Generator Levels Caused by a Loss of Main Feedwater Pump 21 and Failure of the Main Turbine to Automatically Runback

On April 3, 2009, control room operators initiated a manual reactor trip because they observed decreasing steam generator (SG) water levels following the unexpected shutdown of the 21 main boiler feedwater pump (MBFP). Entergy staff determined the cause of the 21 MBFP shutdown was due to a broken fitting in the pump's hydraulic turbine auto-stop control system. Additionally, the main turbine failed to automatically runback as expected when the 21 MBFP shutdown. Entergy personnel performed troubleshooting on each of the individual turbine runback components and tested the integrated circuitry but could not reproduce the fault. Entergy staff's evaluation of the event identified the failed tubing was installed incorrectly during a modification performed in 1986 such that the tubing was susceptible to high-cycle fatigue. Entergy technicians repaired the broken fitting, sent the broken fitting out for metallurgical analysis, and performed extent-of-condition evaluations of the 22, 31, and 32 MBFPs. Entergy technicians replaced identical tubing in the 22 MBFP and determined that the 31 and 32 MBFPs did not have the same configuration issue. Although Entergy personnel did not identify degraded components in the main turbine runback circuitry, station engineers identified components most likely to fail based on a single point vulnerability analysis. As a result, station engineers are evaluating turbine runback system design changes to minimize the single point vulnerabilities of existing components.

The inspectors reviewed the LER, applicable CRs, and corrective actions associated with the apparent cause evaluation. The inspectors concluded that the corrective actions were adequate to address the identified causal factors. A finding of very low safety significance (Green) associated with the MBFP's inadequate design change implementation was documented in NRC Inspection Report 05000247/2009003. The inspectors did not identify any additional findings of significance. This LER is closed.

4OA5 Other Activities

Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that these activities were consistent with Entergy security

procedures and applicable regulatory requirements. Although these observations did not constitute additional inspection samples, the inspections were considered an integral part of the normal, resident inspector plant status reviews during implementation of the baseline inspection program.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

On October 8, 2009, the inspectors presented the inspection results to Mr. Joseph Pollock and other Entergy managers and staff, who acknowledged the inspection results. Entergy staff identified documents which were to be considered proprietary and handled as such.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

J. Pollock, Site Vice President
A. Vitale, General Manager, Plant Operations
K. Davison, Assistant General Manager, Plant Operations
P. Conroy, Director of Nuclear Safety Assurance
B. Sullivan, Emergency Planning Manager
A. Williams, Site Operations Manager
S. Verrochi, System Engineering Manager
T. Orlando, Director, Engineering
R. Walpole, Licensing Manager
T. Cole, Project Manager
T. Garvey, Senior Project Manager, Emergency Planning
A. Grosjean, Senior Project Manager, Emergency Planning

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000247/2009-002-00	LER	Manual Reactor Trip Due to Decreasing Steam Generator Levels Caused by a Loss of Main Feedwater Pump 21 and Failure of the Main Turbine to Automatically Runback (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
IP-SMM-OP-104, Offsite Power Continuous Monitoring and Notification, Rev. 8
OAP-048, Seasonal Weather Preparation, Rev. 4
OAP-008, Severe Weather Preparations, Rev. 5
2-AOP-FLOOD-1, Flooding

Condition Reports

IP2-2009-00253	IP2-2008-05472	IP2-2009-02487	IP2-2009-01589
IP3-2009-02358	IP3-2009-02487	IP2-2007-02319	IP2-2007-03855
IP2-2008-00286	IP2-2008-00530	IP2-2008-01640	IP2-2008-01699
IP2-2008-04230	IP2-2008-04812	IP2-2008-05372	

Section 1R04: Equipment Alignment

Procedures
2-COL-4.1.1, Component Cooling System, Rev. 22
2-SOP-4.1.2, Component Cooling System Operation, Rev. 34
2-SOP-24.1, Service Water System Operation, Rev. 56
2-COL-10.2.1, Containment Spray System, Rev. 19
2-SOP-3.1, Charging, Seal Water, and Letdown Control, Rev. 63
2-COL-3.1, Chemical and Volume Control System, Rev. 39
2-COL-10.1.1, Safety Injection System, Rev. 32
2-SOP-24.1, Service Water System Operation, Rev. 56
2-PT-M103, Auxiliary Feedwater System Monthly Alignment Verification, Rev. 2
2-PT-Q028B, 22 Residual Heat Removal Pump, Rev. 18
2-COL-4.2.1, Residual Heat Removal System, Rev. 26

Calculations
FMX-00227, Pipe Flow Calculation of Service Water System, Rev. 2
MMS-00039-00, IP2 Verification of the Design of the Existing 10 Atmospheric Vent at the SW Outlet of CCWHX, Rev. 0

Condition Reports

IP2-2008-00778	IP2-2008-00589	IP2-2008-00813	IP2-2008-01213
IP2-2008-02852	IP2-2009-00274	IP2-2009-00387	IP2-2009-00428
IP2-2009-01792	IP2-2004-01716	IP2-2009-03020	

Drawings
IP2-SOD-005, ECCS System, Rev. 5
A251783, Flow Diagram Auxiliary Coolant System Residual Heat Removal Pumps

Miscellaneous
IP2-SW-DBD, Service Water System Design Basis Document, Rev. 1

Section 1R05: Fire Protection

Procedures
Fire Protection Program Plan, Rev. 9
EN-DC-161, Control of Combustibles, Rev. 2
Indian Point Pre-Fire Plans Unit 2 – Nuclear

Condition Reports

IP2-2009-01793	IP2-2009-01987	IP2-2009-01994	IP2-2009-02699
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Miscellaneous
IP2-RPT-03-00015, IP2 Fire Hazards Analysis
PGI-00433, Combustible Loading Calculation, Rev. 0

Section 1R06: Flood Protection Measures

Procedures
2-AOP-Flood-1, Flooding, Rev. 6

Condition Reports
IP2-2009-00729

Miscellaneous
Individual Plant Examination of External Events for Indian Point Unit 2
IP-RPT-04-00230, Indian Point Unit 2 Probabilistic Safety Assessment, Rev. 1
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IP2-AFW-DBD, Auxiliary Feedwater System, Rev. 1
Individual Plant Examination of External Events for Indian Point Unit No. 2, December 1995
Letter – Susceptibility of Safety-Related Systems to Flooding from Failure of Non-Category I Systems for Indian Point Nuclear Power Station Unit 2, 12/18/80

Section 1R07: Heat Sink Performance

Procedures
2-HTX-004-CCW, Component Cooling Water Heat Exchanger Maintenance
SEP-SW-001, NRC Generic Letter 89-13 Service Water Program

Work Orders
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Miscellaneous
Preliminary Report of Eddy Current Testing dated 05/28/09

Other
EN-DC-316, Heat Exchanger Program
EN-DC-181, Thermal Performance

Section 1R11: Licensed Operator Requalification Program

Procedures
2-E-0, Reactor Trip or Safety Injection
2-E-2, Faulted Steam Generator
2-E-3, Steam Generator Tube Rupture
2-AOP-INST-1, Instrument/Controller Failures
2-AOP-SG-1, Steam Generator Tube Leak
2-AOP-RSD-1, Rapid Shutdown

Miscellaneous
Lesson Plan LRQ-SES-35

Section 1R12: Maintenance Effectiveness

Procedures
EN-DC-151, PSA Maintenance and Update, Rev. 1,
EN-NE-G-008, Probabilistic Safety Assessment Success Criteria, Rev. 0
2-IC-PC-I-E, Static Inverter Maintenance Procedure, Rev. 5

Condition Reports
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Work Orders
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00183179

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IP2-DBD-207, 118V AC Electrical System Design Basis Document, Rev. 2
IP-RPT-04-00230, Indian Point Unit 2 Probabilistic Safety Assessment, Rev. 1

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures
IP-SMM-WM-101, On-Line Risk Assessment

Miscellaneous
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Section 1R15: Operability Evaluations

Procedures
EN-OP-104, Operability Determinations

Condition Reports
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Nuclear HVAC Design Basis Document
480 Volt Electrical System Design Basis Document
ODMI Implementation Action Plan – Unit 2 SST-6 Hot Spot Indicator CT Clamp Vibration

Section 1R19: Post-Maintenance Testing

Procedures
2-PC-R58, 480 Volt Undervoltage Relay Calibration
0-VLV-462-SWS, Multiplex Crispin Combination Valve Preventive Maintenance
OAP-24, Operations Testing, Rev. 3
0-TWS-401-CWS, Traveling Water Screen Preventive Maintenance Inspection, Rev. 4
EN-MA-118, Foreign Material Exclusion, Rev. 4
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2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventive Maintenance, Rev. 8

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Work Orders

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EPRI Report 1009709, Post Maintenance Testing Guide, Rev. 1

Section 1R22: Surveillance Testing

Procedures
2-PT-M108, RHR/SI/CS System Venting, Rev. 6
2-PT-Q017C, Alternate Safe Shutdown Supply Verification to 23 CCP, Rev. 11
2-PT-Q027B, 23 Auxiliary Feed Pump, Rev. 15
2-PT-Q30B, 22 Component Cooling Water Pump, Rev. 19
2-AOP-Leak-1, Sudden Increase in Reactor Coolant System Leakage, Rev. 7
0-SOP-Leakrate-001, RCS Leakrate Surveillance, Evaluation and Leak Identification, Rev. 1
2-PT-Q026F, 26 Service Water Pump, Rev. 12
2-PT-3Y9, Flow test for Underground Service Water Line 408 performed on August 8, 2009, Rev. 1
2-PT-3Y010, Flow test for Underground Service Water Line 409, Rev 2

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Regulatory Guide 1.45 Guidance on Monitoring and Responding to Reactor Coolant System Leakage, Rev. 1

Section 1EP2: Alert and Notification System (ANS) Evaluation

Procedures
IP-EP-AD30, IPEC ATI Siren System Administration, Rev. 2
IP-EP-AD31, IPEC Siren System Maintenance Administration, Rev. 0
IP-EP-AD33, IPEC Siren System Quarterly Preventative Maintenance, Rev. 2

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IPEC ANS Maintenance and Test Records, August 2008 through July 2009

Section 4OA1: Performance Indicator Verification

Procedures
EN-EP-201, Performance Indicators, Rev. 6
EN-LI-114, Performance Indicator Process, Rev. 3
NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 5
0-CY-2765, Coolant Activity Limits, Rev. 3
0-CY-3214-Equivalent, RCS2 Routine Activity
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2-CY-2380, Primary Sampling System, Rev. 4
2-CY-2320, Reactor Coolant Gas Sampling, Rev. 7
0-CY-3215, Gamma Spectroscopy System Operation with APEX, Rev. 3

Other
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Section 4OA2: Identification and Resolution of Problems

Procedures
EN-DC-114, Project Management, Rev. 9
EN-HU-104, Engineering Task Risk and Rigor, Rev. 2
EN-HU-101, Human Performance Program, Rev. 6
EN-HU-102, Human Performance Tools, Rev. 5
EN-HU-105, Human Performance – Managed Defenses, Rev. 6
OAP-017, Plant Surveillance and Operator Rounds
2-IC-PC-I-E, Static Inverter Maintenance Procedure, Rev. 5
2-AOP-IB-1, Loss of Power to an Instrument Bus, Rev. 7

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VM-1100, Solid State Controls Inverter Tech Manual
EI-4086, Inverter Specification

Section 4OA3: Event Follow-up

Procedures
2-AOP-FW-1, Loss of Main Feedwater, Rev. 11
2-E-0, Reactor Trip or Safety Injection, Rev. 0
2-POP-3.2, Plant Recovery from Trip, Hot Standby, Rev. 36
EN-DC-115, Engineering Change Process
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EN-MA-126, Control of Supplemental Personnel
SAO-405, Engineering Change Process, Rev. 15
DE-S-12.621, Engineering Standard
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DE-S-12.621, Engineering Design and Programmatic Review, Rev. 0

Condition Reports
IP2-2009-01179

Work Orders
189430

LIST OF ACRONYMS

ABFP	Auxiliary Boiler Feed Pump
ADAMS	Agency-wide Document and Management System
ANS	Alert and Notification System
CFR	Code of Federal Regulations
CR	Condition Report
DBD	Design Basis Document
ENTERGY	Entergy Nuclear Northeast
EP	Emergency Preparedness
FEMA	Federal Emergency Management Agency
IMC	Inspection Manual Chapter
IPEC	Indian Point Energy Center
IR	Inspection Report
LER	Licensee Event Report
MBFP	Main Boiler Feed Pump
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records System
PI	Performance Indicator
RCS	Reactor Coolant System
RHR	Residual Heat Removal
SG	Steam Generator
SSC	Structures, Systems, and Components
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
WO	Work Order