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

August 10, 2010

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 3 – NRC INTEGRATED INSPECTION REPORT 05000286/2010003

Dear Mr. Pollock:

On June 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 3. The enclosed integrated inspection report documents the inspection results, which were discussed on July 14, 2010, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, this report documents two NRC-identified findings of very low safety significance (Green). One finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because the issue was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the NCV, 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 1; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Indian Point Nuclear Generating Unit 3. 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 Resident Inspector at Indian Point Nuclear Generating Unit 3.

In accordance with Title 10 of the Code of Federal Regulations Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly

Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

Mel Gray, Chief
Projects Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000286/2010003
w/ Attachment: Supplemental Information

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Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Mel Gray, Chief
Projects Branch 2
Division of Reactor Projects

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w/ Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-286
License No.:	DPR-26
Report No.:	05000286/2010003
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	Indian Point Nuclear Generating Unit 3
Location:	450 Broadway, GSB Buchanan, NY 10511-0249
Dates:	April 1, 2010 through June 30, 2010
Inspectors:	P. Cataldo, Senior Resident Inspector - Indian Point 3 M. Halter, Resident Inspector – Indian Point 3 F. Arner, Senior Reactor Inspector – Region 1 D. Caron, Senior Security Specialist – Region 1 K. Young, Senior Reactor Inspector – Region 1 D. Molteni, Operations Engineer – Region 1 J. Noggle, Senior Health Physicist – Region 1 M. Patel, Reactor Inspector – Region 1
Approved By:	Mel Gray, Chief Projects Branch 2 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000286/2010003; 4/1/10 – 6/30/10; Indian Point Nuclear Generating (Indian Point) Unit 3; Event Follow-up.

This report covered a three-month period of inspection by resident and region-based inspectors. Two findings of very low significance (Green) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." The cross-cutting aspect for each finding was determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the significance determination process (SDP) does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Mitigating Systems

- Green. An NRC-identified finding of very low safety significance was identified because Entergy personnel did not implement procedural requirements for component classification. Specifically, Entergy staff did not classify the N-38 neutron detector as a high critical component, contrary to the guidance provided in EN-DC-153, "Preventative Maintenance (PM) Component Classification." As a result, N-38 was not included in the site power supply PM program in 2008 which contributed to the detector's low voltage power supply (LVPS) failure on September 15, 2009, due to age-related degradation, causing a safety system functional failure of N-38. The issue was entered into Entergy's corrective action program. The LVPS was replaced, an extent of condition was performed, and N-38 and other remote shutdown instrumentation were appropriately classified as high critical for preventative maintenance in accordance with site procedures.

  The finding is more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the age-related failure of the power supply resulted in N-38 being inoperable for a period of time. A Region I Senior Reactor Analyst (SRA) evaluated the significance of the finding using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and qualitatively determined that the finding screened as very low safety significance (Green) because it only affected the ability to reach and maintain cold shutdown conditions.

  The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance within the Decision Making component because Entergy personnel did not make safety-significant decisions using a systematic process, to ensure safety was maintained, including obtaining interdisciplinary input and reviews on safety significant decisions. Specifically, Entergy staff did not incorporate the procedural direction within EN-DC-153 to classify N-38 as a high-critical component. [H.1(a) per IMC 0310] (Section 4OA3.1.a).

- Green. An NRC-identified NCV of very low safety significance of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified because Entergy personnel did not perform an adequate operability evaluation in accordance with procedure EN-OP-104, "Operability Determination Process." Specifically, Entergy personnel did not incorporate interdisciplinary input and adequate technical information to ensure the continued operability of the neutron detector N-38 when testing and subsequent troubleshooting indicated that the N-38 LVPS was degraded on September 24, 2009. As a result, N-38 was not declared inoperable until October 14, 2009, when Entergy personnel recognized that the LVPS had failed and took action to replace the LVPS. Entergy staff performed a past operability evaluation and determined that N-38 was inoperable since September 15, 2009. Entergy personnel entered this issue into their corrective action program. Corrective actions planned include providing neutron detector system training to maintenance and engineering, revising procedural requirements for identifying and correcting potential neutron detector performance issues and revising LER 2009-009 to report the additional N-38 inoperability identified during the past operability review.

  The finding is more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because N-38 was inappropriately determined to be operable on September 24, 2009, N-38 accrued an additional 21 days of inoperability, during which time it was unable to perform its safety function. A Region I SRA evaluated the significance of the finding using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and qualitatively determined that the finding screened as very low safety significance (Green) because it only affected the ability to reach and maintain cold shutdown conditions.

  The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance within the Decision Making component because Entergy staff did not make safety-significant decisions using a systematic process, especially when faced with uncertain plant conditions, to ensure safety was maintained. Specifically, Entergy staff did not fully incorporate engineering, maintenance, and vendor input to fully evaluate and properly ascertain the operability of N-38 when instrument performance anomalies were identified in September 2009. [H.1(a) per IMC 0310] (Section 4OA3.1.b)

REPORT DETAILS

Summary of Plant Status

Indian Point Unit 3 operated at or near full power during the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 - 2 samples)

.1 Summer Readiness of Offsite and Alternate AC Power Systems

a. Inspection Scope

The inspectors performed a detailed review of the station's onsite and offsite AC (alternating current) power systems, and onsite alternate AC power system readiness. This review included a walkdown to observe the material condition of the offsite Buchanan switchyard, as well as onsite 138kV switchyard areas and components. The inspectors reviewed Entergy's response to 345kV grid disturbances that occurred on April 21, May 6, and June 12, to verify appropriate interface and protocols between Entergy staff and the offsite power transmission system operators. The inspectors reviewed the most recent revision to IP-SMM-OP-105, "Offsite Power Continuous Monitoring and Notification," to evaluate changes since the last revision, and to verify the procedure contained appropriate measures to monitor and maintain availability and reliability of both the offsite AC power systems and the onsite alternate AC power systems. The inspectors reviewed completed and outstanding work orders for the AC power systems and components, assessed the adequacy of corrective actions for identified, degraded conditions, and observed the performance of 138kV planned maintenance associated with bus-tie (BT) breaker BT-5-6. The inspectors reviewed a completed monthly inspection of the onsite 138kV switchyards, which included BT-4-5 and BT-5-6 breakers, and evaluated the associated increased risk impacts of emergent work conducted by ConEd on the 345kV output feeder ring breaker on June 2. Additional documents that were reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Hot Weather Preparations

Using procedure OAP-048, "Seasonal Weather Preparation," and the Updated Final Safety Analysis Report (UFSAR) as a reference, the inspectors reviewed Entergy's preparations for hot weather and performed walkdowns of plant areas during the week of June 7. As part of the walkdown, the inspectors evaluated the impact of identified deficiencies, assessed local area temperatures, as well as the operability of ventilation

and air conditioning systems to ensure that the plant was prepared for warm weather conditions. The inspectors focused on the auxiliary boiler feed pump room, the emergency diesel generator (EDG) room ventilation systems, the intake structure ventilation systems, and the condensate polisher building.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

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

a. Inspection Scope

The inspectors performed partial system walkdowns to inspect Entergy staff's performance in maintaining the proper equipment alignment of redundant or diverse trains and components during periods of system train unavailability, and where applicable, following return to service after maintenance. The inspectors referenced system procedures, the UFSAR, and system drawings to verify that the alignment of the applicable system or component supported its required safety functions. The inspectors also reviewed applicable condition reports (CRs) or work orders (WOs) to ensure Entergy personnel identified and properly addressed equipment deficiencies that could potentially impair the capability of the available train(s). The documents reviewed during this inspection are listed in the Attachment. The inspectors performed partial walkdowns of the following systems or components, which represented three inspection samples:

- 31 and 32 EDGs during 33 EDG outage on April 20;
- 32 and 33 component cooling water (CCW) pumps during 31 CCW pump outage on April 27; and
- 31 and 34 atmospheric dump valves returned to service following 3-PT-Q98D on April 28.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors performed a complete system walkdown of accessible portions of the 480V AC electrical distribution system to identify discrepancies between the existing equipment alignment and the required alignment for the current plant conditions. The inspectors reviewed operating procedures, surveillance tests, equipment lineup check-off lists, and the UFSAR, to determine if the 480V AC distribution system was aligned to perform its required safety functions. The inspectors reviewed a sample of CRs that were written to address deficiencies associated with the 480V AC distribution system,

and verified that these deficiencies were appropriately evaluated and/or resolved. The documents reviewed during this inspection are listed in the Attachment. The walkdown of the 480V AC distribution system represented one inspection sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

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

a. Inspection Scope

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

- PFP 307;
- PFP-308;
- PFP-386; and
- PFP-380.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill (71111.05A – 1 sample)

a. Inspection Scope

On June 2, the inspectors observed an unannounced fire brigade drill that utilized on-watch fire brigade members from the shift operations crew. The drill was conducted in accordance with Entergy's preplanned drill scenario that involved a simulated electrical fire with associated hazards in the vicinity of 36 service water pump, located in the intake structure building. The inspectors evaluated the performance of the fire brigade during the drill, consistent with the pre-planned drill scenario, to verify the following attributes:

- Fire brigade members properly donned protective clothing/turnout gear, which included simulated use of self-contained breather apparatus equipment;

- Fire hose lines were capable of reaching the fire hazard locations, were laid out without flow restrictions, and were simulated being charged with water;
- Brigade members entered the fire area in a controlled manner, and utilized appropriate equipment consistent with the type of fire simulated during the drill;
- Sufficient fire-fighting equipment was brought to the scene by the fire brigade;
- The fire brigade leader's directions during implementation of the pre-fire plans for the designated fire area were thorough, clear and effective;
- Radio communications, as well as face-to-face communications with the plant operators and fire brigade members were efficient and effective, with appropriate consideration of the high noise environment;
- Control room personnel, which for this scenario, included a simulator-based emergency preparedness drill, followed applicable procedures for response to a fire and identified the appropriate Emergency Action Levels and associated notifications consistent with implementing procedures and site Emergency Plan;
- The drill report contained appropriate post-drill critique comments and identified deficiencies consistent with the objectives and acceptance criteria of the drill; and
- Appropriate deficiencies were entered into the corrective action program.

The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 – 2 samples)

.1 Internal Flooding Review

a. Inspection Scope

The inspectors reviewed the Unit 3 Individual Plant Examination, the UFSAR, and IP-RPT-06-00071, "Indian Point Unit 3 Probabilistic Safety Assessment (PSA)," concerning internal flooding events. The inspectors assessed flood mitigation attributes within the auxiliary feedwater (AFW) pump building that are utilized to minimize potential impacts of flooding on the AFW pumps and feedwater control valves. The inspectors also reviewed a surveillance test associated with the fire protection system to verify operators would have indication of system actuation.

b. Findings

No findings of significance were identified.

.2 Manhole 31, 31A and 31B Inspections

a. Inspection Scope

The inspectors evaluated actions by Entergy staff to mitigate the effects of periodic groundwater submergence of safety-related and non-safety-related cables located in Manholes 31, 31A and 31B. This evaluation occurred during performance of the

quarterly manhole cable inspection activities, and verified whether Entergy personnel had appropriate water mitigation strategies, cable inspection and testing, and cable support inspections, to ensure continued operability and functionality of the associated components that are supplied electrical power by the cables that route through this manhole. Additionally, as conditions warrant, the inspectors conducted an independent visual observation of the material condition of cables, associated supports, and cable splices, in all three manholes. Documents reviewed during this inspection are located in the Attachment.

b. Findings

No findings of significance were identified.

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

.1 Quarterly Resident Inspector Evaluation

a. Inspection Scope

On May 4, the inspectors observed licensed-operator requalification training evaluations conducted in the plant-reference simulator, to verify appropriate operator performance, and that evaluators identified and documented crew performance deficiencies, as applicable. The inspectors evaluated the performance of risk significant operator actions, including the use of emergency operation procedures. The inspectors assessed the clarity and the effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operations, and the oversight and direction provided by the control room supervisor.

The inspectors reviewed simulator fidelity to verify correlation with the actual plant control room, and to verify that differences in fidelity that could potentially impact training effectiveness were either identified or appropriately dispositioned. Licensed operator training was evaluated for conformance with the requirements of 10 CFR 55, "Operator Licenses." The documents reviewed during this inspection are listed in the Attachment. This observation of operator evaluations represented one inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors reviewed performance-based problems that involved selected structures, systems, and components (SSCs) to assess the effectiveness of maintenance activities and to verify activities were conducted in accordance with site procedures and 10 CFR 50.65 (The Maintenance Rule). The reviews focused on:

- Evaluation of Maintenance Rule scoping and performance criteria;
- Verification that reliability issues were appropriately characterized;
- Verification of proper system and/or component unavailability;
- Verification that Maintenance Rule (a)(1) and (a)(2) classifications were appropriate;
- Verification that system performance parameters were appropriately trended;
- For SSCs classified as Maintenance Rule (a)(1), that goals and associated corrective actions were adequate and appropriate for the circumstances; and
- Identification of common cause failures.

The inspectors also reviewed system health reports, maintenance backlogs, and Maintenance Rule basis documents. The documents reviewed during this inspection are listed in the Attachment. The following systems and/or components were reviewed and represented two inspection samples:

- 31 EDG unavailability following jacket water pressure switch continuity checks on April 22; and
- Instrument air system.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 5 samples)

a. Inspection Scope

The inspectors reviewed maintenance activities to verify that the appropriate on-line risk assessments were performed prior to removing equipment for work as required by 10 CFR 50.65(a)(4). When planned work scope or schedules were altered to address emergent or unplanned conditions, the inspectors verified that the plant risk was promptly reassessed and managed by station personnel. The documents reviewed during this inspection are listed in the Attachment. The following activities represented five inspection samples:

- 33 EDG outage on April 20;
- 31 CCW maintenance and reactor protection system (RPS) testing on April 26;
- 32 feedwater regulating valve controller replacement on June 8;
- 138kV feeder 33332 outage on June 9-11; and
- 6.9kV relay replacement on June 16.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 6 samples)

a. Inspection Scope

The inspectors reviewed operability evaluations to assess the acceptability of the evaluations, the use and control of compensatory measures when applicable, and compliance with Technical Specifications (TS). These reviews were conducted to verify that operability determinations were performed in accordance with procedure EN-OP-104, "Operability Determinations." The inspectors assessed the technical adequacy of the evaluations to ensure consistency with the UFSAR and associated design and licensing basis documents. The documents reviewed are listed in the Attachment. The following operability evaluations were reviewed and represented six inspection samples:

- CR-IP3-2010-00927, Post-LOCA (loss of coolant accident) vortexing evaluation for recirculation and residual heat removal pumps;
- CR-IP3-2010-1026, 33 containment recirculation fan timer drift identified during surveillance testing;
- CR-IP3-2010-00797, Biodiesel identified in fuel oil storage tanks (FOSTs);
- CR-IP3-2010-01034, Water identified in FOSTs;
- CR-IP3-2010-01110, Failed control rod multiplexing relay; and
- CR-IP3-2010-01269, 32 EDG reverse power trip.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18 - 2 samples)

1. Temporary Modification: Removal of the Unit 3 Fuel Storage Building Exhaust Fan

a. Inspection Scope

The inspectors reviewed the temporary removal of the Unit 3 fuel storage building (FSB) exhaust fan in support of Unit 2 dry cask activities. The inspectors reviewed the temporary modification and associated engineering change (EC)-22678, which required implementation to ensure control room operators would be able to respond to other alarms within the circuit represented by the Unit 3 FSB exhaust fan. The inspectors verified that fan removal activities were conducted in accordance with site procedures, as applicable, including EN-DC-136, "Temporary Modifications." The inspectors also verified that appropriate design interfaces were established during preparation and implementation, and were consistent with the design basis information located in the UFSAR. The inspectors also reviewed the work package that installed this temporary modification, and the associated post-installation effects, including the resultant capability of the alarm circuit.

b. Findings

No findings of significance were identified.

2. Permanent Plant Modification: Replacement of 31 EDG prelube pump thermal overload breakers

a. Inspection Scope

The inspectors reviewed the design documentation associated with the replacement of thermal overload devices for the 31 EDG prelube pump motor, performed under engineering change EC 15524. This change was required due to associated EDG prelube pump motor replacements completed under separate design modifications. The inspectors verified the adequacy of the modification to ensure consistency with the applicable design requirements, and associated calculations, procedures, and drawings. This verification included a review of attributes, such as engineering design change program requirements, and proposed procedure changes that the prelube pump would continue to perform applicable design functions.

During implementation of the modification, the inspectors verified that appropriate configuration and testing controls were utilized, which included lockout/tagout requirements. Following implementation, the inspectors verified that post-modification testing criteria were adequate and that acceptable results were obtained. Additionally, the inspectors verified that applicable maintenance procedures were appropriately revised consistent with the requirements of the modification.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 7 samples)

a. Inspection Scope

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

- 38 service water pump (SWP) replacement on April 3;
- 33 EDG retest following maintenance outage on April 21;
- 31 CCW pump retest following maintenance outage on April 27;
- N-38 power supply replacement on May 6;
- 32 feedwater regulating valve controller replacement on June 8;

- 34 SWP discharge check valve inspection/repair on June 11; and
- 138kV breaker BT 5-6 retest following planned maintenance on June 11.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant structures, systems, and components, to assess whether test results satisfied Technical Specifications, UFSAR, technical requirements manual, and Entergy procedure requirements. The inspectors verified that: test acceptance criteria were sufficiently clear; tests demonstrated operational readiness and were consistent with design basis documentation; test instrumentation had accurate calibrations and appropriate range and accuracy for the application; tests were performed as written; and applicable test prerequisites were satisfied. Following the tests, the inspectors verified whether equipment was capable of performing the required safety functions. The documents reviewed during this inspection are listed in the Attachment. The following surveillance tests were reviewed and represented six inspection samples, which included an in-service testing (IST) surveillance and RCS leak rate review:

- 3-PT-Q100C, Steam Flow/Feedwater Flow Mismatch Functional Test, conducted on April 15;
- 3-PT-SA43, RWST Level Instrument Check and Calibration (Loop 920 A/B), conducted on April 16;
- 3-PT-Q092C, 33 Service Water Pump, conducted on April 27;
- 3-PT-Q126 (IST), Fan Cooler Unit Operational Test, conducted on April 27;
- 3-PT-Q120B, 32 ABFP (Turbine Driven) Surveillance and IST, conducted on May 14; and
- 0-SOP-LEAKRATE-001 (RCS), RCS Leakrate Surveillance, Evaluation and Leak Identification, conducted on June 3.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 – 2 samples)

.1 Emergency Preparedness Drill

a. Inspection Scope

The inspectors evaluated an emergency preparedness drill conducted on June 2. The inspectors observed the drill from initiation in the field (service water pump fire) and in the plant-reference simulator for Unit 3, through technical/operations support center and emergency operations facility (EOF) activation, and subsequent termination of the drill.

The inspectors observed the operating crew in the simulator respond to various, simulated initiating events that ultimately resulted in the activation of the emergency response organization, following the classification of an Alert, and the inspectors verified the adequacy and accuracy of that declaration. Additionally, the inspectors observed that escalating conditions that warranted a subsequent General Emergency declaration, and verified the adequacy and accuracy of that declaration in the EOF. The inspectors verified that the classifications were appropriately credited as opportunities toward NRC performance indicator data. The inspectors also evaluated security aspects introduced into the drill, for example, staff accountability, in response to this event. The inspectors observed the various critique/discussions following termination of the drill, and verified that significant performance deficiencies were appropriately identified and addressed within the critique and the corrective action program. Also, the inspectors reviewed various summaries and information regarding the drill to verify appropriate attributes and objectives of drill performance were captured. This evaluation constituted one inspection sample.

b. Findings

No findings of significance were identified.

.2 Licensed Operator Requalification Simulator Evaluation

a. Inspection Scope

The inspectors evaluated an emergency classification conducted on May 4 during a licensed-operator requalification examination conducted in the plant-reference simulator. The inspectors observed an operating crew respond to simulated initiating events and malfunctions that ultimately resulted in the simulated implementation of the site emergency plan. In particular, the inspectors verified the adequacy and accuracy of the simulated emergency classification by the shift manager of 'Notice of Unusual Event.' The inspectors verified this initial classification was appropriately credited as an opportunity toward NRC performance indicator data. The inspectors observed the management evaluation and training critique following termination of the scenarios, and verified that performance deficiencies were appropriately identified and addressed within the critique and, as applicable, within the corrective action program. Also, the inspectors reviewed the summary performance report for the evaluation and verified that appropriate attributes of drill performance including deficiencies were identified. This evaluation constituted one inspection sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational/Public Radiation Safety (PS)

2RS7 Radiological Environmental Monitoring Program [REMP] (71124.07 – 1 sample)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports, and the results of licensee assessments since the last inspection, to verify that the REMP was implemented in accordance with the plant TS and the off-site dose calculation manual (ODCM). The inspectors reviewed the report for changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations, and reviewed the UFSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation. The inspectors reviewed the annual effluent release report and the 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," report to determine if the licensee was sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

For the on-site portion of this inspection:

- The inspectors walked down air sampling stations and thermoluminescent dosimeter (TLD) monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition.

- For the air samplers and TLDs selected above, the inspectors reviewed the calibration and maintenance records to verify adequate operability of these components. Additionally, the inspectors reviewed the calibration and maintenance records of composite water samplers as available.

- The inspectors reviewed whether Entergy technicians had initiated sampling of other appropriate media upon loss of a required sampling station.

- The inspectors observed the collection and preparation of environmental samples from different environmental media (i.e., surface water, sediment, and air). The inspectors reviewed whether the environmental sampling was representative of the release pathways as specified in the ODCM and that sampling techniques were in accordance with procedures.

- Based on direct observation and review of records, the inspectors reviewed whether meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and licensee procedures. The

inspectors reviewed the meteorological data readout and recording instruments in the control room and at the tower to verify operability.

- The inspectors verified that missed and or anomalous environmental samples were identified and reported in the annual environmental monitoring report. The inspectors reviewed the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection (LLDs). The inspectors reviewed the associated radioactive effluent release data that was the source of the released material.

- The inspectors selected SSCs that involved or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach ground water, to verify that Entergy staff had implemented a sampling and monitoring program sufficient to detect leakage of these SSCs to ground water.

- The inspectors reviewed records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection.

- The inspectors reviewed significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions (3-year average), or modifications to the sampler stations since the last inspection to verify the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment. The inspectors reviewed technical justifications for any changed sampling locations.

- The inspectors reviewed whether the appropriate detection sensitivities with respect to TS/ODCM were used for counting samples (i.e., the samples meet the TS/ODCM required LLDs). The inspector reviewed quality control charts for maintaining radiation measurement instrument status and actions taken for degrading detector performance.

- The inspectors reviewed the results of the licensee's interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by the licensee. The inspectors verified that the interlaboratory comparison test included the media/nuclide mix appropriate for the facility.

- The inspectors reviewed whether problems associated with the REMP are being identified by Entergy staff at an appropriate threshold and were properly addressed for resolution in the Entergy corrective action program. The inspector's review included a selected sample of problems documented by Entergy staff that involved the REMP.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 - 2 samples)

a. Inspection Scope

The inspectors reviewed the performance indicator data listed below, which are associated with the Barrier Integrity and Mitigating Systems cornerstones, respectively. The inspectors used Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," as applicable, as well as associated Entergy procedures to verify individual performance indicator accuracy and completeness. The documents reviewed during this inspection are listed in the Attachment.

- Reactor Coolant System Specific Activity (April 2009 to March 2010); and
- Safety System Functional Failure (April 2009 to March 2010).

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152 – 2 samples)

.1 Routine Problem Identification and Resolution Program Review

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.2 Annual Sample: Review of a 34 Fan Cooler Unit (FCU) Trip Due to an Electrical Fault

a. Inspection Scope

The inspectors selected CR-IP3-2009-04370 as a problem identification and resolution (PI&R) sample for a detailed follow-up review. CR-IP3-2009-04370 documented the trip

of the 34 FCU on November 5, 2009. Entergy determined that the cause of the trip was an electrical fault located on the "A" phase splice of the 34 FCU motor in the motor termination box. Entergy staff determined the apparent cause of the electrical fault was less than optimal repair of the 34 FCU motor leads in 2007, and ineffective monitoring of the repair. Specifically, increased tension on the "A" phase motor connection due to shortened, inflexible motor leads and poor crimping techniques applied to the "A" phase motor lug barrels caused a high resistance connection to occur as the lug barrel leads pulled off the motor leads. Entergy staff determined this was due to expansion, contraction, and vibration of components inside the motor terminal box. The CR also documented similar failures of the 34 FCU in 2007 (CR-IP3-2007-02826) and the Unit 2, 21 SWP in 2008 (CR-IP2-2008-00414). The licensee enhanced maintenance and inspection practices after the previous 34 FCU motor "C" phase lead failure and the 21 SWP lead failure due to installation of an undersized lug.

The inspectors reviewed Entergy's problem identification threshold, apparent cause analyses, extent of condition reviews, operability determinations, and the prioritization and timeliness of corrective actions. This review was conducted to determine whether Entergy staff was appropriately identifying, characterizing, and correcting problems associated with the identified issues and whether the planned or completed corrective actions were appropriate. Additionally, the inspectors performed walkdowns of a sample of accessible safety-related motor termination boxes to assess if abnormal conditions existed. The inspectors also interviewed plant personnel regarding the identified issues and implemented or planned corrective actions. Specific documents reviewed are listed in the attachment to this report.

b. Findings and Observations

No findings of significance were identified.

The inspectors determined that Entergy personnel properly implemented their corrective action process regarding the initial discovery of the reviewed issue. The CR package was complete and included an apparent cause evaluation, an operability review, extent of condition reviews, use of operating experience, and both implemented and planned corrective actions. Additionally, the inspectors noted that the corrective actions appeared appropriate to minimize the potential of electrical faults for the 34 FCU and other 480V motor leads and splices.

The inspectors determined that corrective actions for the November 5, 2009, 34 FCU trip included adding a new maintenance procedure for installation of electric motor terminations, enhancing current maintenance procedures regarding torque values for cable termination bolting to meet industry standards, enhancement of maintenance personnel training (including refresher training), and ensuring that the proper lugs and crimping tools are available in the warehouse for the cable types used at the site. Entergy staff implemented enhanced monitoring of the 34 FCU motor until it is replaced in March 2011. The enhanced monitoring included resistive imbalance testing with an upgraded test set and thermography inspections. All other Unit 3 FCUs are scheduled to be replaced during upcoming outages. Entergy has scheduled modifications to install infrared inspection windows in motor termination boxes to enhance the ability of maintenance personnel to perform periodic thermography inspections of splice

connections. Additionally, the inspectors determined that Entergy personnel took appropriate corrective actions to evaluate, repair, and test the 34 FCU motor, cabling, and terminations prior to placing it back into service following the November 2009 motor splice failure.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, to identify trends that might indicate the existence of more significant safety issues, as required by Inspection Procedure 71152, "Identification and Resolution of Problems." The inspectors included in this review, repetitive or closely-related issues that may have been documented by Entergy outside of the corrective action program, such as trend reports, performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or corrective action program backlogs. The inspectors also reviewed Entergy's corrective action program database for the first and second quarters of 2010, 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 4OA2.1). The inspectors reviewed Entergy's quarterly trend report for the first quarter of 2010, conducted under LO-IP3LO-2010-00049 within the corrective action program, as well as EN-LI-121, "Entergy Trending Process," to verify that Entergy personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings of significance were identified.

The inspectors evaluated a sample of departments that are required to provide input into the quarterly trend reports, which included maintenance and engineering departments. This review included a sample of issues and events that occurred over the course of the past two quarters to objectively determine whether issues either were appropriately considered or ruled as emerging or adverse trends, and in some cases, verified the appropriate disposition of resolved trends. The inspectors verified that these issues were addressed within the scope of the corrective action program, or through department review and documentation in the quarterly trend report for overall assessment. For example, the inspectors noted that consistent with the onset of additional service water leaks that have occurred over the past several months and the ongoing challenges these service water leaks pose to safety-related and non-safety-related systems, Entergy personnel had appropriately identified "service water leaks" as a monitored trend with ongoing corrective actions to address this long-standing issue. In other cases, the inspectors verified for resolved trends, such as vendor oversight, that applicable success criteria identified to ensure successful resolution of adverse trends had been appropriately dispositioned.

The inspectors noted that improved trending tools and software were under development to aid departmental coordinators in the conduct of trending and assessment of data applicable to their departments.

Additionally, the inspectors noted an apparent increase in the number of breaker failures (failure to close, failure to stay closed, etc.) have occurred, and while a sample review indicated similar causal factors could not be identified, the increase of breaker malfunctions should have warranted a more focused inspection under station adverse rule procedures. In particular, other monitoring programs that compliment the trending process, such as system health and performance indicators, did not identify these breaker malfunctions for further assessment.

The inspectors also observed an apparent increase in the number of human performance negative coaching opportunities station personnel identified in the Engineering area. The inspectors noted that these human performance coaching opportunities have not been recognized by Entergy staff as a specific emerging or adverse trend.

4OA3 Event Follow-Up (71153 – 3 samples)

.1 (Closed) LER 05000286/2009-009-00, Loss of Single Train Neutron Flux Detector N-38 Required for Plant Shutdown Remote from the Control Room Due to a Power Supply Failure.

The inspectors reviewed the licensee event report (LER) submitted by Entergy following the failure of the power supply for neutron detector N-38. The inspectors reviewed the LER and corrective action program documents to evaluate whether performance issues contributed to the inoperability of N-38 and the appropriateness of identified corrective actions. The inspectors identified two findings of very low safety significance as documented below. This LER is closed.

a. Introduction: An NRC-identified finding of very low safety significance (Green) was identified because Entergy personnel did not adequately implement procedural requirements for component classification, in accordance with EN-DC-153, "Preventative Maintenance Component Classification."

Description: On October 14, 2009, operators determined that the low voltage power supply (LVPS) for neutron flux detector N-38 was not able to provide reliable power to the instrument. N-38 was declared inoperable and TS Limiting Condition for Operation (LCO) 3.3.4, Remote Shutdown, condition A was entered. The neutron detector N-38 is a safety-related, wide-range ex-core neutron flux detector and is designed to monitor for possible power excursions. The N-38 source range indication is identified by TS, the Technical Requirements Manual (TRM), and the UFSAR as the only credited source range indication for remote shutdown required by 10 CFR 50 Appendix R. With a failed LVPS, N-38 was inoperable and not able to meet its specified safety function. Entergy personnel submitted LER 2009-009-00 to report a safety system functional failure in accordance with 10 CFR 50.73(a)(2)(v), due to an inability to shutdown the reactor and maintain the reactor shutdown in the event that remote shutdown from outside the control room had been necessary while N-38 was inoperable. On October 15, 2009, Entergy technicians replaced the LVPS and returned N-38 to operable status.

Entergy staff determined that the apparent cause for the failure of the N-38's LVPS was the lack of a recurring preventative maintenance (PM) action to replace the power supplies, because N-38 was neither included in the site's power supply PM program nor the capacitor replacement program. Also, review of work orders by Entergy staff revealed that the N-38 power supply had exceeded its useful operating life span prior to failure. Previously, as a result of reactor trips caused by power supply failures in 2006 and 2007, Entergy personnel implemented corrective actions from CR-IP2-2007-01046 to periodically replace aging power supplies and capacitors in plant components with prioritization placed on single point vulnerability and high critical components. Additionally, a corrective action was generated as part of CR-IP3-2007-01849 to ensure critical electronic component power supplies were identified and included in the PM program. The inspectors noted that the DC power supply and capacitor PM programs were implemented in 2008, in accordance with guidance provided in the Entergy Nuclear South PM template, which prescribed replacement of power supplies for high critical components every 12 years. When the power supply for N-38 failed, Entergy staff estimated it to be greater than 15 years old but the power supply had not previously been replaced.

The inspectors identified that the apparent cause evaluation and LER 2009-009 reported N-38 as a non-critical component. However, the inspectors determined, upon review of Entergy procedure EN-DC-153, N-38 should have been classified as a high critical component and subject to increased PM activities. Specifically, EN-DC-153 Attachment 9.3, requires a component to be classified as "high critical" if a functional failure of the component results in a failure to control a critical safety function, such as capability to shutdown the reactor and maintain it in a shutdown condition. As a result, Entergy staff performed an extent of condition review and re-evaluated their past operability evaluation. The extent of condition review identified that other instrumentation required for alternate safe shutdown was also inappropriately classified per EN-DC-153. Corrective actions were implemented to classify N-38 and other instrumentation required for alternate safe shutdown as high critical components in accordance with EN-DC-153. The past operability review determined that N-38 became inoperable on September 15, 2009 and remained inoperable for a total of 29 days. The issue was entered into Entergy's corrective action program as CR-IP3-2010-00915, CR-IP3-2010-00948, CR-IP3-2010-01433 and CR-IP3-2010-01949.

Analysis: The inspectors determined there was a performance deficiency because Entergy personnel did not implement their procedures to correctly classify the N-38 instrument. The inspectors determined the finding is more than minor because the finding is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because N-38 was inappropriately classified by Entergy staff in 2008, its power supply replacement was not adequately prioritized within the power supply PM program, and thus contributed to the age-related failure of the power supply and associated inoperability of N-38 from September 15 to October 15, 2009.

A Region I Senior Reactor Analyst (SRA) evaluated the significance of the finding using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and qualitatively determined that the finding screened as very low safety significance

(Green). The basis for screening this post-fire safe shutdown finding as Green is that the inoperability of N-38, used for monitoring the condition of the reactor from outside the control room, could be readily compensated for by operators via verification of control rod position (maintenance of shutdown margin) and reactor temperature and pressure (negative temperature/pressure reactivity coefficients) until the operability of N-38 could be restored. This finding is assigned a moderate degradation rating based upon Appendix F, Attachment 2, Table A.2.3 – "Guidance for Ranking an Observed SSD Degradation Finding." Specifically, the SRA concluded that the inoperable N-38 instrument equates to "equipment or tools not staged or located as specified by procedures." This moderate degradation rating screens the finding to Green because it only affects the ability to reach and maintain cold shutdown conditions (Task 1.3.1: Qualitative Screening for All Finding Categories).

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance within the Decision Making component because Entergy personnel did not make safety-significant decisions using a systematic process, to ensure safety was maintained, including obtaining interdisciplinary input and reviews on safety significant decisions. Specifically, Entergy staff did not incorporate the procedural direction within EN-DC-153 to classify N-38 as a high critical component. This cross-cutting aspect represents current performance because Entergy personnel reviewed but did not recognize the misclassification of N-38 during the causal analysis and licensee event report generation and submittal processes following the failure of N-38 in 2009. (H.1(a) per IMC 0310).

Enforcement: Enforcement action does not apply because the performance deficiency did not involve a violation of regulatory requirements. The inspectors determined that the proximate cause of the N-38 safety system functional failure, which Entergy staff determined to be due to a lack of recurring power supply PM, was the failure to correctly classify N-38 as a high critical component in accordance with site procedures. Thus, the performance deficiency involved a failure to meet an internal Entergy standard, rather than a regulatory requirement. Because this issue does not involve a violation of regulatory requirements and is of very low safety significance, it is being treated as an FIN. **(FIN 05000286/2010003-01, Procedural Requirements for N-38 Component Classification for Preventative Maintenance Not Implemented.)**

b. Introduction: An NRC-identified NCV of very low safety significance of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified because Entergy personnel did not perform an adequate operability evaluation in accordance with procedure EN-OP-104, "Operability Determination Process," to ensure the continued operability of neutron detector N-38.

Description: On July 14, 2009, Entergy operators performed procedure 3PT-M100, "Post Accident Monitor Channel Checks," and noted that neutron detector N-38 did not indicate within 10% of current reactor power. Although N-38 met the required channel check acceptance criteria when compared to neutron detector N-39, the procedure directed a full power alignment be performed to align N-38 indicated power to reactor power. CR-IP3-2009-03108 was written to perform the full power alignment per procedure 3-IC-SI-18, which was subsequently performed on September 24, 2009. During the alignment, N-38 indication drifted off-scale high to 151 percent. In performing

the immediate operability determination for N-38, operators declared the intermediate and source range portions of the instrument operable per TS LCO 3.3.4, Remote Shutdown; however, the power range portion of the instrument was declared inoperable per TS LCO 3.3.3, Post Accident Monitoring, and its associated TS action statement was entered.

On October 14, 2009, Entergy personnel determined that the LVPS for neutron detector N-38 was not able to provide reliable power to the instrument, and N-38 was declared inoperable per TS LCO 3.3.4 Condition A. On October 15, 2009, Entergy replaced the LVPS and returned N-38 to operable status.

Neutron detectors N-38 and N-39 are safety-related, wide-range ex-core neutron flux detectors designed to monitor for possible power excursions. The N-38 source range indication is identified by TS, the TRM, and the UFSAR as the only credited source range indication for remote shutdown required by 10 CFR 50 Appendix R. N-39 is an identical neutron flux detector and is credited, along with N-38, for monitoring for possible power excursions during post-accident containment conditions following a loss of coolant accident for steam line break.

The inspectors questioned the technical basis for the operability determination performed by Entergy personnel on September 24, 2009. Upon further review, Entergy staff determined that the operability determination was inadequate and was based on incomplete technical information and deficient training on the neutron detector system. Specifically, upon initially identifying the off-scale high reading during testing on September 24, 2009, maintenance personnel incorrectly assumed that separate power supplies fed the power range, intermediate and source range channels associated with N-38. The inspectors also identified that technicians had determined that the LVPS was degraded on September 28, 2009, during efforts to troubleshoot the off-scale high reading, but this information was not utilized to revise the N-38 operability determination.

Additionally, Entergy personnel had initially determined that a degraded power supply would impact the power range indication first, and would have to subsequently degrade further to impact the source range indication. Based on inspector questioning, Entergy staff subsequently confirmed with the neutron detector system vendor that there is one power supply for all ranges of the detector and more importantly, a degraded power supply adversely impacts performance of all ranges. Entergy personnel performed a past operability determination, which utilized information from the plant computer, and determined that N-38 was inoperable beginning on September 15, 2009. Thus, the past operability review concluded that N-38 was inoperable for 29 days, rather than the 23 hours reported in the LER.

Entergy personnel entered this issue into their corrective action program as CR-IP3-2010-01433. Corrective actions planned include providing vendor-supplied neutron detector system training to maintenance and engineering, revising 3PT-M100 to provide time requirements for performing a full power alignment within 30 days, and revising LER 2009-009 to report the additional N-38 inoperability identified during the past operability review.

Analysis: The inspectors determined there was a performance deficiency because Entergy personnel did not complete an adequate operability determination in accordance with EN-OP-104, when testing and subsequent troubleshooting indicated that the N-38 LVPS power supply was degraded. The inspectors determined the finding is more than minor because the finding is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because N-38 was inappropriately determined to be operable by Entergy personnel on September 24, 2009, neutron detector N-38 accrued an additional 21 days of inoperability during which it was not able to perform its safety function until the LVPS was replaced on October 15, 2009.

A Region I SRA evaluated the significance of the finding using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and qualitatively determined that the finding screened as very low safety significance (Green). The basis for screening this post-fire safe shutdown finding as Green is that the inoperability of N-38, used for monitoring the condition of the reactor from outside the control room, could be readily compensated for by operators via verification of control rod position (maintenance of shutdown margin) and reactor temperature and pressure (negative temperature and pressure reactivity coefficients) until the operability of N-38 could be restored. This finding is assigned a moderate degradation rating based upon Appendix F, Attachment 2, Table A.2.3 – "Guidance for Ranking an Observed SSD Degradation Finding." Specifically, the SRA concluded that the inoperable N-38 instrument equates to "equipment or tools not staged or located as specified by procedures." This moderate degradation rating screens the finding to Green because it only affects the ability to reach and maintain cold shutdown conditions (Task 1.3.1: Qualitative Screening for All Finding Categories).

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance within the Decision Making component because Entergy staff did not make safety-significant decisions using a systematic process, especially when face with uncertain plant conditions, to ensure safety was maintained. This included obtaining interdisciplinary input and reviews on safety-significant decisions. Specifically, Entergy staff did not fully incorporate engineering, maintenance, and vendor input to fully evaluate and properly ascertain the operability of N-38 when instrument performance anomalies were identified in September 2009. (H.1(a) per IMC 0310)

Enforcement: 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions and shall be accomplished in accordance with these instructions and drawings. Entergy procedure EN-OP-104, "Operability Determination Process," Revision 4, provides instructions to Entergy staff to assess the operability of SSCs described in TSs when a degraded or non-conforming condition is identified. EN-OP-104 section 5.4, in part, requires that Entergy staff determine and document an adequate basis to support operability evaluations.

Contrary to the above, on September 24, 2009, Entergy personnel did not perform an adequate operability evaluation in accordance with procedure EN-OP-104, "Operability Determination Process," to ensure the continued operability of neutron detector N-38.

The LVPS associated with N-38 was replaced on October 15, 2009 restoring operability to the detector. Because this finding is of very low safety significance and has been entered into the Entergy's CAP as CR-IP3-2010-01433, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 05000286/2010003-02, Inadequate Operability Evaluation for Neutron Detector N-38 Anomalous Behavior.)**

.2 Turbine 1st Stage Pressure Oscillations from May 14, 2010

a. Inspection Scope

The inspectors evaluated the response of control room personnel following the onset of minor turbine first stage pressure oscillations on May 14. The inspectors evaluated the impact on reactor operations and safety, and reviewed impacted plant parameters, such as turbine pressure, steam generator water level, reactor coolant system temperature, and other turbine control system parameters. The inspectors reviewed relevant plant computer data, discussed the anomaly with plant personnel, and verified that operators responded, as expected. For example, because of the oscillations, the inspectors evaluated the transfer of turbine control systems for positive control of turbine load from the main turbine generator governor to the manual load limiter. The inspectors reviewed (1) the operational decision-making issue plan Entergy personnel utilized to track actions and provide instructions to operators, (2) root cause analysis methods utilized by Entergy to determine the most likely cause of the oscillations, (3) troubleshooting plan, and (4) subsequent corrective actions for resolution, as documented in CR-IP3-2010-01252.

b. Findings

No findings of significance were identified.

.3 32 Reactor Coolant Pump Increased Vibrations

a. Inspection Scope

The inspectors evaluated the response of control room personnel following the onset of increased 32 reactor coolant pump (RCP) vibrations on April 21, 2010, following a 345kV grid disturbance. Subsequently, horizontal shaft vibrations trended in the upward direction until alarm setpoints were reached on June 3, and operators implemented 3-AOP-RCP-1, "Reactor Coolant Pump Malfunction." The inspectors evaluated the impact of increased vibrations on reactor operations, applicable licensing and design bases, and overall reactor safety. The inspectors reviewed all relevant plant computer data, discussed the anomaly with plant personnel, and verified that operators responded, as expected, which included verification of actions in accordance with the abnormal operating procedure (AOP), as well as actions consistent with 3-SOP-RCS-001, "Reactor Coolant Pump Operation." The inspectors evaluated subsequent AOP changes implemented to both minimize unnecessary plant transients should vibration reach a level of 15 mils, and provide clarifying instructions to operators for actions to take at a vibration level of 17 mils. The inspectors reviewed (1) the operational decision-making issue plan Entergy staff utilized to track actions and provide instructions to

operators, (2) the enhanced procedure guidance regarding the AOP and (3) subsequent corrective actions for resolution, as documented in CR-IP3-2010-01527.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 (Closed) EA-09-296, NOV 05000247/2009005 and 05000286/2009005-01, Incomplete Licensed Operator Medical Examinations

a. Inspection Scope

In accordance with Inspection Procedure 92702, the inspectors conducted a follow-up inspection of enforcement action EA-09-296, which was identified due to the submittal of inaccurate medical information for licensed operators by Entergy personnel. The submittals to the NRC were determined to be inaccurate due to incomplete tactile testing conducted by Entergy regarding required licensed operator and initial applicant medical examinations. This issue was documented as a cited violation in inspection reports 05000247/2009005 and 05000286/2009005. The inspectors reviewed the condition reports and analyses developed by Entergy staff to ensure the adequacy of (1) the evaluation of the issue, (2) the evaluation and impact of generic implications, and (3) that corrective actions have been fully implemented.

The inspectors reviewed the scope and depth of the analysis in addressing the identified deficiency. The inspectors also reviewed Entergy's assessment of generic implications of the identified violation on other Entergy facilities and other aspects of licensed operator medical examinations. The inspectors evaluated the corrective actions implemented by Entergy personnel to determine whether they were adequate to address the identified deficiency and prevent recurrence. Additionally, the inspectors evaluated Entergy's determination of why appropriate action was not taken in response to IN 2004-20, "Recent Issues Associated with NRC Medical Requirements for Licensed Operators," to identify that appropriate tactile testing was not being conducted. The inspectors reviewed Entergy's identified causes and the actions taken to prevent recurrence of those causes.

b. Findings

No findings of significance were identified.

The inspectors determined that the scope and depth of the analysis to address the identified deficiency was adequate and appropriate. The inspectors also determined that the generic implications identified by the corrective action process were adequate and appropriate. The inspectors concluded that Entergy's corrective actions were both timely and appropriate to address the identified deficiency and generic implications.

The inspectors determined that weaknesses in the Operating Experience Program that were identified as contributing causes in the failure to take appropriate action when IN

2004-20 was issued, were adequately corrected by changes made to the program. These changes were determined to correct the identified cause and prevent recurrence.

4OA6 Meetings, including Exit

Exit Meeting Summary

On July 14, 2010, the inspectors presented the integrated inspection results to Mr. Joseph Pollock and other Entergy managers and staff, who acknowledged the inspection results. Entergy staff identified documents, which were to be considered proprietary and handled as such.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

J. Pollock	Site Vice President
M. Burney	Licensing Specialist
R. Burroni	Systems Engineering Manager
P. Conroy	Director, Nuclear Safety Assurance
T. Cole	Project Manager - NUC
G. Dahl	Licensing Specialist
K. Davison	Assistant General Manager, Plant Operations
J. Dinelli	Manager, Operations
C. Ingrassia	System Engineer
L. Lubrano	System Engineer
S. Manzione	Component Engineering Supervisor
T. McCaffrey	Design Engineering Manager
T. Orlando	Director, Engineering
J. Reynolds	CA&A Technical Specialist
S. Sandike	Senior HP/Chemical Specialist
B. Sullivan	Emergency Planning Manager
M. Tesoriero	Programs and Component Engineering Manager
J. Timone	Component Engineer
A. Vitale	General Manager, Plant Operations
R. Walpole	Manager, Licensing
A. Williams	Manager, Planning, Scheduling and Outage

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Closed

05000286/2009009-00	LER	Loss of Single Train Neutron Flux Detector N-38 Required for Plant Shutdown Remote from the Control Room Due to a Power Supply Failure
05000286/2009005-01	NOV	Incomplete Licensed Operator Medical Examinations

Opened and Closed

05000286/2010003-01	FIN	Procedural Requirements for N-38 Component Classification for Preventative Maintenance Not Implemented
05000286/2010003-02	NCV	Inadequate Operability Evaluation for Neutron Detector N-38 Anomalous Behavior

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Preparations

Condition Reports
CR-IP2-2010-04272 CR-IP3-2010-01853 CR-IP3-2009-03789
CR-IP2-2010-03161 CR-IP3-2010-00801 CR-IP2-2009-01723
CR-IP3-2010-01674

Procedures and Miscellaneous Documents
OAP-048, Seasonal Weather Preparation, Rev. 6
3-BKR-008-ELC, 138kV Sulfur Hexaflouride (SF6) Breaker Inspection, Rev. 11
IB-9.8.3-5, ITE Power Circuit Breaker Instruction Manual, Issue A
MOU, Entergy and ConEd, for compliance with NERC Reliability Standard NUC-001

Work Orders
52208265 52255039 52255046 00148453
00148454

Section 1R04: Equipment Alignment

Condition Reports (CR-IP3-)
2009-01449

Procedures
3-COL-EL-001, 6900 and 480 Volt Distribution, Rev. 43

Section 1R05: Fire Protection

Pre Fire Plan
PFP-386, LCI/CW Pump Power Building, Rev. 5
PFP-307, General Floor Plan – Primary Auxiliary Building 55'-0" Elevation, Rev. 5
PFP-308, General Floor Plan – Primary Auxiliary Building 72'-0" Elevation, Rev. 5
PFP-385, Circulating & Service Water Pump Building Pre-Fire Plan, Rev. 3

Miscellaneous Documents
CR-IP3-2010-01535
EN-TQ-125, Fire Brigade Drills, Rev. 1

Section 1R06: Flood Protection Measures

Miscellaneous Documents
CR-IP3-2010-01554
WO 52242708 WO 5222709 WO5222710

Section 1R11: Licensed Operator Requalification

Procedures
TQF-210-DD03, LOR Simulator Crew Performance Evaluation Report, Rev. 0

Other
IPEC Simulator Evaluated Scenario, dated April 21, 2010

Section 1R12: Maintenance Effectiveness

Procedures
3-SOP-IA-001, Instrument Air System Operation, Rev. 24
EN-DC-205, Maintenance Rule Monitoring, Rev. 2
EN-DC-206, Maintenance Rule (A)(1) Process, Rev. 1
EN-WM-104, On Line Risk Assessments, Rev. 1

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2009-03154	2009-03756	2009-03996	2009-04471
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Work Orders
230149

Other
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Section 1R13: Maintenance Risk Assessment and Emergent Work Control

Procedures
EN-WM-104, On Line Risk Assessment, Rev. 1
3-SOP-FW-001, Main Feedwater System Operation, Rev. 54

Condition Reports
CR-IP3-2010-00475

Work Orders
51803829 51803830

Drawings
617F643, 6900V One Line Diagram, Rev. 10

Section 1R15: Operability Evaluations

Procedures
3-ES-1.3, Transfer to Cold Leg Recirculation, Rev. 3
3-ES-1.3 DEV, Transfer to Cold Leg Recirculation, Rev. 0

Completed Procedures
0-CY-1560, Sampling and Adding Chemicals to Diesel Fuel Oil Storage Tanks, 1/20/10
0-CY-1560, Sampling and Adding Chemicals to Diesel Fuel Oil Storage Tanks, 2/19/10
0-CY-1560, Sampling and Adding Chemicals to Diesel Fuel Oil Storage Tanks, 3/15/10
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0-CY-1560, Sampling and Adding Chemicals to Diesel Fuel Oil Storage Tanks, 5/21/10
3-PT-OL3B12, Containment Recirculation Fan #33 Load Sequencer Calibration, Rev. 3, 4/22/10

Condition Reports(CR-IP3)
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Work Orders
00235566

Other
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IP-DSE-99-110, Evaluation for Water Found in 32 EDG Fuel Oil Storage Tank, dated 9/14/99
IP-CHM-99-094 MC, Water Removal From 32 EDG Fuel Oil Storage Tank, dated 9/10/99
IP-CHM-00-087 MC, Water Intrusion 32 EDG Fuel Oil Storage Tank, dated 8/31/99

Section 1R18: Plant Modifications

Procedures
EN-DC-136, Temporary Modifications, Rev. 5
EN-LI-100, Process Applicability Determination, Rev. 9

EN-LI-101, 10 CFR 50.59 Evaluations, Rev. 6
3-ARP-014, Panel SLF – Weld Channel, Rev. 21

Condition Reports
2010-00917

Work Orders
00231779 236952

Other
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ECN 21213, Replace Thermal Overload in New 32 EDG Pre-Lube Oil Pump Motor
EC-22678, Clear U3 CCR Panel SLF Common Alarm Window 2-7 Indication While FSB Exhaust Fan Replacement is in Progress
IP3-DBD-320, Area Radiation Monitoring System, Rev. 2
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Calculations
IP3-TORE-EDG-32-PRE-LUBE, DG 32 Lube Oil Priming Pump Motor Continuous Motors Thermal Overload Relay Evaluation, Rev. 0

Section 1R19: Post-Maintenance Testing

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3-PT-Q97, Steam Generator Level Analog Functional, dated 6/8/10
3-SOP-FW-001, Main Feedwater System Operation, dated 6/8/10
0-SYS-409-GEN, Belzona and Enecon Metal Repair Applications, Rev. 1
VLV-023-GEN, The Inspection and Repair of Crane 14" Swing Check Valves, Rev. 5
3-PT-Q092D, 34 Service Water Pump, Rev. 14
3-GNR-021-ELC, Emergency Diesel Generator 4-Year Inspection, Rev. 6
0-GNR-403-ELC, Emergency Diesel Generator Quarterly Inspection, Rev. 2
3-FIR-005-FIR, Inspection, Cleaning and Preventive Maintenance of IP3 Fire and Smoke Dampers, Rev. 10
0-HTX-405-EDG, EDG Lube Oil and Jacket Water Heat Exchanger Maintenance, Rev. 0
3-PT-M079C, 33 EDG Functional Test, Rev. 39
3-SOP-EL-001, Diesel Generator Operation, Rev. 42
3-PT-Q088, Component Cooling Pumps, Rev. 17
3-PMP-003-CCW, Inspection/Repair of the Component Cooling Pump, Rev. 2
MTR-002-SWS, Backup Service Water Pump Motor Inspection and Overhaul, Rev. 5

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Work Orders

0217447	52026411	52032955	52234590	00233027	52230102
52234588	52232939	52232938	52233055	52250189	52210145
52201617	52201616				

Section 1R22: Surveillance Testing

Procedures
0-SOP-LEAKRATE-001, RCS Leakrate Surveillance, Evaluation and Leak Identification, Rev. 1, dated 6/3/10
3-PT-Q136, Steam Generator Bypass Feedwater Line Isolation Valves (BFD-MOV-90-1, -2, -3 & -4) Timing, Rev. 2
0-VLV-421-MOV, Motor Operated Valve Major Preventive Maintenance, Rev. 4
3-PT-Q120B, 32 ABFP (Turbine Driven) Surveillance and IST, Rev. 15

Condition Reports(CR-IP3)
2010-01552 2010-00988 2010-00968 2010-01228 2010-01029

Work Orders
00233750 52234247 52232057

Section 1EP6: Drill Evaluation

Procedures
Radiological Emergency Data Form, Part 1

Miscellaneous
CR-IP3-2010-01542

Section 2RS7: Radiological Environmental Monitoring Program [REMP]

Procedures
2008 Indian Point Energy Center Annual Radioactive Effluent Release Report
2009 Indian Point Energy Center Annual Radioactive Effluent Release Report
2008 Indian Point Energy Center Annual Radiological Environmental Operating Report
2009 Indian Point Energy Center Annual Radiological Environmental Operating Report
Quality Assurance Audit Report No. QA-02-06-2009-IP-1
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CR-IP2-2010-0970	CR-IP2-2010-0943	CR-IP2-2009-3663	CR-IP2-2009-3045
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Section 4OA1: Performance Indicator Verification

Procedures
EN-LI-114, Performance Indicator Process, Rev. 4
0-CY-2310, Reactor Coolant System Specifications and Frequencies, Rev. 13
3-CY-2335, Determination of Dissolved Hydrogen, Total Gas and Specific Activities in Reactor Coolant, Rev. 2
3-SOP-SS-001, Operation of the Primary Sampling System, Rev. 19

Completed Procedures
EN-LI-114, Performance Indicator Process– Safety System Functional Failures, 7/14/09
EN-LI-114, Performance Indicator Process– Safety System Functional Failures, 10/13/09
EN-LI-114, Performance Indicator Process– Safety System Functional Failures, 1/05/10
EN-LI-114, Performance Indicator Process– Safety System Functional Failures, 4/06/10
EN-LI-114, Performance Indicator Process– Reactor Coolant Specific Activity, 7/07/09
EN-LI-114, Performance Indicator Process– Reactor Coolant Specific Activity, 10/01/09
EN-LI-114, Performance Indicator Process– Reactor Coolant Specific Activity, 1/04/10
EN-LI-114, Performance Indicator Process– Reactor Coolant Specific Activity, 4/05/10

Section 4OA2: Identification and Resolution of Problems

Condition Reports (CR-)

IP2-2008-00414	IP2-2009-05205	IP3-2007-02826	IP3-2009-04803
IP3-2009-04370	IP3-2009-04394	IP3-2009-04671	IP3-2009-04859
IP3-2010-01868*			

* CR initiated as a result of this inspection.

Completed Surveillance Procedures
EN-MA-134, Offline Motor Electrical Testing, Completed 11/6/09, Rev. 0
3-BKR-017, Current Sensor and/or Trip Unit Replacement, Setting and Testing, Completed 11/7/09, Rev. 8
3-ELC-002-TER, 480 Volt E.Q. Motor Terminations, Completed 11/6/09, Rev. 12

Drawings
617F644, 480V One Line Diagram, Rev. 32

Engineering Change
EC-12662, Initiate Mod. to Install Infrared Inspection Windows on Condensate Pump, HDP, SWP, FCU (U3), and CWP Motor Terminal Boxes
EC-20416, Perform Equivalent EC to Support Rev. of Engineering Standard ENN-EE-S-007-IP to Address Installation of Infrared Inspection Windows on Motor Termination Box Covers

Miscellaneous
Baker Test Summary Log for the 34 FCU, Completed 6/8/10
EMF-EWS-01, Electrical Workmanship Standards (Maintenance Training), Rev. 1
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IEEE Std. 1415 - 2006, Guide for Induction Machinery Maintenance Testing and Failure
Unit Reliability Team Commitment List 2009, 6/22/10
Unit 2 and Unit 3 Infrared Inspection Window Modification Schedule

Procedures
EN-LI-102, Corrective Action Process, Rev. 15
EN-LI-119, Apparent Cause Evaluation (ACE) Process, Rev. 11
ENN-EE-S-008-IP, Electrical Cable Installation Standard, Rev. 6
PFM-100, Infrared Thermography Program, Rev. 4
PFM-100A, Thermography for Electrical Equipment, Rev. 3
0-ELC-401-TER, 6.9 KV Motor Terminating Procedure, Rev. 2

0-ELC-411-TER, Spliced and Bolted In-Line Connections and Cable Jacket Repairs Using Raychem/Tyco Heat Shrink, Rev. 4
0-ELC-425-TER, Installation of Electric Motor Terminations, Rev. 3
3-ELC-002-TER, 480 Volt E.Q. Motor Terminations, Rev. 13

System Health Reports
1st Quarter 2010, Unit 3 – VC/HVAC
1st Quarter 2010, Large Motors

Preventive Maintenance Change Requests
89536

Work Orders

213986	217614	218094	218095	51487692

Work Requests

183264	183266	183270

Section 4OA3: Event Follow-up

Condition Reports

CR-IP3-2007-01514	CR-IP3-2007-01849	CR-IP3-2007-04493
CR-IP3-2009-03108	CR-IP3-2009-03904	CR-IP3-2009-04084
CR-IP3-2009-04123	CR-IP3-2010-00915	CR-IP3-2010-00440
CR-IP3-2010-00746	CR-IP3-2010-00948	CR-IP3-2010-01004
CR-IP3-2010-01433	CR-IP3-2010-01949	IP2-2007-01046
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Procedures
EN-LI-119, Apparent Cause Evaluation Process, Rev. 10
3-PT-M100, Monthly Post Accident Monitor Channel Checks, Rev. 9
EN-DC-153, Preventative Maintenance Component Classification, Rev. 4
EN-DC-335, PM Basis Template, Rev. 2
3-SOP-RCS-001, Reactor Coolant Pump Operation, Rev. 40
3-AOP-RCP-1, Reactor Coolant Pump Malfunction, Rev. 7
IPEC Power Supply PM's, Rev. 3
3-AOP-SSD-1, Control Room Inaccessibility Safe Shutdown Control, Rev. 8
3-SOP-ESP-001, Local Equipment Operation and Contingency Actions, Rev. 19

Work Orders

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Other
3-AOP-SSD-1 BGD R06, Background Document for 3-AOP-SSD-1, Rev. 6
1146-100000828, Gamma Metrics Neutron Flux Monitor Technical Manual
IPEC 09-028, IPEC OSRC Meeting Minutes, 11/30/09

Section 4OA5: Other Activities

Procedures
EN-NS-112, Medical Program, Rev. 6
EN-NS-112, Medical Program, Rev. 7

Other Documents:
ANSI/ANS 3.4-1983, Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants
NRC Information Notice 2009-21, Incomplete Medical Testing for Licensed Operators
Letter NL-10-022, Indian Point, Units 2 &3, Reply to Notice of Violation ML100750249

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HQN-2009-00955 LO-NOE-2008-00361 LO-NOE-2009-00412
LO-NOE-2009-00427

LIST OF ACRONYMS

AC	Alternating Current
ADAMS	Agency Wide Document Management System
AFW	Auxiliary Feedwater
AOP	Abnormal Operating Procedure
BT	Bus-Tie
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
ConEd	Commonwealth Edison Electric Company
CR	Condition Report
EDG	Emergency Diesel Generator
EOF	Emergency Operations Facility
FCU	Fan Cooler Unit
FIN	Finding
FOST	Fuel Oil Storage Tanks
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IST	In-Service Test
kV	Kilovolt
LCO	Limiting Condition for Operations
LER	Licensee Event Report
LLD	Lower Limit of Detection
LOCA	Loss of Coolant Accident
LVPS	Low Voltage Power Supply
NRC	Nuclear Regulatory Commission
ODCM	Off-Site Dose Calculation Manual
PI&R	Problem Identification and Resolution
PM	Preventative Maintenance
PSA	Probabilistic Safety Assessment
RCS	Reactor Coolant System

RCP	Reactor Coolant Pump
REMP	Radiological Environmental Monitoring Program
RPS	Reactor Protection System
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
SSC	Structures, Systems, and Components
SSD	Safe Shutdown
SWP	Service Water Pump
TLD	Thermoluminescent Dosimeter
TRM	Technical Requirements Manual
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
WO	Word Order