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

February 8, 2012

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 3 – NRC INTEGRATED INSPECTION REPORT 05000286/2011005

Dear Mr. Ventosa:

On December 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 3. The enclosed integrated inspection report documents the inspection results, which were discussed on January 19, 2012, 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 this inspection, no findings were identified.

In accordance with 10 CFR 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 component of the NRC's Document System (ADAMS). ADAMS is accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

Mel Gray

Mel Gray, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket No. 50-286
License No. DPR-26

Enclosure: Inspection Report 05000286/2011005
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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/RA/
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-286
License No.:	DPR-26
Report No.:	05000286/2011005
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	Indian Point Nuclear Generating Unit 3
Location:	450 Broadway, GSB Buchanan, NY 10511-0249
Dates:	October 1, 2011 through December 31, 2011
Inspectors:	P. Cataldo, Senior Resident Inspector – Indian Point 3 M. Halter, Resident Inspector – Indian Point 3 T. Fish, Senior Operations Engineer – Region 1 J. Furia, Senior Health Physicist – Region 1 E. Gray, Senior Reactor Inspector – Region 1 J. Nicholson, Health Physicist – Region 1 J. Noggle, Senior Health Physicist – Region 1
Approved By:	Mel Gray, Chief Reactor Projects Branch 2 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000286/2011005; 10/1/11-12/31/11; Indian Point Nuclear Generating (Indian Point) Unit 3; Resident Integrated Inspection Report.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. No findings were identified. The NRC's program for overseeing the 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 3 operated at or near 100 percent power for the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 1 sample)

Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of activities to prepare Indian Point for the onset of seasonal low temperatures. The review focused on the auxiliary boiler feed pump building, the intake structure, the fire protection water system, and the control building. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), technical specifications, control room logs, and the corrective action program to determine what temperatures or other seasonal weather could challenge these systems, and to ensure Entergy personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including Entergy's seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during cold weather conditions. Documents reviewed for each section of the inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q – 3 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 33 auxiliary boiler feed pump returned to service on October 27, 2011
- 31 and 33 service water pumps (SWPs) during 32 SWP outage on December 12, 2011
- 32 residual heat removal (RHR) returned to service following testing on December 16, 2011

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, technical specifications,

work orders, condition reports, and ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance and their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

.2 Full System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

On November 3, 2011, the inspectors performed a complete system walkdown of accessible portions of the Unit 3 auxiliary feedwater system to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, surveillance tests, drawings, equipment line-up check-off lists, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors performed field walkdowns of accessible portions of the system to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related condition reports and work orders to ensure Entergy appropriately evaluated and resolved any deficiencies.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Resident Inspector Quarterly Walkdowns (71111.05Q - 4 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Entergy staff controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Emergency Diesel Generator (EDG) service water (SW) valve room fire zone (FZ)-36A on October 5, 2011
- Charging pump #31 (FZ-5) on October 27, 2011
- Charging pump #32 (FZ-6) on October 27, 2011
- Charging pump #33 (FZ-7) on October 27, 2011

b. Findings

No findings were identified.

.2 Fire Protection – Drill Observation (71111.05A - 1 sample)

a. Inspection Scope

The inspectors observed and evaluated a fire brigade drill scenario conducted on December 20, 2011. The drill scenario involved a simulated fire on the 15' elevation of the turbine building, which also included mitigation of a hydrazine-fueled fire. The inspectors evaluated the readiness of the plant fire brigade to fight fires and included a verification that Entergy personnel identified deficiencies, openly discussed them in a self-critical manner at the debrief, and took appropriate corrective actions, as required. The inspectors evaluated specific attributes as follows:

- Proper wearing of turnout gear and self-contained breathing apparatus
- Proper use and layout of fire hoses
- Employment of appropriate fire-fighting techniques
- Sufficient fire-fighting equipment brought to the scene
- Effectiveness of command and control
- Propagation of the fire into other plant areas
- Smoke removal operations
- Utilization of pre-planned strategies
- Adherence to the pre-planned drill scenario
- Drill objectives met

The inspectors also evaluated the fire brigade's actions to determine whether these actions were in accordance with Entergy's fire-fighting strategies.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Quarterly Review of Licensed Operator Requalification Testing and Training (71111.11Q - 1 sample)

a. Inspection Scope

The inspectors observed licensed operator simulator training on October 20, 2011, which included implementation of 3-ONOP-TG-3, Rapid Shutdown. The inspectors evaluated operator performance during the simulated event and verified completion of

risk significant operator actions, including the use of abnormal operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the technical specification action statements entered by the control room supervisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Licensed Operator Requalification (71111.11B - 1 sample)

a. Inspection Scope

The following inspection activities were performed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program," Appendix A, "Checklist for Evaluating Facility Testing Material" and Appendix B, "Suggested Interview Topics."

A review was conducted of recent operating history documentation found in inspection reports, licensee event reports, Entergy's corrective action program, and the most recent NRC plant issues matrix. The inspectors also reviewed specific events from Entergy's corrective action program which indicated possible training deficiencies to verify that they had been appropriately addressed. These reviews did not identify any operational events that were indicative of possible training deficiencies.

The operating tests for the week of September 12–16, 2011, were reviewed for quality and performance.

On December 12, 2011, the results of the written exam and annual operating tests for year 2011 were reviewed to determine if pass/fail rates were consistent with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

The review verified the following:

- Crew pass rate was greater than 80 percent. (Pass rate was 100 percent.)
- Individual pass rate on the dynamic simulator test was greater than 80 percent. (Pass rate was 96 percent.)
- Individual pass rate on the written exam was greater than 80 percent. (Pass rate was 100 percent.)
- Individual pass rate on the job performance measures of the operating exam was greater than 80 percent. (Pass rate was 100 percent.)
- More than 75 percent of the individuals passed all portions of the exam. (96 percent of the individuals passed all portions of the examination.)

Observations were made of the dynamic simulator exams and job performance measures (JPM) administered during the week of September 12–16, 2011. These observations included facility evaluations of crew and individual performance during the dynamic simulator exams and individual performance of five JPMs.

The remediation plan for an individual's written exam failure was reviewed to assess the effectiveness of the remedial training.

Operators, instructors, and training/operation's management were interviewed for feedback on their training program and the quality of training received.

Simulator performance and fidelity were reviewed for conformance to the reference plant control room.

A sample of records for requalification training attendance, program feedback, reporting, and medical examinations were reviewed for compliance with license conditions, including NRC regulations.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q - 3 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, corrective action program documents, maintenance work orders, and maintenance rule basis documents to ensure that Entergy was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a) (2) performance criteria established by Entergy staff was reasonable. As applicable, for SSCs classified as (a) (1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a) (2). Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred, within and across maintenance rule system boundaries.

- DS-416 breaker failure-to-close on August 19, 2011
- 138 kV primary pilot wire circuit issues; ground mat testing on October 6-7, 2011
- (a)(3) periodic evaluation on November 21, 2011

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 3 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Entergy personnel performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Entergy personnel performed risk assessments as required by 10 CFR 50.65(a) (4) and that the assessments were accurate and complete. When Entergy staff performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Elevated risk during 3-PT-M13A1 and PCV-1276 maintenance on October 11, 2011
- Elevated risk during SI-MOV - 889A, TCV-130, and 34 isophase fan maintenance, 3-PC-R01B, and control rods in manual on October 18, 2011
- Elevated risk during 3-PT-A29E, 3-PC-R74A, 3-PC-OL3B28, 34 SWP maintenance, and control rods in manual on October 19, 2011

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 - 3 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- 32 SW pump zurn strainer on October 1, 2011
- 34 SW pump delta-P out of tolerance on October 19, 2011
- Nitrogen pressure regulator, PCV-1276, for the nitrogen backup to air operated valves in the auxiliary feedwater system on November 17, 2011

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to Entergy's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors

determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - 5 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- AFW Nitrogen backup system, RV-1284 replacement, on October 13, 2011
- 32 spent fuel pit pump mechanical seal replacement, returned on October 17, 2011
- RC-AOV-519 on November 1, 2011
- MS-PCV-1131 on November 8, 2011
- 32 charging pump suction valve and seal replacement, returned on November 10, 2011

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - 4 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied technical specifications, the UFSAR, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions.

The inspectors reviewed the following surveillance tests:

- 3-PT-Q027, Stroke Test of Containment Isolation Valves PCV-1234, -1235, -1236, and -1237, on October 1, 2011
- 31 EDG overspeed test on October 4, 2011
- 3-PT-Q87C, Reactor Coolant Temperature Channel 41 Functional Test, on October 13, 2011
- 3-PT-Q92D, 34 Service Water Pump In-Service Test, on October 19 – 20, 2011

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational/Public Radiation Safety

2RS2 Occupational As Low As is Reasonably Achievable Planning and Controls (71124.02-1 sample)

a. Inspection Scope

Radiological Work Planning

Based on radiation work permit outage work activity collective exposure results from the Unit 3 Spring 2011 refueling outage, the inspectors selected for review those work activities that resulted in a dose of five person-rem or greater. This review included the basis of the exposure estimates with reference to historical performance metrics, and exposure mitigation requirements planned for these outage tasks.

With respect to the outage work activity samples, the inspectors compared the actual exposure results with the estimated exposure established in Entergy's As Low As is Reasonably Achievable (ALARA) plans for these work activities. The inspectors also compared the person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the work activity person-hour actual results, to evaluate the performance results. The inspectors determined the reasons (e.g., failure to adequately plan the activity, failure to provide sufficient work controls) for any inconsistencies between intended and actual work activity doses. The inspectors also determined if any identified exposure overrun causes were identified and entered into Entergy's corrective action program.

Verification of Dose Estimates and Exposure Tracking Systems

The Unit 3 Spring refueling outage ALARA work packages that resulted in greater than five person-rem were reviewed to include the assumptions and basis (including dose rate and man-hour estimates) for their collective exposure estimates. Applicable procedures were reviewed to determine the methodology for estimating exposures for specific work activities and determining the intended dose outcome.

The inspectors verified for the selected work activities that Entergy personnel established measures to track, trend, and if necessary reduce, occupational doses for ongoing work activities and that criteria were established to prompt additional reviews and/or additional ALARA planning and controls.

The inspectors evaluated Entergy's method of adjusting exposure estimates when unexpected changes in scope or emergent work were encountered. The inspectors determined if adjustments to exposure estimates (intended dose) were based on sound radiation protection and ALARA principles or if they were only adjusted to account for inadequate work control.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08 - 1 sample)

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the updated final safety analysis report (UFSAR), the Process Control Program (PCP), and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of any quality assurance (QA) audits in this area since the last inspection to gain insights into Entergy's performance and inform the "smart sampling" inspection planning.

The inspectors selected areas where containers of radioactive waste were stored, and verified that the containers were labeled in accordance with Title 10 of the Code of Federal Regulations (10 CFR) 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements," as appropriate.

The inspectors verified that radioactive materials storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors verified that they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material not in Storage," as appropriate.

The inspectors verified that Entergy staff established a process for monitoring the impact of long-term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements. The inspectors selected containers of stored radioactive materials, and verified that there were no signs of swelling, leakage, and deformation.

The inspectors selected liquid and solid radioactive waste processing systems, and walked down accessible portions of systems to verify and assess that the current system configuration and operation agreed with the descriptions in the UFSAR, offsite dose calculation manual and PCP.

The inspectors selected radioactive waste processing equipment that was not operational and/or was abandoned in place, and verified that Entergy staff had established administrative and/or physical controls to ensure that the equipment would not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors verified that Entergy staff reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors reviewed the adequacy of any changes made to the radioactive waste processing systems since the last inspection. The inspectors verified that changes from what is described in the UFSAR were reviewed and documented in accordance with 10 CFR 50.59, as appropriate.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers. The inspectors verified that the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the PCP, and provided representative samples of the waste product for the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

For those systems that provide tank recirculation, the inspectors verified that the tank recirculation procedure provided for sufficient mixing.

The inspectors verified that Entergy's PCP correctly described the current methods and procedures for dewatering and waste.

The inspectors selected radioactive waste streams, and verified that Entergy's radiochemical sample analysis results were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors verified that Entergy's use of scaling factors and calculations, to account for difficult-to-measure radionuclides, was technically sound and based on current 10 CFR Part 61 analysis.

For the waste streams selected above, the inspectors verified that changes to plant operational parameters were taken into account to (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update, and (2) verify that waste shipments continued to meet the requirements of 10 CFR Part 61.

The inspectors verified that Entergy personnel established and maintained an adequate QA program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

The inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation and receipt activities. The inspectors determined that the shippers were knowledgeable of the shipping regulations and that shipping personnel demonstrated adequate skills to accomplish the package

preparation requirements for public transport with respect to Entergy's response to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," dated August 10, 1979, and 49 CFR Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, Training Requirements, and Security Plans," Subpart H, "Training." The inspectors verified that Entergy's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

The inspectors selected non-excepted package shipment records and verified that the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and UN number. The inspectors verified that the shipment placarding was consistent with the information in the shipping documentation.

The inspectors verified that problems associated with radioactive waste processing, handling, storage, and transportation were being identified by Entergy staff at an appropriate threshold, were properly characterized, and were properly addressed for resolution in the Entergy corrective action program. The inspectors verified the appropriateness of the corrective actions for a selected sample of problems documented by Entergy staff that involved radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed the results of selected audits performed since the last inspection of this program and evaluated the adequacy of Entergy's corrective actions for issues identified during those audits.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Reactor Coolant System (RCS) Leak Rate (1 sample)

a. Inspection Scope

The inspectors reviewed Entergy's submittal for the RCS leak rate performance indicators for the period of October 1, 2010, through September 30, 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed control room logs of daily measurements for RCS leakage and compared that information to the data reported by the performance indicator.

b. Inspection Findings

No findings were identified.

.2 Occupational Exposure Control Effectiveness (1 sample)

a. Inspection Scope

The inspectors reviewed implementation of Entergy's Occupational Exposure Control Effectiveness Performance Indicator Program. Specifically, the inspectors reviewed Condition Reports (CRs) and radiological controlled area dosimeter exit logs for the past four calendar quarters (through 3rd quarter 2011). These records were reviewed for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures against the criteria specified in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 6, to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators.

b. Inspection Findings

No findings were identified.

.3 Radioactive Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (1 sample)

a. Inspection Scope

The inspectors reviewed a listing of relevant effluent release reports for the past four calendar quarters (through 3rd quarter 2011), for issues related to the public radiation safety performance indicator, which measures radiological effluent release occurrences per site that exceed 1.5 mrem/quarter whole body or 5.0 mrem/quarter organ dose for liquid effluents; 5.0 mrads/quarter gamma air dose, 10 mrad/quarter beta air dose, and 7.5 mrads/quarter for organ dose for gaseous effluents. The review was against applicable criteria specified in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 6. The purpose of the review was to verify that occurrences that met the NEI criteria were recognized and identified as Performance Indicator occurrences.

The inspectors reviewed the following documents to ensure Entergy met all requirements of the performance indicator:

- Monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases
- Quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases
- Dose assessment procedures

b. Inspection Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 - 2 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Entergy personnel entered issues into the corrective action program at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the corrective action program and periodically attended condition report screening meetings.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by Inspection Procedure 71152, "Problem Identification and Resolution," to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely-related issues that may have been documented by Entergy outside of the corrective action program, such as trend reports, performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or corrective action program backlogs. The inspectors also reviewed Entergy's corrective action program database for the third and fourth quarters of 2011, to assess condition reports written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily condition report review (Section 4OA2.1). The inspectors reviewed Entergy's quarterly trend report for the second quarter of 2011, as well as inputs for the third quarter trend report for the Chemistry and Radiation Protection departments, conducted under EN-LI-121, Entergy Trending Process, to verify that Entergy personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings were identified.

The inspectors reviewed a sample of departmental inputs into the third quarter trend report, which included the Chemistry and Radiation Protection departments. This review included a sample of issues and events that occurred over the course of the past two quarters to objectively determine whether issues were appropriately considered or ruled as emerging or adverse trends, and in some cases, verified the appropriate disposition of resolved trends. The inspectors verified that these issues were addressed within the scope of the corrective action program, or through department review and documentation in the quarterly trend report for overall assessment.

While the inspectors did not identify any adverse trends that were not already identified within Entergy's CAP and the quarterly trend reports, the inspectors evaluated the status of a trend identified during a previous inspection. In particular, the inspectors evaluated Entergy's progress in resolution of an NRC inspection finding documented in CR-IP2-2011-04541associated with corrosion identified on Unit 3 SW piping characterized in the CAP as significance level "D." According to EN-LI-102, "Corrective Action Process", significance level "D" indicates that the condition identified (1) has been documented and corrected, and no further corrective actions are warranted, or (2) is identified as a straightforward condition that can be closed to a work order or another condition report, or (3) is below the level of an adverse condition as defined in the CAP. Subsequently, the inspectors noted that Entergy identified a large population of open Level "D" work orders (Priority 4 or greater) associated with safety-related equipment. The inspectors concluded that Entergy personnel made substantial progress in determining the appropriate priority of work orders associated with safety-related equipment to ensure a more timely resolution.

.3 Annual Sample: Review of the Operator Workaround Program

a. Inspection Scope

The inspectors reviewed the cumulative effects of the existing operator workarounds, operator burdens, existing operator aids and disabled alarms, and open main control room deficiencies to identify any effect on emergency operating procedure operator actions, and any impact on possible initiating events and mitigating systems. The inspectors evaluated whether station personnel had identified, assessed, and reviewed operator workarounds as specified in Entergy procedure OAP-45, "Operator Burden Program."

The inspectors reviewed Entergy's process to identify, prioritize and resolve main control room distractions to minimize operator burdens. The inspectors reviewed the system used to track these operator workarounds and recent Entergy self assessments of the program. The inspectors also toured the control room and discussed the current operator workarounds with the operators to ensure the items were being addressed on a schedule consistent with their relative safety significance.

b. Findings and Observations

No findings were identified.

The inspectors determined that the issues reviewed did not adversely affect the capability of the operators to implement abnormal or emergency operating procedures. The inspectors also verified that Entergy entered operator workarounds and burdens into the corrective action program at an appropriate threshold and planned or implemented corrective actions commensurate with their safety significance.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 1 sample)

(Closed) Licensee Event Report (LER) 05000286/2011-003-00: Technical Specification Required Shutdown and a Safety System Functional Failure for a Leaking Service Water Pipe Causing Flooding in the Service Water Valve Pit Preventing Access for Accident Mitigation

On February 22, 2011, flooding occurred in a SW valve pit that contained conventional essential and non-essential SW header isolation valves. The flooding was caused by corrosion from a leaking 10-inch SW pipe, and required a plant shutdown in accordance with Technical Specification 3.0.3, when Entergy operators determined valves in the pit, which at the time were inaccessible from the flooding, were required to mitigate design basis accidents. The inspectors reviewed the condition and associated root cause evaluation under CR-IP3-2011-00680, and noted that the cause was related to an inadequate coating repair performed on this piping section in 1992. The inspectors concluded that while a missed opportunity from 2006 was identified during the root cause evaluation, it was not considered reasonably within Entergy's ability to foresee and correct, based on the circumstances. Entergy personnel installed a temporary repair and subsequently replaced the degraded section of piping during the Spring 2011 refueling outage. In addition, Entergy staff implemented extent-of-condition inspections on both units, revised the applicable portions of Entergy's SW program as it relates to inspection, maintenance and repair of SW piping. The event was previously assessed for technical specification compliance, risk significance, and other attributes under baseline Inspection Procedure 71153, as well as the performance indicator process and documented in NRC Inspection Report No. 05000286/2011002. No new issues were revealed by the LER. This LER was closed during an onsite review.

4OA5 Other Activities

1. On-Site Fabrication of Components for an Independent Spent Fuel Storage Installation (ISFSI) (60853)

a. Inspection Scope

In 2010, the Unit 3 fuel storage building (FSB) crane was upgraded to single failure proof in accordance with criteria in NUREG-0554. The Unit 3 FSB crane would be used as part of the process to transfer spent fuel from the Unit 3 spent fuel pool (SFP) to the Unit 2 SFP for placement into dry storage containers. Entergy previously submitted a license amendment request to the NRC to allow the transfer of spent fuel from the Unit 3 SFP to the Unit 2 SFP. That request is under review by the NRC.

During the week of November 7, 2011, the inspectors reviewed the readiness of the Unit 3 FSB crane. This included a review of the lifting sequence, operator qualification records, and condition reports. The crane factory test procedure, crane electrical calculation, FSB evaluation under revised loads, the crane seismic analysis and other crane related calculations were also reviewed. Radiological controls for the crane operator and spotter were discussed with a team of Radiation Protection personnel. The inspectors performed a walkdown of the Unit 3 FSB crane, including the crane controls. The inspectors also reviewed Entergy's Compliance Matrix for NUREG-0554 and NOG-1 that have comparisons of requirements for a single failure proof crane to the crane characteristics.

b. Findings

No findings were identified.

2. Operation of an ISFSI at Operating Plants (60855.1)

a. Inspection Scope

The inspectors verified by direct observation and independent evaluation that Entergy personnel performed loading activities at the ISFSI in a safe manner and in compliance with applicable procedures. The inspectors toured the ISFSI and reviewed radiological surveys performed during the past 12 months.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On January 19, 2012, the inspectors presented the inspection results to Mr. John Ventosa, Site Vice President, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Ventosa, Site Vice President
B. Allen, Engineering
V. Andreozzi, Systems Engineering Supervisor
N. Azevedo, Engineering Programs Manager
J. Bahr, Senior Auditor, QA
R. Burroni, Systems Engineering Manager
L. Coyle, General Manager, Plant Operations
G. Dahl, Licensing Specialist
J. DeFrancesco, Project Manager
J. Dinelli, Site Operations Manager
M. Dreis, System Engineer
L. Lubrano, System Engineer
T. McKee, Requalification Program Administrator
R. Miller, Assistant Project Manager
F. Mitchell, Health Physicist
R. Robenstein, Simulator Supervisor
J. Skonieczny, Senior Project Engineer
D. Smith, Senior RP Chemistry Specialist
S. Stevens, RP Supervisor
R. Tagliamonte, Radiation Protection Manager
M. Tesoriero, Programs and Components Engineering Manager
B. Walpole, Licensing Manager
R. Waters, Licensing
W. Wittich, Engineering

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Closed

05000286/2011-003-00	LER	Technical Specification Required Shutdown and a Safety System Functional Failure for a Leaking Service Water Pipe Causing Flooding in the Service Water Valve Pit Preventing Access for Accident Mitigation

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Completed Procedures
OAP-048, Seasonal Weather Preparation, dated November 30, 2011

Section 1R04: Equipment Alignment

Procedures
3-COL-RW-002, Service Water System, Revision 43
3-COL-FW-2, Auxiliary Feedwater System, Revision 29
3-PT-Q022, Residual Heat Removal System Valves, Revision 24
3-PT-Q134B, 32 RHR Pump Functional Test (RHR Cooling Not In Service), Revision 12

Condition Reports (CR-IP3-2011-)
05593
05594

Maintenance Orders/Work Orders
52370847

Section 1R05: Fire Protection

Procedures
Pre-Fire Plan 353, Diesel Generators 31, 32 and 33, Revision 0
Pre-Fire Plan 307, General Floor Plan – Primary Auxiliary Building, Revision 12
Pre-Fire Plan 362E, Heater Drain Pumps, Revision 5

Condition Reports (CR-IP3-)
03316
05673

Maintenance Orders/Work Order
52289482-01

Miscellaneous
IP3-ANAL-FP-02143, IP3 Fire Hazards Analysis, Revision 5
SMM-DC-901, IPEC Fire Protection Program Plan, Revision 8
Technical Requirements Manual, Section 3.7.A, Fire Protection Systems

EN-TQ-125, Fire Brigade Drills, Revision 1
EN-DC-330, Fire Protection Program, Revision 1
IP-SMM-TQ-122, Fire Protection Training Program, Revision 3
3-PT-SA13, Fire Protection System Smoke Detector Test, Revision 15

Section 1R11: Licensed Operator Requalification Program

Procedures
3-ONOP-TG-3, Rapid Shutdown, Revision 7

Condition Reports (CR-IP3-)
2010-0005
2010-02682

Miscellaneous
I3SG-LOR-ONPTG3, Rapid Shutdown, Revision 1
2011 LOR Comprehensive Written Exam Sample Plan
2011 LOR Annual Operating Exam Sample Plan
Simulator Deficiency Reports: 2010-00391, 2010-01106, and 2011-02545
IPEC Focused Assessment Report for Training Effectiveness, July 2011
IPEC Accreditation Self-Evaluation Report, December 2010

Simulator Performance Tests
Manual Rx Trip
Trip of All FW Pumps
Closure of All MSIVs
Trip of Single RCP
Steam Dump Control Failure

Section 1R12: Maintenance Effectiveness

Procedures
EN-DC-207, Maintenance Rule Periodic Assessment, Revision 2
3-SOP-EL-010, Operation of 138kV and 345kV Pilot Wire Protection, Revision 13

Condition Reports (CR-IP3-)
LO-2011-00014
2011-03997
2011-04042
2011-04824
2011-05526
2011-05488
011-05527
2011-05560

Maintenance Order/Work Order
287845-01

Drawings
9321-LL-31323, Schematic Diagram Pilot Wire And Misc. Lock-Out Relays, Revision 13

Miscellaneous
Indian Point Energy Center Maintenance Rule Basis Document for 138 kVAC Electrical System (138k), Revision 3
Indian Point Energy Center Maintenance Rule Basis Document for 345 kVAC Electrical System (345k), Revision 0
Indian Point Energy Center Program Health Report, Circuit Breakers, 3rd Quarter 2011
Indian Point Energy Center, Executive Summary – Grounding System Evaluation December 15, 2011
HCB Pilot Wire Test Report, dated August 30, 2011

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures
EN-WM-104, On Line Risk Assessment, Revision 4

Condition Reports (CR-IP3-)
2011-04651

Section 1R15: Operability Determinations and Functionality Assessments

Completed Procedures
3-PT-Q092D, 34 Service Water Pump, dated October 19, 2011
3-PT-Q092D, 34 Service Water Pump, dated October 20, 2011

Condition Reports (CR-IP3)
2011-04504
2011-04534
2011-04746
2011-04765
2011-05092
2011-05155

Maintenance Orders/Work Orders
51510589
52294522

Miscellaneous
Engineering Change 19324
Engineering Change 32102
Technical Evaluation 04-002387, Kit, Rebuild, Kit "B" Comprised of 11 Internal Parts for Cashco Regulator Valve Model 3D4-A367-F2100000A, Revision 00

Section 1R19: Post-Maintenance Testing

Procedures
0-VLV-419-AOV, Maintenance of Grinnell Air Operated Diaphragm Valves, Revision 4
3-PMP-002-SFS, Spent Fuel Pit Cooling Pump Inspection, Overhaul And/Or Repair, Revision 8
0-PMP-409-CVCS, Replacement of Fluid Cylinder Valves – Union Qx-300 Charging Pump, Revision 2
0-PMP-413, Inspection/Replacement of Charging Pump Fluid Cylinder Stuffing Box Seals, Revision 3

Completed Procedures
3-PT-Q032, RC-AOV-519, 552, 548, & 549 IST, dated October 30, 2011
3-PT-Q032, RC-AOV-519, 552, 548, & 549 IST, dated November 1, 2011
0-PFM-110, Relief Valve Bench Test, Revision 3, dated October 17, 2011
3-PT-Q062B, 32 Charging Pump Operability Test, Revision 11, dated November 11, 2011
3-PT-Q092D, 34 Service Water Pump, Revision 15, dated October 20, 2011

Condition Reports (CR-IP3-2011-)

04901	04766
05049	05674
04651	05557
04765	

Maintenance Orders/Work Orders

00295234	125711-01
00143705	296128-01/02
292996-04	52294522-01

Miscellaneous
IP3-DBD-303, Indian Point Unit 3 Design Basis Document for Auxiliary Feedwater System, Revision 4

Section 1R22: Surveillance Testing

Completed Procedures
3-PT-2Y001A, 31 Diesel Generator Overspeed Trip Test, dated October 4, 2011
3-PT-Q027, CNMT Isolation Valves PCV-1234, 1235, 1236, and 1237 Stroke Test, dated October 2, 2011
3-PT-Q87C, Channel Functional Test of Reactor Coolant Temperature Channel 431, dated October 13, 2011
3-PT-Q092D, 34 Service Water Pump, dated October 19, 2011
3-PT-Q092D, 34 Service Water Pump, dated October 20, 2011

Condition Reports (CR-IP3-)
2011-04566
2011-04668
2011-04746
2011-04765

Drawings
IP3V-171-0072, Instrument Block Diagram Integrating Reactor Control System, Revision 5

Section 2RS2: Occupational As Low As is Reasonably Achievable Planning and Controls

Procedures
EN-RP-105, Radiological Work Permits, Revision 9
EN-RP-110, ALARA Program, Revision 7

Condition Reports (CR-IP2-)
2011-5110
2011-4457

Condition Reports (CR-IP3-)
2011-4290
2011-4307
2011-4359

Section 2RS8: Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Procedures
EN-RW-105, Process Control Program, Revision 2
10-LP-RPCT-7919, Lesson Plan, Radioactive Material Shipping, Revision 3

Condition Reports (CR-IP2-)
2011-00590
2011-03812
2011-05102
2011-05103
2011-05104
2011-05360
2011-05362

Condition Reports (CR-IP3-)
2010-01220
2011-00835

Miscellaneous
Radioactive Material Shipments: 11-003; 10-177; 10-138; 10-132; 10-021
IPEC QA Audit 14/15-2011-IP-1 (Preliminary)
IPEC QA Audit 14/15-2009-IP-1, 10/29/09
Quality Assurance Surveillance Report QS-2009-IP-01, 2/5/09
Unit 2 Scaling Factors (10 CFR 61) for: LWS Resin; DAW; SFP Filters; RCS Filters
Unit 3 Scaling Factors (10 CFR 61) for: LWS Resin; RCS Filters; DAW; SRST
Common Scaling Factor (10 CFR 61) for IPEC Soil

Section 4OA1: Performance Indicator Verification

Procedures
EN-LI-114, Performance Indicator Process, Revision 4

Completed Procedures
EN-LI-114, Performance Indicator Process – Reactor Coolant System Leakage, dated January 7, 2011
EN-LI-114, Performance Indicator Process – Reactor Coolant System Leakage, dated April 7, 2011
EN-LI-114, Performance Indicator Process – Reactor Coolant System Leakage, dated July 5, 2011
EN-LI-114, Performance Indicator Process – Reactor Coolant System Leakage, dated October 5, 2011

Section 4OA2: Problem Identification and Resolution

Procedures
EN-LI-121, Entergy Trending Process, Revision 10

Miscellaneous
Second Quarter 2011, Indian Point Entergy Center Quarterly Trend Report

Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion

Condition Reports (CR-IP3-)
2011-00680
IP2-2006-02133

Miscellaneous
SEP-SW-001, NRC Generic Letter 89-13 Service Water Program, Revision 4

Section 4OA5: Other Activities

Procedures
IP-CALC-10-00054, EC 17349, Crane Electrical Calculation
IP-CALC-10-00055, EC 17343, FSB Evaluation Under Revised Crane Loads
IP-CALC-10-00042, EC 17349, Seismic Analysis of Indian Point III Crane
IP-CALC-10-00036, EC 17349, Indian Point 3 Single Failure Proof Crane Misc Calculations
IP-CALC-10-00034, EC 17349, Indian Point 3 Single Failure Proof Crane Critical Weld
IP-CALC-10-00035, EC 17349, Indian Point 3 Single Failure Proof Trolley Misc. Items
IP-CALC-10-00032, EC 17349, Indian Point 3 Hoist/Reeving Equipment Calculation
IP-CALC-10-00033, EC 17349, Crane Electrical Calculation
IP-RPT-10-00034, Indian Point 3 Crane Replacement Project P&H Single Failure Proof Crane Installation Procedure
IP-RPT-10-00017 40/5, Ton Fuel Storage Building Crane NUREG 0554 Compliance Matrix
IP-RPT-10-00010 NOG-1, Compliance Matrix P&H Supersafe Single Failure Proof Crane for Indian Point 3
MMH Indian Point 3, Fuel Storage Building Crane Factory Acceptance Test Procedure MMH Procedure 36576 P&H Crane CN-36576
3-SOP-CM-002, Fuel Storage Building Crane Operation, Revision 17
0-RP-RWP-430, Radiological Controls for Inter-Unit Wet Fuel Transfer, Revision 0

Maintenance Orders/Work Orders
00219075 01
00219075 04
00219075 15

Miscellaneous
Radiological Surveys of ISFSI pad dated: 7/6/11; 7/22/10; 9/7/11; 9/28/11

LIST OF ACRONYMS

ADAMS	Agencywide Document Management System
ALARA	as low as is reasonably achievable
CAP	corrective action program
CFR	Code of Federal Regulations
CIV	containment isolation valve
CR	condition report
DRA	Deputy Regional Administrator
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EC	engineering change
EDG	emergency diesel generator
ENTERGY	Entergy Nuclear Northeast
FSAR	final safety analysis report
FSB	fuel storage building
FZ	fire zone
IP	inspection procedure
IPEC	Indian Point Energy Center
IR	inspection report
ISFSI	independent spent fuel storage installation
IST	inservice test
JPM	job performance measure
LER	licensee event report
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OEDO	Office of the Executive Director for Operations (NRC)
PCP	process control program
PS	public radiation safety
QA	quality assurance
RA	regional administrator
RCS	reactor coolant system
RHR	residual heat removal
RI	resident inspector
RWP	radiation work permit
SFP	spent fuel pool
SRI	senior resident inspector
SSC	structure, system, and component
SW	service water
SWP	service water pump
UFSAR	updated final safety analysis report