



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BLVD., SUITE 100
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August 7, 2015

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

**SUBJECT: INDIAN POINT NUCLEAR GENERATING – INTEGRATED INSPECTION
REPORT 05000247/2015002 AND 05000286/2015002**

Dear Mr. Coyle:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Indian Point Nuclear Generating (Indian Point), Units 2 and 3. The enclosed inspection report documents the inspection results, which were discussed on July 22, 2015, 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.

This report documents one Severity Level IV non-cited violation (NCV) and two NRC-identified findings of very low safety significance (Green). Both of these findings involved violations of NRC requirements. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance, and because they are entered into your corrective action program, the NRC is treating these findings as NCVs, consistent with Section 2.3.2.a of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at Indian Point. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Senior Resident Inspector at Indian Point.

L. Coyle

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In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRCs "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's Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Arthur L. Burritt, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos. 50-247 and 50-286
License Nos. DPR-26 and DPR-64

Enclosure:
Inspection Report 05000247/2015002 and 05000286/2015002
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L. Coyle

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U.S. NUCLEAR REGULATORY COMMISSION**REGION I**

Docket Nos. 50-247 and 50-286

License Nos. DPR-26 and DPR-64

Report Nos. 05000247/2015002 and 05000286/2015002

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Units 2 and 3

Location: 450 Broadway, GSB
Buchanan, NY 10511-0249

Dates: April 1, 2015, through June 30, 2015

Inspectors: J. Stewart, Senior Resident Inspector
G. Newman, Resident Inspector
S. Rich, Resident Inspector
A. Bolger, Acting Resident Inspector
B. Pinson, Acting Resident Inspector
R. Barkley, Senior Project Engineer
J. Bream, Physical Security Inspector
J. Furia, Senior Health Physicist
R. Montgomery, Resident Inspector - Limerick
T. Setzer, Senior Project Engineer

Approved By: Arthur L. Burritt, Chief
Reactor Projects Branch 2
Division of Reactor Projects

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SUMMARY

Inspection Report 05000247/2015002, 05000286/2015002; 04/01/2015 – 06/30/2015; Indian Point Nuclear Generating (Indian Point), Units 2 and 3; Surveillance Testing, Problem Identification and Resolution, Follow Up of Events and Notices of Enforcement Discretion.

This report covered a three-month period of inspection by resident inspectors and announced baseline inspections performed by regional inspectors. The inspectors identified one Severity Level IV non-cited violation (NCV) and two NCVs of very low safety significance (Green). The significance of most findings is indicated by their color (i.e., greater than Green, Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects within the Cross-Cutting Areas," dated December 4, 2014. All violations of U.S. Nuclear Regulatory Commission (NRC) requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green NCV of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," for Entergy's failure to take corrective actions for a condition adverse to quality involving Unit 3 Main Steam Safety Valve (MSSV) 46-3. Specifically, MSSV 46-3 failed to meet its Technical Specification (TS) required lift setting during a surveillance test on March 22, 2015. This failure was documented in a condition report (CR) but closed for trending purposes. Additionally, Entergy personnel did not correct the failure of MSSV 46-3 to meet its TS required lift setting after it failed its as-found lift setting test on March 1, 2013.

The inspectors determined the performance deficiency was more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Entergy did not take corrective actions following the March 22, 2015, failure of MSSV 46-3, and previous corrective actions in 2013 were not effective in ensuring it would remain capable of lifting at its TS required setpoint. The inspectors determined that this finding is of very low safety significance (Green) because the finding does not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with Entergy's maintenance rule program for greater than 24 hours. Specifically, of the 20 valves tested in 2015, 16 passed the as-found lift test and there was no loss of safety function. The inspectors determined that this finding had a Problem Identification and Resolution cross-cutting aspect related to Evaluation, because Entergy did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the CR documenting the MSSV 46-3 failure was closed for trending purposes and as a result, a thorough evaluation of the cause was not completed [P.2]. (Section 1R22)

- Severity Level IV. The inspectors identified a Severity Level IV NCV of 10 CFR 50.9(a); in that, Entergy did not provide complete information in a report submitted per 10 CFR 50.73(a)(2)(i)(B). Specifically, a Licensee Event Report (LER) submitted on

April 27, 2015, which reported three MSSV test failures (MS-46-2, MS-45-4, MS-47-4) that occurred on February 27, 2015, did not discuss the failure of MSSV 46-3, which also failed its TS as-found lift setting test and was declared inoperable on March 22, 2015. MSSV 46-3 was inoperable for greater than its TS allowed outage time, which is a condition prohibited by TSs, and therefore is required to be reported to the NRC.

The inspectors evaluated this performance deficiency in accordance with the Traditional Enforcement process. In accordance with Section 2.2.2.d of the NRC Enforcement Policy, the inspectors determined that the performance deficiency identified with the reporting aspect of the event is a Severity Level IV violation, because it is of more than minor concern, with relatively inappreciable potential safety significance and is related to findings that were determined to be more than minor issues. Specifically, this issue is related to a more than minor corrective action finding, which is documented in Section 1R22 of this report. In accordance with IMC 0612, Appendix B, this traditional enforcement issue is not assigned a cross-cutting aspect. (Section 4OA3)

Cornerstone: Emergency Preparedness

- Green. The inspectors identified a Green NCV of 10 CFR 50.54(q)(2) for Entergy's failure to maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to Part 50 and the planning standards of 50.47(b). Specifically, Entergy did not use accurate facility effluent parameters in its emergency classification and emergency action level (EAL) scheme. Entergy subsequently determined an acceptable facility parameter and corrected the EAL scheme.

This finding was determined to be more than minor because it is associated with the Procedure Quality attribute of the Emergency Preparedness cornerstone and adversely affected the cornerstone objective to ensure that Entergy is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined this finding was an emergency classification system finding and therefore evaluated the finding in accordance with IMC 0609, Appendix B, Section 5.4, "10 CFR 50.47(b)(4), Emergency Classification System." The finding was determined to be of very low safety significance (Green) because the issue had a very low likelihood of resulting in an early General Emergency (GE) declaration, but the finding more closely fit the "would result in unnecessary classification" significance category rather than the "would result in unnecessary protective actions for the public" significance category. Specifically, the inspectors considered that (1) the inadequate concentration threshold is used as a backup to the effluent threshold which reflects actual plant vent flow, (2) the calculation input discrepancy is small compared to the uncertainty of the setpoint calculation, and (3) although the protective action recommendation (PAR) would be made before offsite dose exceeded the Environmental Protection Agency protective action guideline, an early PAR during an actual release sequence would still serve to provide dose savings to the public. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Entergy did not stop when faced with uncertain conditions of the plant vent flowrates and EAL threshold calculation assumptions [H.11]. (Section 4OA2)

Other Findings

A violation of very low safety significance that was identified by Entergy was reviewed by the inspectors. Corrective actions taken or planned by Entergy have been entered into the corrective action program (CAP). The violation and corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 2 operated at 100 percent power during the inspection period.

Unit 3 operated at 100 percent power during the inspection period with the following exceptions: On April 7, the unit was taken offline to repair a steam leak on a feedwater instrument line. The leak was repaired, the unit restarted on April 8 and returned to full power later that day. On April 9, Unit 3 experienced a reactor trip and fire associated with failure of the 31 main transformer (Event Notification (EN) 51060). The unit remained shut down to replace the transformer. Unit 3 reactor went critical on May 25, 2015, and returned to full power on May 26, 2015. Unit 3 tripped from full power on June 15 due to a switchyard disturbance (EN 51156). Unit 3 reactor went critical on June 16 and returned to full power later that day.

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 Entergy's readiness for the onset of seasonal high temperatures. The inspectors reviewed procedure OAP-048, "Seasonal Weather Preparation (Units 2 and 3)." The focused areas were Unit 2 and Unit 3 emergency diesel generator (EDG) buildings, Unit 2 and Unit 3 electrical cable tunnels, and Unit 3 480 volt switchgear room. The inspectors reviewed the updated final safety analysis report (UFSAR), TSs, control room logs, and the CAP 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 hot 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 – 5 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

Unit 2

- On April 8, 2015, city water system while the fire water storage tank was drained for maintenance
- On April 13, 2015, 21 and 22 EDGs during planned maintenance on 23 EDG
- On May 8, 2015, Appendix R EDG following scaffolding removal and concurrent with Unit 3 startup

Unit 3

- On May 6, 2015, Appendix R EDG following the 32 EDG being removed from service for maintenance
- On June 24, 2015, 31 and 33 auxiliary boiler feedwater pumps (ABFPs) while the 32 ABFP was removed from service for maintenance

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, TSs, work orders (WOs), CRs, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of 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 CAP 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 May 29, 2015, the inspectors performed a complete system walkdown of accessible portions of the Unit 3 emergency boration line to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, 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 systems to verify as-built system configuration matched plant documentation, and that

system components and support equipment remained operable. The inspectors confirmed that systems and components were aligned correctly, free from interference from temporary services or isolation boundaries, environmentally qualified, and protected from external threats. The inspectors also examined the material condition of the components for degradation and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related CRs and WOs 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 – 6 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 (PFP), 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.

Unit 2

- Safety injection pump room in the Primary Auxiliary Building (PFP-207 was reviewed) on April 13, 2015
- Unit 2 Appendix R/station blackout EDG (PFP-160A was reviewed) on May 7, 2015

Unit 3

- Control room (PFP-353 was reviewed) on April 27, 2015
- Lower electrical penetration area (PFP-356 was reviewed) on May 5, 2015
- Appendix R EDG/service water (SW) backup pumps/gas turbine switchgear (PFP-388 was reviewed) on May 6, 2015
- 480 volt switchgear room (PFP-351 was reviewed) on May 18, 2015

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors observed and reviewed the site fire brigade response to the 31 main transformer fire on May 9, 2015 (See EN 51060). The fire started from the catastrophic failure of the transformer that involved a fault in the transformer casing, causing oil spillage and fire, which resulted in transformer deluge actuation. The plant fire brigade, augmented by other responders including offsite resources, applied foam to extinguish the fire. A reflash of the fire occurred and was extinguished. The transformer fault occurred at 1750 hours and the fire was extinguished at 2005 hours, with reflash watch assigned until all components were at ambient temperature. The inspectors evaluated the response of the plant fire brigade, the adequacy of the installed fire suppression equipment, and the additional attributes listed below. The inspectors verified that Entergy personnel identified deficiencies, openly discussed them in a self-critical manner, and documented issues in the CAP 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
- Emergency plan implementation
- Utilization of pre-planned strategies
- Assistance provided by offsite responders
- Recovery actions to restore fire protection readiness

The inspectors also evaluated the fire brigade's actions to determine whether these actions were in accordance with Entergy's fire-fighting strategies. At the end of the period, the inspectors reviewed Entergy document EN-TQ-125, "Fire Brigade Drills," Attachment Drill Report.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 3 samples)

.1 Internal Flooding Review (2 samples)

a. Inspection Scope

The inspectors reviewed the UFSAR, the site flooding analysis, and plant procedures to assess susceptibilities involving internal flooding. The inspectors also reviewed the CAP to determine if Entergy staff identified and corrected flooding problems and whether operator actions for coping with flooding were adequate. In particular, the inspectors focused on the areas listed below to verify the adequacy of equipment seals and floor

penetration seals, door seals, common drain lines and sumps, sump pumps, level alarms, control circuits, and temporary or removable flood barriers, as applicable.

- Unit 2 480 volt switchgear room
- Unit 3 480 volt switchgear room

b. Findings

No findings were identified.

.2 Annual Review of Cables Located in Underground Bunkers/Manholes (1 sample)

a. Inspection Scope

The inspectors conducted an inspection of underground manholes subject to flooding that contain cables whose failure could disable risk-significant equipment. The inspectors looked into the manholes to verify that cables and/or splices appeared intact, and to observe the condition of cable support structures. When applicable, the inspectors verified proper sump pump operation and verified level alarm circuits were set in accordance with station procedures and calculations to ensure that the cables will not fail if wetted. The inspectors also ensured that drainage was provided and functioned properly in areas where dewatering devices were not installed. For those cables found wetted or submerged in water, the inspectors verified that Entergy had conducted an operability evaluation for the cables and were implementing appropriate corrective actions.

- Manhole 31, 31A, and 31B on April 16, 2015
- Manhole 21 on April 28, 2015

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A – 2 samples)

a. Inspection Scope

The inspectors reviewed the 31 EDG jacket water heat exchanger and the 32 EDG lube oil and jacket water heat exchanger to determine readiness and availability to perform their safety functions. The inspectors observed actual condition of the heat exchangers when open for inspection and reviewed the final results of eddy current testing of the heat exchanger tubes. The inspectors discussed the results of the most recent inspection with engineering staff and reviewed the as-found and as-left conditions. The inspectors verified that Entergy initiated appropriate corrective actions for identified deficiencies. The inspectors also verified that the number of tubes plugged within the heat exchangers did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11Q – 4 samples)

Unit 2

.1 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on June 2, 2015, which included a reactor coolant system (RCS) leak leading to a large break loss-of-coolant accident (LOCA) following the failure of a pressurizer pressure channel. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency 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 emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. 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.

Unit 3

.2 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on April 21, 2015, which included non-regenerative letdown heat exchanger tube rupture followed by a loss of offsite power and small break LOCA. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency 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 emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. 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.

.3 Quarterly Review of Licensed Operator Performance in the Main Control Rooma. Inspection Scope

The inspectors observed and reviewed control room activities during an unplanned short duration outage that began on May 7, 2015. The inspectors observed the pre-evolution briefings, shift briefings, and reactivity control briefings to verify that the briefings met the criteria specified in Entergy's Administrative Procedure EN-OP-115, "Conduct of Operations." The inspectors observed the plant shutdown to verify that procedure use, crew communications, and coordination of activities similarly met established expectations and standards. Entergy management observations of the evolution were noted by the inspectors.

b. Findings

No findings were identified.

.4 Quarterly Review of Licensed Operator Performance in the Main Control Rooma. Inspection Scope

The inspectors observed and reviewed low power operations and entry into Abnormal Operating Procedure 3-AOP-VAC-1, "Loss of Condenser Vacuum," conducted on May 25, 2015, during the Unit 3 startup following the forced outage for the failure of the 31 main transformer. The inspectors observed infrequently performed test or evolution briefings, pre-shift briefings, and reactivity control briefings to verify that the briefings met the criteria specified in Entergy's Administrative Procedure EN-OP-115, "Conduct of Operations." The inspectors observed the plant startup to verify that procedure use, crew communications, and coordination of activities similarly met established expectations and standards. The inspectors noted operations management oversight of control room activities during the plant startup and recovery.

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, CAP documents, maintenance WOs, 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 paragraph (a)(2) performance criteria established by Entergy staff was reasonable. For SSCs classified as paragraph (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.

Unit 2

- CR-IP2-2014-4905, during performance of control rod testing, shutdown rod G-3 displayed rod movement not in conjunction with bank movement on September 18, 2014. The functional failure determination evaluation, related CRs, and system health report for control rod drive were reviewed by the inspectors.

Unit 3

- CR-IP3-2015-0084, both refueling water storage tank level instruments failed due to freezing when the electric heat trace circuit failed on January 8, 2015. The inspectors reviewed Entergy's apparent cause report, corrective actions, and reviewed the functional failure determination report.
- CR-IP3-2015-2437, shutdown of 32 component cooling water air conditioning unit due to icing issues on April 8, 2015. The inspectors reviewed Entergy's corrective actions, the functional failure determination report, and (a)(1) evaluation report.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 6 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 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 TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

Unit 2

- Elevated (Yellow) risk for removal of and planned maintenance on offsite feeder 13W93 on April 6, 2015.

- Elevated risk when the Appendix R EDG was removed from service for planned maintenance while 22 charging pump was out of service for planned repairs on April 20, 2015.
- Elevated risk when 22 auxiliary feedwater pump was removed from service for planned maintenance concurrent with 480 volt switchgear fan 216 for planned repairs on May 6, 2015. The inspectors included walkdowns of the 480 volt switchgear room and EDGs during the inspection.

Unit 3

- Unplanned Orange risk when oscillations were observed on 31 direct current bus while being powered by the 31 battery charger with 31 station battery out of service for cell replacement on May 24, 2014. The inspectors verified that Entergy took immediate actions to mitigate the increased risk and return to an acceptable level.
- Elevated risk when the normal power supply to 32 component cooling water pump was removed from service to test the pump from the Appendix R supply (per 3-PT-R150) on June 19, 2015.
- Elevated risk for removing 32 auxiliary feedwater pump from service for planned maintenance when solar flare activity (K9) was predicted and a Category 1 thunderstorm warning was issued on June 23, 2015. Entergy delayed the pump maintenance until the weather threats were cleared on June 24, 2015.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 5 samples)

a. Inspection Scope

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

Unit 2

- High RCS leakage identified on April 28, 2015 (CR-IP2-2015-1859). The leakage was later attributed to charging pump valve leakage.
- Low EDG jacket water temperature identified on May 17, 2015 (CR-IP2-2015-2139). Jacket water temperature dropped below 120 degrees to approximately 110 degrees. The EDG starting requirements that jacket water temperature is greater than 90 degrees and lube oil temperature is greater than 120 degrees were met and the EDG remained operable.
- On June 18, 2015, Unit 3 identified that the manipulation of valve 743 during residual heat removal (RHR) pump quarterly surveillance testing was inconsistent with the TS surveillance requirement that valve 743 be open and de-energized (CR-IP2-2015-2620). At the time of discovery, the valve was aligned in the correct position and met the requirements of the TS. The RHR pump surveillance procedure was promptly updated to remove the use of valve 743.

Unit 3

- On April 17, 2015, RCS loops 2 and 3 over-temperature delta temperature (OTΔT) set point gauges, TI-422A and TI-432A, were found to differ by 13 degrees Fahrenheit, failing the 12-hour TS channel check surveillance. Entergy determined that the actual OTΔT setpoints were within range using a digital voltmeter in the instrumentation racks and a downstream current amplifier was drifting affecting the gauges. The inspectors verified that the affected OTΔT channels remained operable.
- On June 9, a section of the operating mechanism for one of six intake and ventilation dampers for the 31 EDG was found to be shearing. The inspectors verified that damper could still perform its function and the engine would receive fresh air.

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 TS 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 TSs and the 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 by Entergy. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 samples)

Temporary Modifications

a. Inspection Scope

The inspectors reviewed the temporary modifications listed below to determine whether the modifications affected the safety functions of systems that are important to safety. The inspectors reviewed 10 CFR 50.59 documentation and post-modification testing results and conducted field walkdowns of the modifications to verify that the temporary modifications did not degrade the design bases, licensing bases, and performance capability of the affected systems.

- Unit 3 EC57837, replacement of 31 Battery Cell 59

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)a. Inspection Scope

The inspectors reviewed post-maintenance testing 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 test results were properly reviewed and accepted and problems were appropriately documented. The inspectors also walked down the affected job site, observed the pre-job brief and post-job critique where possible, confirmed work site cleanliness was maintained, and witnessed the test or reviewed test data to verify quality control hold point were performed and checked, and that results adequately demonstrated restoration of the affected safety functions.

Unit 2

- 23 auxiliary feedwater pump regulator valve FCV-406C regulator replacement and associated valve stroke timing test (2-PT-Q013) performed on April 16, 2015
- Appendix R diesel generator (DG) using 2-PT-M110, Appendix R DG Functional Test, following planned preventative maintenance on April 20–23, 2015
- 22 safety injection pump using 2-PT-Q029B, 22 Safety Injection Pump, following planned maintenance on the lube oil system on June 17, 2015

Unit 3

- Testing of 32 safety injection pump using the pump quarterly inservice test (3-PT-Q116B) after planned oil level gauge inspection and seal line leak repair on April 7, 2015
- 33 EDG using 3-PMT-M079C, 33 EDG Functional Test, following the removal of the temporary alternate SW drain line performed on June 3, 2015
- Testing of 32 RHR pump using the quarterly inservice test (3-PT-Q134B) following breaker change on June 17, 2015.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 2 samples).1 Unit 3 Short Duration Outagea. Inspection Scope

The inspectors reviewed the station's work schedule and outage risk plan for the Unit 3 short duration maintenance outage to repair a steam leak on a feedwater instrument line conducted May 7–8, 2015. The inspectors reviewed Entergy's development and implementation of outage plans and schedules to verify that risk, industry experience,

previous site-specific problems, and defense-in-depth were considered. During the outage, the inspectors observed portions of the shutdown and restart processes and monitored controls associated with the following outage activities:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TSs when taking equipment out of service
- Status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- Monitoring of decay heat removal operations
- Activities that could affect reactivity
- Tracking of startup prerequisites, and startup and ascension to full power operation
- Identification and resolution of problems related to outage activities

b. Findings

No findings were identified.

.2 Unit 3 Transformer Replacement Outage

a. Inspection Scope

The inspectors reviewed the station's work schedule and outage risk plan for the Unit 3 forced transformer replacement outage which was conducted on May 9–25, 2015. The inspectors reviewed Entergy's development and implementation of outage plans and schedules to verify that risk, industry experience, previous site-specific problems, and defense-in-depth were considered. During the outage, the inspectors observed portions of the cooldown and restart processes and monitored controls associated with the following outage activities:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TSs when taking equipment out of service
- Reactor coolant pressure, level, and temperature instruments during equipment re-alignments
- Status and configuration of electrical systems and switchyard activities to ensure that TSs and redundancy of electrical supply were met
- Monitoring of decay heat removal operations
- Reactor water inventory controls, including flow paths, configurations, alternative means for inventory additions, and controls to prevent inventory loss
- Activities that could affect reactivity
- Maintenance of containment as required by TSs
- Fatigue management
- Tracking of startup prerequisites, walkdown of the vapor containment to verify that debris had not been left which could block the emergency core cooling system suction strainers,
- Reactor startup and ascension to full power operation
- Identification and resolution of problems related to refueling outage activities

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 7 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 TSs, 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 which included RCS leak rate testing and inservice testing (IST):

Unit 2

- 0-SOP-LEAKRATE-001, Reactor coolant system leakage on April 28, 2015 (RCS)
- 2-PT-Q013, Inservice Valve Tests, timing test of RHR valve 888A on June 25, 2015

Unit 3

- 3-PT-R006A, MSSV Setting Test Using Set Pressure Verification Device, on February 27, 2015 and March 22, 2015
- 3PT-R150, Test of Appendix R alternate feed to 32 component cooling pump on June 19, 2015
- 3-PTQ120B, 32 ABFP (turbine driven) surveillance and IST on June 24, 2015
- 3-PT-Q101A, PCV-1310A and PCV-1310B nitrogen supply on June 29, 2015
- 3-PT-R090D, Local operation of 31 and 33 ABFPs on June 30, 2015

b. Findings

Introduction. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for Entergy's failure to take corrective actions for a condition adverse to quality involving Unit 3 MSSV 46-3. Specifically, MSSV 46-3 failed to meet its TS required lift setting during a surveillance test on March 22, 2015. This failure was documented in a CR but closed for trending purposes. Additionally, Entergy personnel did not correct the failure of MSSV 46-3 to meet its TS required lift setting after it failed its as-found lift setting test on March 1, 2013.

Description. MSSVs at Indian Point are safety-related, Section XI, Class 2, seismically qualified components. There are a total of 20 MSSVs at Indian Point Unit 3. Five safety valves are installed on each of the four main steam lines upstream of the main steam isolation valves. MSSV surveillance testing is performed in accordance with Entergy procedure 3-PT-R006A, "MSSV Setting Test Using Set Pressure Verification Device."

On March 22, 2015, MSSV 46-3 was tested as part of an expanded scope after failures were found during testing of MSSVs associated with 32 and 34 steam generators. On its initial attempt, MSSV 46-3 lifted at 1119.6 pounds per square inch gauge (psig), or 3.7 percent above its 1080 psig required set-point. CR-IP3-2015-02128 was generated to document the failure of MSSV 46-3 to meet its TS required lift setting. Two tests following the initial failure produced satisfactory lift results (1073.6 and 1073.9 psig).

The inspectors questioned what caused the March 22, 2015, failure of MSSV 46-3, since CR-IP3-2015-2128 did not have a documented cause evaluation and had been closed for trending purposes. As a result of the inspectors question, on July 1, 2015, Entergy created a corrective action (CA-4) in CR-IP3-2015-03427, and documented the cause may have been due to foreign material that was introduced into the valve during a modification in March 2013. Entergy further concluded that since the spindle and all other parts which could have impacted valve lift setting were replaced during the March 2013 modification, other failure modes are not likely.

On March 1, 2013, MSSV 46-3 failed its as-found lift setting test. MSSV 46-3 initially failed to lift after multiple attempts and had to be adjusted a total of 10 flats of the adjusting bolt (decreasing the set-pressure by approximately 120-140 psig) before obtaining a lift on the fifth attempt. MSSV 46-3 lifted at 1112.6 psig, which is 0.6 psig above its acceptable range of 1048-1112 psig, or 3.01 percent above its 1080 psig required set-point. The two subsequent lifts were at 1003.8 psig and 1011.8 psig, which continued to be outside the required range. MSSV 46-3 was further adjusted and subsequently lifted at 1084.2 psig and 1080.6 psig, which satisfied the test requirements for returning the valve to its required +/- 1 percent as-left set-pressure band. CR-IP3-2013-00869 was generated to document the failure of MSSV 46-3 to meet its TS required lift setting.

On March 7, 2013, MSSV 46-3 was disassembled and inspected by Entergy Engineering and Maintenance personnel, with vendor oversight provided by Crosby Valve. During the inspection, the upper portion of the spindle rod showed signs of minor galling and the lower portion showed indication that it had been side loaded and was making contact with the guide bearing, potentially with an abrasive foreign material between the two surfaces. Entergy replaced the spindle rod after they determined it was unacceptable for re-use.

In addition to their own inspections, Entergy hired an outside engineering firm, Lucius Pitkin, to perform an examination of the spindle of MSSV 46-3. Lucius Pitkin concluded that a combination of vibration and foreign material caused the wear patterns observed on the spindle. Based on Entergy's investigation and the input from Lucius Pitkin, the cause of MSSV 46-3 lifting at greater than 3 percent above its required set-pressure was determined to be internal friction caused by foreign material between the guide bearing and spindle. To correct the issue, a modification was presented and approved for all of the Unit 2 and Unit 3 MSSVs to install sacrificial bronze wear sleeves in the adjusting bolt and upper/lower spring washers. Seven of the twenty MSSVs (including MSSV 46-3) were modified in refueling outage 3R17 (March 2013), using engineering design change package, EC 38536, and WO 322981-01.

Analysis. The inspectors determined that Entergy did not take corrective actions for an adverse condition associated with MSSV 46-3. This was a performance deficiency that was reasonably within Entergy's ability to foresee and prevent. Specifically, MSSV 46-3

did not meet its TS required lift setting of 1080 psig +/- 3 percent (1048-1112 psig) after it failed its as-found lift setting test on March 22, 2015, and no corrective action was taken. The inspectors screened the performance deficiency using IMC 0612, Appendix B, "Issue Screening," and determined it was more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Entergy did not take corrective actions following the March 22, 2015, failure of MSSV 46-3, and previous corrective actions in 2013 were not effective in ensuring it would remain capable of lifting at its TS required setpoint.

The inspectors screened the finding for significance using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued June 19, 2012, and determined that this finding is of very low safety significance (Green) because the finding does not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with Entergy's maintenance rule program for greater than 24 hours. Specifically, of the 20 valves tested in 2015, 16 passed the as-found lift test and there was no loss of safety function.

The inspectors determined that this finding had a Problem Identification and Resolution cross-cutting aspect related to Evaluation, because Entergy did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the CR documenting the MSSV 46-3 failure was closed for trending purposes and as a result, a thorough evaluation of the cause was not completed [P.2]

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," states, in part, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected." Contrary to the above, Entergy did not correct the failure of MSSV 46-3 to meet its TS required lift setting after it failed its as-found lift setting test on March 22, 2015. The March 22, 2015, failure was documented in a CR but closed for trending purposes. MSSV 46-3 was returned to operable status after being successfully retested. Entergy entered this issue into the CAP (CR-IP3-2015-03427), and has changed the Unit 3 MSSV test frequency from 4 years to 2 years until both all sleeve modifications are implemented and the issue is resolved. Because this violation was of very low safety significance and was entered into Entergy's CAP, this finding is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000286/2015002-01, Inadequate Corrective Action for Main Steam Safety Valve 46-3 Failure to Lift at Required Setpoint)**

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

Training Observations

a. Inspection Scope

The inspectors observed an emergency director mini drill on June 22, 2015, which required EAL declaration and generation of the State notification form. Entergy planned for this evolution to be evaluated and included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the emergency director. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that Entergy evaluators noted the same issues and entered them into the CAP.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01 – 1 sample)

a. Inspection Scope

The inspectors reviewed Entergy's performance in assessing and controlling radiological hazards in the workplace. The inspectors used the requirements contained in 10 CFR 20, TSs, applicable regulatory guides, and the procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors reviewed the PIs for the occupational exposure cornerstone, radiation protection program audits, and reports of operational occurrences in occupational radiation safety since the last inspection.

Radiological Hazard Assessment

The inspectors reviewed recent plant radiation surveys and any changes to plant operations since the last inspection to identify any new radiological hazards for onsite workers or members of the public.

Instructions to Workers

The inspectors observed several containers of radioactive materials and assessed whether the containers were labeled and controlled in accordance with requirements.

The inspectors reviewed several occurrences where a worker's electronic personal dosimeter alarmed. The inspectors reviewed Entergy's evaluation of the incidents, documentation in the CAP, and whether compensatory dose evaluations were conducted when appropriate.

Contamination and Radioactive Material Control

The inspectors observed the monitoring of potentially contaminated material leaving the radiological control area and inspected the methods and radiation monitoring instrumentation used for control, survey, and release of that material. The inspectors selected several sealed sources from inventory records and assessed whether the sources were accounted for and were tested for loose surface contamination. The inspectors evaluated whether any recent transactions involving nationally tracked sources were reported in accordance with requirements.

Radiological Hazards Control and Work Coverage

The inspectors evaluated in-plant radiological conditions and performed independent radiation measurements during facility walk-downs and observation of radiological work activities. The inspectors assessed whether posted surveys, radiation work permit, worker radiological briefings, the use of continuous air monitoring, and dosimetry monitoring were consistent with the present conditions. The inspectors examined the control of highly activated or contaminated materials stored within the spent fuel pools and the posting and physical controls for selected high radiation areas (HRAs), locked HRAs, and very high radiation areas (VHRA) to verify compliance and conformance with the occupational PI.

Risk-Significant HRA and VHRA Controls

The inspectors reviewed the controls and procedures for HRAs, VHRAs, and radiological transient areas in the plant.

Problem Identification and Resolution

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were identified at an appropriate threshold and properly addressed in the CAP.

b. Findings

No findings were identified.

2RS2 Occupational ALARA Planning and Controls (71124.02 – 1 sample)

a. Inspection Scope

The inspectors assessed Entergy's performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors used the requirements contained in 10 CFR 20, applicable Regulatory Guides, TSs, and procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors conducted a review of Indian Point's collective dose history and trends, ongoing and planned radiological work activities, radiological source term history and trends, and ALARA dose estimating and tracking procedures.

Radiological Work Planning

The inspectors reviewed the spring 2015 Unit 3 refueling outage radiological work activities including: ALARA work activity evaluations, exposure estimates, exposure reduction requirements, exposure results achieved, person-hour estimates and actual results achieved, and post-job reviews that were conducted to identify lessons learned.

Verification of Dose Estimates and Exposure Tracking Systems

The inspectors reviewed the current annual collective dose estimate, basis methodology, and measures to track, trend, and reduce occupational doses for ongoing work activities.

Source Term Reduction and Control

The inspectors reviewed the current plant radiological source term and historical trend, plans for plant source term reduction, and contingency plans for changes in the source term as the result of changes in plant fuel performance or changes in plant primary chemistry.

Problem Identification and Resolution

The inspectors evaluated whether problems associated with ALARA planning and controls were identified at an appropriate threshold and properly addressed in the CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 – 6 samples)

.1 Initiating Events Performance Indicators

a. Inspection Scope

The inspectors reviewed Entergy's submittals for the following Initiating Events Cornerstone PIs for the period April 1, 2014, through March 31, 2015:

Unit 2

- Unplanned Scrams per 7000 Critical Hours (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)

Unit 3

- Unplanned Scrams (IE01)
- Unplanned Power Changes (IE03)
- Unplanned Scrams with Complications (IE04)

To determine the accuracy of the PI data reported during those periods, inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors reviewed Entergy's operator narrative logs, maintenance planning schedules, CRs, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals. During the review period there was one scram and no scrams with complications.

b. Findings

No findings were identified.

.2 Protected Area Security Equipment Performance Index

a. Inspection Scope

The inspectors performed a review of PI data submitted by Entergy for the security cornerstone. The review was conducted to ensure that Entergy's program for submitting data for the Protected Area Security Equipment Performance Index was consistent with NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7.

The inspectors reviewed Entergy's tracking and trending reports, conducted personnel interviews, and examined the security event reports for the PI data collected from first quarter 2014 through the second quarter 2015.

This inspection activity represented the completion of one sample relative to this inspection area and completed the annual inspection requirement.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152 – 4 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 entered issues into the CAP 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 CAP and periodically attended CR

screening meetings. The inspectors also confirmed, on a sampling basis, that, as applicable, for identified defects and non-conformances, Entergy performed an evaluation in accordance with 10 CFR Part 21.

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 CAP, such as trend reports, PIs, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors also reviewed Entergy's CAP database for the first and second quarters of 2015 to assess CRs written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily CR review (Section 40A2.1). The inspectors reviewed the Entergy – Nuclear Fleet Scorecard for Indian Point, dated May 2015, 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 noted and discussed with Entergy staff a minor adverse trend regarding attention to detail when reporting events to NRC. The trend was identified after the inspectors noted that in the initial report of the June 15, Unit 3 reactor trip, the notice to the NRC (EN 51156) included a problem with offsite line W93 when it should have referenced W97. Entergy documented the inspector observation in the CAP and corrected the report. Secondly, NRC found that Unit 3 LER 05000286/2015-002-00 should have been updated to reflect the testing failure for main steam valve MS-46-3. And finally, NRC observed during emergency classification practice, operators did not date the simulated state notification prior to saying the exercise was complete. All of these issues were documented in the CAP in CR-IP3-2015-3761, and updates/corrections were made or planned, as appropriate. The inspectors noted that there was no adverse consequence as a result of this low level trend. Based on the overall results of the semi-annual trend review, the inspectors determined that Entergy was appropriately identifying and entering issues into the CAP at a very low level, adequately evaluating the identified issues, and identifying adverse trends before they became more safety significant problems.

.3 Annual Sample: Review of Cold Weather-Related Issues

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's evaluations and corrective actions associated with three cold weather-related CRs: CR-IP2-2013-00398, CR-IP2-2014-00321, and CR-IP3-2015-00084.

Specifically, CR-IP2-2013-00398 documented the inability to raise level in the Unit 2 primary water storage tank (PWST) because flow could not be established to the PWST due to freezing in the fill lines, CR-IP2-2014-00321 documented freezing of the Unit 2 condensate storage tank (CST) level transmitters (LT-1128 and LT-1128A), and CR-2015-00084 documented the freezing of the Unit 3 reactor water storage tank (RWST) level instrumentation as a result of failure of its tubing strip heaters. All of the freezing events occurred during periods of extreme cold weather.

The inspectors assessed Entergy's problem identification threshold, problem analysis, extent of condition reviews, compensatory actions, and the prioritization and timeliness of corrective actions to evaluate whether Entergy was appropriately identifying, characterizing, and correcting problems associated with these issues and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Entergy's CAP and 10 CFR Part 50, Appendix B. The inspectors performed a field walkdown and interviewed engineering personnel to assess the adequacy of the planned and completed corrective actions. Finally, the inspectors reviewed LER 05000286/2015-001-00 associated with CR-IP3-2015-00084 as described in Section 4OA3.2 of this report.

b. Findings and Observations

No findings were identified.

Entergy discovered the condition associated with CR-IP2-2013-0039, while attempting to raise level in the Unit 2 PWST. No flow was seen from the cold water booster pump to the PWST. The flow line was double checked and all valves were in the correct position. Upon further investigation, it was found that the primary water fill line was exposed in the northeast corner of the transformer yard due to a large excavation for a one-time underground piping inspection. The piping was frozen, blocking flow to the PWST. Entergy performed corrective maintenance, conducted an extent-of-condition review for exposed piping due to excavation, reviewed both internal and external operating experience, and completed a detailed apparent cause evaluation report.

Entergy's technical review determined that there were no actual or increased challenges to nuclear or radiological safety as result of the freezing event. The inspectors reviewed Entergy's analyses and found it to be reasonable. Overall, Entergy's actions were appropriate and addressed the apparent and contributing causes for the event.

Entergy discovered the self-revealing conditions associated with CR-IP2-2014-00321, as a result of the Unit 2 level transmitters, LT-1128 and LT-1128A, failing high due to freezing caused by wind and extreme cold. Entergy performed corrective maintenance, reviewed internal operating experience, and updated their Seasonal Weather Preparation procedure, OAP-048, to include building an enclosure around the Unit 2

CST level instruments to prevent freezing. Entergy's review also determined that due to the level transmitters failing high because of the freezing, the maintenance rule function of monitor post-accident monitoring instrumentation was not met. Therefore, it resulted in a maintenance functional failure for the system which potentially drives further evaluation and corrective actions. The inspectors reviewed Entergy's evaluation and found it to be reasonable. Overall, Entergy's actions were appropriate and addressed the apparent and contributing causes for the event.

Entergy discovered the self-revealing condition associated with CR-IP3-2015-00084, when control room indication of Unit 3 RWST level was erratic as a result of freezing instrumentation lines (LT-920 & LIC-921). The direct cause of the freezing was determined to be due to the failure of the RWST strip heater (EHT34-1 Strip H) to perform its intended function of maintaining the temperature within the instrument enclosure above 40 degrees Fahrenheit. The apparent cause was determined to be due to a poor (high resistance) electrical connection at the strip heater wire lug as a result of thermal cycling and age. The connection on the strip heater showed signs of heat stress and thermal cycling which likely led to the deterioration of the mechanical connection within the crimp. Entergy performed corrective maintenance, conducted an extent-of-condition review of onsite strip heaters used to provide freeze protection, reviewed both internal and external operating experience, and completed a detailed apparent cause evaluation report. The inspectors reviewed Entergy's analyses and found it to be reasonable. Overall, Entergy's actions to restore the instruments to service were appropriate and further actions were planned to address the apparent and contributing causes for the event. The inspectors determined that the three events were independent problems that occurred during extreme weather. No performance deficiencies were identified and the licensee's corrective actions were appropriate.

.4 Annual Sample: Abnormal Radiation Release EAL Classification

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's evaluations and corrective actions associated with CR-IP3-2015-00113. Specifically, CR-IP2-2013-00113 documented a potentially incorrect assumption in the calculation of Unit 3's Abnormal Radiation Release EAL thresholds.

The inspectors assessed Entergy's problem identification threshold, problem analysis, extent of condition reviews, compensatory actions, and the prioritization and timeliness of corrective actions to evaluate whether Entergy was appropriately identifying, characterizing, and correcting problems associated with these issues and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Entergy's CAP and 10 CFR Part 50, Appendix B. The inspectors performed a field walkdown and interviewed Entergy personnel to assess the adequacy of the planned and completed corrective actions.

b. Findings and Observations

Introduction. The inspectors identified a NCV of 10 CFR 50.54(q)(2) for Entergy's failure to maintain the effectiveness of its emergency plan due to inadequate EAL thresholds and the unreliability of the wide range gaseous detector R-27. As a result, Entergy's emergency assessment capability for abnormal radiation release was degraded from

March 2015 until June 2015. During this period, there were no emergencies requiring abnormal release assessments or EAL implementation.

Description. In January 2015, Entergy discovered that its emergency classification for Indian Point Unit 3's Abnormal Radiological Release EALs (AG1.1, AA1.1, AA1.1, and AU1.1 through Table A-1) may have been degraded. There are two initiating conditions for General Emergency and Site Area Emergency – activity based on assumed flow and effluent based on measured flow. For activity, Entergy believed the activity threshold may have not been conservative due to actual operational plant vent flow (about 90,000 standard cubic feet per minute (SCFM)) exceeding assumed flow (70,000 SCFM). As an immediate corrective action, Entergy changed its EAL thresholds to remove this apparent non-conservatism and based the thresholds on maximum design ventilation flow (106,000 SCFM). After further analyses, Entergy determined that during accidents where there is a radiological release through the plant vent approaching offsite dose thresholds, plant vent flow is reduced (70,000 SCFM).

Unit 3 relies on two gaseous radiation detectors for its Abnormal Radiological Release/Effluent EALs, R-14 and R-27. R-14 is a narrow-range gaseous detector, which provides an indication of activity for a fixed volume of air in microcuries per cubic centimeter ($\mu\text{Ci}/\text{cc}$), and is used for the lowest two emergency classification levels: Alerts and Unusual Events. R-27 is a wide-range gaseous detector, which provides an indication of activity in $\mu\text{Ci}/\text{cc}$ and effluent rate in microcuries per second ($\mu\text{Ci}/\text{sec}$), and is used for all four emergency classification levels: General Emergency, Site Area Emergency, Alert, and Unusual Event. The EAL activity thresholds for R-14 and R-27 in $\mu\text{Ci}/\text{cc}$ use an assumed flowrate, while the effluent thresholds in $\mu\text{Ci}/\text{sec}$ for R-27 use a measured flowrate. The EAL thresholds are back calculated from projected offsite dose thresholds using annual average meteorology. If the results of dose assessments using actual meteorology are available when the classification is made, the dose assessment results override the monitor reading EAL. The inspectors determined that Entergy inappropriately revised its EAL threshold for activity since flow as high as 106,000 SCFM would not be expected through the plant vent and could cause an unnecessary emergency declaration.

Additionally, Entergy questioned the reliability of readings from R-27 plant vent flowmeter that appeared to have been historically low, which would have caused the effluent classification ability to be delayed. Entergy confirmed that a temporary procedure change in June 1989 changed the flow correction factor for unknown reasons, which resulted in R-27 plant flow reading about seventeen percent lower than actual. An unrelated and undetermined calibration issue in April 2014 incidentally resulted in the flow reading closer to its actual value until April 2015. The inspectors noted that as early as December 13, 2011, Entergy identified in a CR that flow transmitter ELL1 (a transmitter which provides data to the plant computer) and the R-27 plant vent flow measurements were significantly different with R-27 reading approximately twenty percent lower. The inspectors reviewed the CR and associated WOs and determined that Entergy inappropriately closed the work after troubleshooting identified that ELL1 was functioning properly without evaluating R-27.

Analysis. The inspectors determined that Entergy's failure to maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to Part 50 and the planning standards of 10 CFR 50.47(b) was a performance deficiency that was within Entergy's ability to foresee and correct. This finding was determined to be more than

minor because it is associated with the Procedure Quality attribute of the Emergency Preparedness cornerstone and adversely affected the cornerstone objective to ensure that Entergy is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. In accordance with IMC 0609.04, "Phase 1 – Initial Characterization of Findings," the inspectors determined that the finding involved a failure to comply with a planning standard or risk-significant planning standard. The inspectors determined this finding was an Emergency Classification System finding and therefore evaluated the finding in accordance with IMC 0609, Appendix B, Section 5.4, "10 CFR 50.47(b)(4), Emergency Classification System." The finding was determined to be of very low safety significance (Green) because the issue had a very low likelihood of resulting in an early General Emergency declaration, the finding more closely fit the "would result in unnecessary classification" significance category rather than the "would result in unnecessary protective actions for the public" significance category. Specifically, the inspectors considered that (1) the inadequate concentration threshold is used as a backup to the effluent threshold which reflects actual plant vent flow, (2) the calculation input discrepancy is small compared to the uncertainty of the setpoint calculation, and (3) although the PAR would be made before offsite dose exceeded the Environmental Protection Agency protective action guideline, an early PAR during an actual release sequence would still serve to provide dose savings to the public. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Entergy did not stop when faced with uncertain conditions of the plant vent flowrates and EAL threshold calculation assumptions. [H.11]

Enforcement. 10 CFR 50.54(q)(2) states, in part, that "A holder of a license under this part, or a combined license under part 52 of this chapter after the Commission makes the finding under § 52.103(g) of this chapter, shall follow and maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b)."

10 CFR 50.47(b)(4) states, in part, that "a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures." Contrary to the above, from March 1, 2015, until June 10, 2015, Entergy did not maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to Part 50 and the planning standards of 50.47(b). Specifically, Entergy did not use accurate facility effluent parameters in its emergency classification and action level scheme. Entergy subsequently issued corrective action 15 under CR-IP3-2015-00113 and corrected the EAL threshold. **(NCV 05000286/2015002-02; Failure to Maintain the Effectiveness of Emergency Plan Due to an Inadequate Basis for Emergency Action Level Thresholds)**

.5 Annual Sample: Groundwater Contamination

a. Inspection Scope

Entergy identified a significant increase in tritium activity in three groundwater monitoring wells located adjacent to the Unit 2 Spent Fuel Pool in late March 2014 near the conclusion of the Unit 2 refueling outage. The inspectors reviewed Entergy's documentation of this event, contained in CR-IP2-2014-02564, and the associated

apparent cause evaluation. The inspection sample review of this event is ongoing and will be completed in a later inspection report.

b. Findings

No findings were identified.

4OA3 Follow Up of Events and Notices of Enforcement Discretion (71153 – 4 samples)

.1 Plant Events

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Entergy made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Entergy's follow-up actions related to the events to assure that Entergy implemented appropriate corrective actions commensurate with their safety significance.

- On May 9, 2015, at 5:50 p.m., Indian Point Unit 3 experienced an automatic reactor trip as a result of a failure of the 31 main transformer and subsequent main generator lockout and turbine trip. A Notification of Unusual Event (UE) was declared at 6:01 p.m. for an explosion within the Protected Area. The fire was initially extinguished by the transformer deluge system. The fire then reignited and was extinguished by the site fire brigade with assistance from offsite fire departments who responded to the event. The UE was exited at 9:03 p.m. The reactor trip was uncomplicated. All control rods inserted into the reactor core, and all safety systems responded as designed. The NRC resident inspectors responded to the site and independently confirmed that the reactor was in a stable, safe condition. Resident inspectors conducted immediate follow-up inspections of the plant and operator response to the event and later reviewed Entergy's evaluation of the event and recovery activities.
- On June 15, 2015, Indian Point Unit 3 experienced an automatic reactor trip as a result of opening of both unit output breakers during switchyard maintenance. The maintenance was being done by the transmission company. The reactor trip was uncomplicated, all control rods inserted into the core, and all safety systems responded as designed. The NRC resident inspectors responded to the site and independently confirmed that the plant was in a stable, safe condition. Resident inspectors conducted immediate follow-up inspections of the plant and operator response to the event and later reviewed Entergy's evaluation of the event and recovery activities.

b. Findings

No findings were identified.

- .2 (Closed) LER 05000286/2015-001-00: Safety System Functional Failure Due to Inoperable Refueling Water Storage Tank Level Alarms Due to Freezing of the Level Instrument Sensing Lines Caused by a Failed Strip Heater

On January 8, 2015, both channels of the Unit 3 RWST level sensing instrumentation (LT-920 and LIC-910) were observed as erratic in the main control room. Unit 3 operators investigated and found that instrument line heat trace had failed and that level instrument tubing had frozen. Operators promptly declared both channels of low-low level alarms inoperable and entered TS 3.5.4, RWST Condition C, which required at least one channel of RWST low-low level to be restored to operable within one hour. With repairs requiring thawing the lines then calibrating the instruments, the one-hour action was not able to be met and operators commenced a shutdown of Unit 3, as required by TSs. Repairs and calibrations on one channel were completed and the power reduction was stopped at approximately 45 percent power. The RWST level alarms are used to mitigate LOCAs and cue operators for manual switchover from injection to recirculation. Entergy found the cause of the loss of level instrumentation was due to the failure of the heat trace circuit combined with severe cold weather which froze the sensing lines. The apparent cause of the loss of heat trace was a high resistance electrical connection at the strip heater wire lug due that failed due to thermal cycling and age. Corrective actions included repair of strip heater lug and calibration of the level instrumentation. Entergy planned to revise maintenance procedure 0-ELC-419-EHT, "Annual Meggar Test of Heat Trace Cable," to include inspection of strip heater connections within the outdoor instrument enclosures prior to the next cold period.

The event had no significant effect on public health and safety as the instruments were quickly recovered and returned to service and were not needed during the occurrence. The inspectors observed Entergy's actions during the event and later reviewed corrective action plans documented in CR-IP3-2015-00084. The inspectors did not identify any performance deficiencies during the review of the LER. This LER is closed.

- .3 (Closed) LERs 05000286/2015-002-00 and 2015-002-01: "Technical Specification Prohibited Condition Caused by Three [Four] Main Steam Safety Valves Outside Their As-Found Lift Set Point Test Acceptance Criteria."

On February 27, 2015, MSSV 46-2, 45-4, and 47-4 failed to meet the TS required as-found lift setpoint test. Additionally, on March 22, 2015, MSSV 46-3 was tested as part of an expanded scope and also failed its lift setpoint test. Entergy determined the failure of MS-47-4 and MS-46-2 was caused by internal friction. The apparent cause of the failure of MS-45-4 was reuse of a worn spindle. The apparent cause of the failure of MS-46-3 was foreign material. Corrective actions included testing all 20 MSSVs and adjusting their set point to be within +/- 1 percent of design set pressure. Additionally, the Unit 3 MSSV test frequency has been changed from 4 years to 2 years.

On April 27, 2015, Entergy submitted LER 2015-002-00, "Technical Specification Prohibited Condition Caused by Three Main Steam Safety Valves Outside Their As-Found Lift Set Point Test Acceptance Criteria," to report the failure of MSSV 46-2, 45-4, and 47-4. The inspectors reviewed LER 2015-002-00 and identified a NCV of 10 CFR 50.9(a) because Entergy did not also report the March 22, 2015, failure of MSSV 46-3 (NCV documented below).

As a result of the NRC's inspection, on July 7, 2015, Entergy submitted LER 2015-002-01, "Technical Specification Prohibited Condition Caused by Four Main Steam Safety Valves Outside Their As-Found Lift Set Point Test Acceptance Criteria," to report the failure of MSSV 46-3. The inspectors reviewed LER 2015-002-01 and determined that it properly reported the failure of MSSV 46-3.

Operability of the MSSVs includes the ability to open within the set point tolerances as stated in TS Surveillance Requirement 3.7.1.1 and TS Limiting Condition of Operation 3.7.1. The TS requires each MSSV be verified to lift per Table 3.7.1-2 in accordance with the IST Program. MSSV 46-2, 45-4, 47-4, and 46-3 were inoperable for greater than the TS allowed outage time, which is a condition prohibited by TSs. The enforcement aspects of this issue are discussed in Section 4OA7. Additionally, the inspectors identified a NCV of 10 CFR 50 Appendix B for failure to correct a condition adverse to quality associated with MSSV 46-3. The enforcement aspects of this issue are discussed in Section 1R22. These LERs are closed.

Introduction. The inspectors identified a Severity Level IV NCV of 10 CFR 50.9(a); in that, Entergy did not provide complete information in a report submitted per 10 CFR 50.73(a)(2)(i)(B). Specifically, a LER submitted on April 27, 2015, which reported three MSSV test failures (MS-46-2, MS-45-4, MS-47-4) that occurred on February 27, 2015, did not discuss the failure of MSSV 46-3, which also did not meet its TS as-found lift setting test and was declared inoperable on March 22, 2015. MSSV 46-3 was inoperable for greater than its TS allowed outage time, which is a condition prohibited by TSs, and therefore is required to be reported to the NRC.

Description. There are 20 MSSVs at Indian Point Unit 3 which are safety-related, Section XI, Class 2, seismically qualified components. Each MSSV is required to meet its TS required lift setpoint. Entergy's IST program tests the MSSVs in accordance with the American Society of Mechanical Engineers Operation and Maintenance Code and Unit 3 TSs.

On February 27, 2015, MSSV 46-2, 45-4, and 47-4 failed to meet the TS as-found lift setpoint test. Entergy concluded MSSV 46-2, 45-4, and 47-4 were inoperable for greater than the TS allowed outage time, which is a condition prohibited by TSs. This condition is required to be reported to the NRC within 60 days in accordance with 10 CFR 50.73(a)(2)(i)(B). Therefore, on April 27, 2015, Entergy submitted LER 2015-002-00, "Technical Specification Prohibited Condition Caused by Three Main Steam Safety Valves Outside Their As-Found Lift Set Point Test Acceptance Criteria," to report the failure of MSSV 46-2, 45-4, and 47-4.

On March 22, 2015, MSSV 46-3 was tested as part of an expanded scope after failures were found during the testing of the initial group of MSSVs. On its initial attempt, MSSV 46-3 lifted at 1119.6 psig, or 3.7 percent above its 1080 psig required set-point. CR-IP3-2015-02128 was generated to document the failure of MSSV 46-3 to meet its TS required lift setting. Entergy concluded that this condition was reportable, and documented in the CR that this condition should be included in the 60 day LER that was being prepared to report the failures of 46-2, 45-4, and 47-4.

The inspectors reviewed LER 2015-002 and determined that the LER did not report MSSV 46-3 as a TS prohibited condition. Entergy determined that they had missed reporting MSSV 46-3 as intended, and on June 10, 2015, wrote CR-IP3-2015-03427 to

include the MSSV 46-3 failure as an update to LER 2015-002. On July 7, 2015, Entergy submitted LER 2015-002-01, "Technical Specification Prohibited Condition Caused by Four Main Steam Safety Valves Outside Their As-Found Lift Set Point Test Acceptance Criteria." The inspectors reviewed LER-2015-002-01 and determined that it properly reported the failure of MSSV 46-3.

Analysis. The inspectors determined that not providing a complete report in accordance with 10 CFR 50.9(a) is a performance deficiency that was reasonably within Entergy's ability to foresee and correct and should have been prevented. Specifically, Entergy did not report the failure of MSSV 46-3 as part of the LER that was submitted to the NRC. Because the issue had the potential to affect the NRC's ability to perform its regulatory oversight function, the inspectors evaluated this performance deficiency in accordance with the Traditional Enforcement process. In accordance with Section 2.2.2.d of the NRC Enforcement Policy, the inspectors determined that the performance deficiency identified with the reporting aspect of the event is a Severity Level IV violation, because it is of more than minor concern, with relatively inappreciable potential safety significance and is related to findings that were determined to be more than minor issues. Specifically, this issue is related to a more than minor corrective action finding, which is documented in Section 1R22 of this report. In accordance with IMC 0612, Appendix B, this traditional enforcement issue is not assigned a cross-cutting aspect.

Enforcement. 10 CFR 50.9(a) states "Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects." Contrary to the above, on April 27, 2015, information provided by Entergy in accordance with 10 CFR 50.73(a)(2)(i)(B) was not complete in all material aspects. Specifically, the failure of MSSV 46-3 was material to the NRC because this information was required to be reported and further inspection would be conducted of the issue. The inspectors determined that submission of incomplete reports required by 10 CFR 50.73 is characterized as a Severity Level IV violation. However, because the violation was of very low safety significance and was entered into Entergy's CAP (CR-IP3-2015-03427), this violation is being treated as an NCV consistent with Section 2.3.2 of the Enforcement Policy, **(NCV 05000286/2015002-03, Incomplete 50.73 Report Associated with Failures of Main Steam Safety Valves)**

40A6 Meetings, Including Exit

On July 22, 2015, the inspectors presented the inspection results to Mr. Larry Coyle, 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.

40A7 Licensee-Identified Violations

The following violation of very low safety significance was identified by Entergy and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

- On February 27, 2015, MSSV 46-2, 45-4, and 47-4 failed to meet the TS as-found lift setpoint test. Additionally, on March 22, 2015, MSSV 46-3 failed to meet the TS as-found lift setpoint test.

TS Limiting Condition for Operation 3.7.1.A, "Main Steam Safety Valves," requires if one or more required MSSVs are inoperable, reduce neutron flux trip setpoint to less than or equal to the applicable percent Reactor Thermal Power listed in Table 3.7.1-1 within 4 hours. If the required action and associated completion time is not met, the reactor shall be placed in Mode 3 in 6-hours and Mode 4 in 12 hours. Contrary to this requirement, MSSV 46-2, 45-4, 47-4, and 46-3 were inoperable for a time period that exceeded the TS allowed outage. This finding was determined to be of very low safety significance (Green) because the finding did not represent a loss of safety function for the MSSV system. This issue was documented in Entergy's CAP (CR-IP3-2015-0898 and CR-IP3-2015-2128) and reports were made to the NRC in LER 05000286/2015-002-00 and 2015-002-01.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

N. Azevedo, Code Programs Supervisor
K. Baumbach, Chemistry Supervisor
S. Bianco, Operations Fire Marshal
R. Burroni, Engineering Director
T. Chan, Engineering Mechanical Supervisor
L. Coyle, Site Vice President
T. Cramer, Assistant Operations Manager
D. Dewey, Assistant Operations Manager
J. Dinelli, Plant Operations General Manager
R. Dolanksy, ISI Program Manager
R. Drake, Civil Design Engineering Supervisor
J. Ferrick, Production Manager
D. Gagnon, Security Manager
L. Glander, Emergency Preparedness Manager
N. Lizzo, Training Manager
F. Kich, Performance Improvement Manager
J. Kirkpatrick, Regulatory and Performance Improvement Director
D. Mayer, Unit 1 Director
B. McCarthy, Operations Manager
F. Mitchell, Radiation Protection Manager
E. Mullek, Acting Maintenance Manager
S. Stevens, Radiation Protection Superintendent
R. Tambori, ALARA Supervisor
M. Tesoriero, System Engineering Manager
M. Troy, Quality Assurance Manager
R. Walpole, Regulatory Assurance Manager

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATEDOpened/Closed

05000286/2015002-01	NCV	Inadequate Corrective Action for Main Steam Safety Valve 46-3 Failure to Lift at Required Setpoint (Section 1R22)
05000286/2015002-02	NCV	Failure to Maintain the Effectiveness of Emergency Plan Due to an Inadequate Basis for Emergency Action Level Thresholds (Section 4OA2)
05000286/2015002-03	NCV	Incomplete 50.73 Report Associated with Failures of Main Steam Safety Valves (Section 4OA3)

Closed

05000286/2015-001-00	LER	Safety System Functional Failure Due to Inoperable Refueling Water Storage Tank Level Alarms Due to Freezing of the Level Instrument Sensing Lines Caused by a Failed Strip Heater (Section 4OA3)
05000286/2015-002-00	LER	Technical Specification Prohibited Condition Caused by Three Main Steam Safety Valves Outside Their As-Found Lift Set Point Test Acceptance Criteria (Section 4OA3)
05000286/2015-002-01	LER	Technical Specification Prohibited Condition Caused by Four Main Steam Safety Valves Outside Their As-Found Lift Set Point Test Acceptance Criteria (Section 4OA3)

LIST OF DOCUMENTS REVIEWED**Common Documents Used**

Indian Point Unit 2(3), Updated Final Safety Analysis Report(s)
 Indian Point Unit 2(3), Technical Specifications and Bases
 Indian Point Unit 2(3), Technical Requirements Manual(s)
 Control Room Narrative Logs
 Indian Point Plan of the Day

Section 1R01: Adverse Weather ProtectionProcedures

OAP-048, Seasonal Weather Preparation, Revision 14

Condition Reports (CR-IP2-)
2015-1604

Section 1R04: Equipment Alignment

Procedures

COL-EL-6, Appendix "R" Diesel Generator – Unit 3, Revision 10
2-COL-27.6, Unit 2 Appendix R Diesel Generator, Revision 2
2-COL-29.6.1, City Water, Revision 19
3-SOP-CVCS-8, Boric Acid System Operation, Revision 35
3-ONOP-CVCS-3, Emergency Boration, Revision 14

Condition Reports (CR-IP3-)

2014-01244 2014-02070 2014-02108 2014-03030 2014-03085 2014-03200
2015-01405 2015-02869

Maintenance Orders/Work Orders

00393278

Drawings

Drawing 9321-F-21203, Unit 3 Appendix R 6.9 kV EDG Lube Oil System
Drawing 9321-F-21213, Unit 3 Appendix R 6.9 kV EDG Fuel Oil System
Drawing 9321-F-21223, Unit 3 Appendix R Jacket Water System
Drawing 9321-F-21233, Unit 3 Appendix R EDG Starting Air System
Drawing 9321-F-33853, Electrical Distribution & Transmission System
Drawing 9321-F-52743, Unit 3 Primary Auxiliary Building Restraint & Support Design Lines 221,
223, 229
Drawing 9321-F-27363, Unit 3 Flow Diagram Chemical & Volume Control System

Miscellaneous

System Description 3.0 Chemical and Volume Control System, Revision 7

Section 1R05: Fire Protection

Condition Reports (CR-IP3-)

2015-02655

Miscellaneous

PFP-160A, Unit 2 Appendix R/SBO EDG – Unit 1 Turbine Building
PFP-356, Lower Electrical Penetration Area
PFP-388, SW Back-up Pumps / Appendix R Diesel / Gas Turbine Switchgear

Section 1R07: Heat Sink Performance

Procedures

SEP-SW-001, IPEC NRC GL 89-13 SW Program, 32 EDG, Revision 6

Condition Reports (CR-IP3-)

2015-02848

Section 1R11: Licensed Operator Requalification Program

Procedures

3-POP-3.1, Plant Shutdown from 45 Percent Power
3-AOP-VAC-1, Loss of Condenser Vacuum, Revision 8
EN-OP-115, Conduct of Operations, Revision 15

Section 1R12: Maintenance Effectiveness

Condition Reports (CR-IP2-)

2014-04358 2014-04905 2014-04911 2014-04913 2014-05147 2014-05955
2014-06378

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

2-SOP-27.3.1.2, 22 Emergency Diesel Generator Manual Operation, Revision 26
2-PT-Q028A, 21 Residual Heat Removal Pump, Revision 21

Condition Reports (CR-IP2-)

2015-02139 2015-02620

Condition Reports (CR-IP3-)

2015-03404

Section 1R18: Plant Modifications

Condition Reports (CR-IP3-)

2015-02771

Maintenance Orders/Work Orders

00412868

Section 1R19: Post-Maintenance Testing

Procedures

2-PT-Q029B, 22 Safety Injection Pump, Revision 20
3-PT-M079C, 33 EDG Functional Test, Revision 53
3-TAP-001-EDG, Removal and Installation of Service Water Drain Line on Emergency Diesel
Generator Jacket Water Heat Exchangers, Revision 3

Condition Reports (CR-IP2-)

2015-01790 2015-02612

Condition Reports (CR-IP3-)

2015-03323 2015-03324

Maintenance Orders/Work Orders

52604320-01 00375805-01 00387943-01 00300848-02 52481432

Section 1R22: Surveillance TestingProcedures and Records

3-PT-Q120B, 32 ABFP (Turbine Driven) Surveillance and IST, Revision 25
 3-PT-Q101A, PCV-1310A and PCV-1310B Nitrogen Supply, Revision 2
 3-PT-R090D, Local Operation of 31 and 33 ABFPs, Revision 15
 EN-HU-106, Procedure and Work Instruction Use and Adherence, Revision 3
 3-PT-R006A, Main Steam Safety Valves Setting Test Using Set Pressure Verification Device,
 Revision 10 (test performed March 1, 2013)
 3-PT-R006A, Main Steam Safety Valves Setting Test Using Set Pressure Verification Device,
 Revision 12 (tests performed on February 27, 2015 and March 22, 2015)
 ASME O&M Code – 2011, Section I-1320
 TS 3.7.1

Condition Reports (CR-IP3-)

2015-03700	2015-00898	2013-00869	2015-02128
2015-03427			

Section 2RS1: Radiological Hazard Assessment and Exposure ControlsProcedures

EN-RP-101, Access Control for Radiologically Controlled Areas, Revision 11
 EN-RP-108, Radiation Protection Posting, Revision 15
 EN-RP-106, Radiological Survey Documentation, Revision 5

Section 2RS2: Occupational ALARA Planning and ControlsMiscellaneous

Indian Point Unit 3 3R18 Outage Report

Section 4OA1: Performance Indicator VerificationProcedures

EN-LI-114, Performance Indicator Process, Revision 6

Condition Reports (CR-IP3-)

2014-01903

Miscellaneous

PI Calculation Data, First Quarter 2014–First Quarter 2015

Section 4OA2: Problem Identification and ResolutionProcedures

EN-LI-102, Corrective Action Program, Revision 24
 EN-LI-102-02, CR Closeout Review, Revision 9
 OAP-048, Seasonal Weather Preparation, Revision 14

Condition Reports (CR-)

IP2-2012-00274	IP2-2013-00398	IP3-2013-00342	IP2-2014-00321
IP2-2014-02564	IP2-2014-03739	IP2-2014-04898	IP3-2015-00084
WT-WTHQN-2013-00024			

Miscellaneous

Apparent Cause Evaluation, Elevated Ground Water Tritium Activity Post 2R21
Conceptual Model of the Unsaturated and Saturated Zones in and Around the Units 1 and 2
Areas

Con Ed Co Fuel Storage Building Drawings A200180, A200181, and A200199

Ground Water Kepner-Tregoe (KT) Analysis to Determine Source, Revision 5

Holtech Drawing 397, IPU2 Pool Layout, Spent Fuel Storage Racks, Revision 4

Input to modeling studies indicating technical information sources from previous investigations

IP2 – Spent Fuel Pit Cask Pit Visual Examination Final Report WDI-PJF-1314061-FSR-001

LPI, Inc. Conceptual Design to Utilize Recovery Well RW-1 for Mitigation of Groundwater
Contamination – Indian Point Unit 2

Long-Term Groundwater Monitoring Program Data Showing the Vertical and Horizontal
Distributions of H-3 and Sr-90 on Site

Monitoring Well Transducer Data to Show Water Table Fluctuations and Gradients Prior to,
During, and Following the March 2014 Releases

MPR Report 0258-4133-01, dated December 4, 2014

Remediation Strategies and Methods if H-3 Is to Be Extracted and Modeling Results for the
1 Gpm and 2 Gpm Pumping Scenarios

Spent Fuel Pool Construction Records for the 1968–1969 Period

WesDyne Visual Procedure WDI-STD-088, Revision 11

3-Dimensional Portrayals of Subsurface Pathways in and Around MW-30, 31, and 32 and
Subsurface Drains Showing Perched-Water Elevations and Relationship to Bedrock

Section 40A3: Follow Up of Events and Notices of Enforcement Discretion

LER 05000286/2015-001-00: Safety System Functional Failure Due to Inoperable Refueling
Water Storage Tank Level Alarms Due to Freezing of the Level instrument Sensing Lines
Caused by a Failed Strip Heater

LERs 05000286/2015-002-00 and 2015-002-01: "Technical Specification Prohibited Condition
Caused by Three [Four] Main Steam Safety Valves Outside Their As-Found Lift Set Point Test
Acceptance Criteria."

LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ABFP	auxiliary boiler feedwater pump
ALARA	as low as is reasonably achievable
CAP	corrective action program
CR	condition report
CST	condensate storage tank
DG	diesel generator
EAL	emergency action level
EDG	emergency diesel generator
EN	event notification
HRA	high radiation area
IMC	Inspection Manual Chapter
IST	inservice testing
LER	licensee event report
LOCA	loss-of-coolant accident
MSSV	main steam safety valve
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission, U.S.
PAR	protective action recommendation
PFP	pre-fire plan
PI	performance indicator
psig	pounds per square inch gauge
PWST	primary water storage tank
RCS	reactor coolant system
RHR	residual heat removal
RWST	reactor water storage tank
SCFM	standard cubic feet per minute
SSC	structure, system, and component
SW	service water
TS	technical specification
UE	unusual event
UFSAR	updated final safety evaluation report
VHRA	very high radiation area
WO	work order