



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

February 5, 2009

EA-08-354

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 05000286/2008005 AND EXERCISE OF
ENFORCEMENT DISCRETION**

Dear Mr. Pollock:

On December 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 3. The enclosed integrated inspection report documents the inspection results, which were discussed on January 8, 2009, with you and other members of your staff.

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

This report documents one self-revealing finding of very low safety significance (Green). This finding was determined to be a violation of NRC requirements. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in the report. However, because the findings are of the very low safety significance and are entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A.1 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 1; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Indian Point Unit 3.

In addition, the inspectors reviewed Licensee Event Report 50-286/2008-001, which described the circumstances associated with a 31 safety injection (SI) pump breaker that did not close on January 27, 2008, during routine operation of the pump. As a result of this breaker problem, the SI pump was inoperable and determined to have exceeded the allowed outage time of 72 hours detailed in technical specification (TS) 3.5.2, and therefore is a violation of TS. A risk evaluation was performed by the regional staff and the issue was determined to be of very low safety significance.

Although this issue constitutes a violation of NRC requirements, the NRC determined that the breaker subcomponent problem that resulted in the inoperability of the SI pump was not within Entergy's ability to foresee and correct, and as a result, the NRC did not identify a performance deficiency associated with this condition. The NRC's assessment considered: (1) the scope of maintenance performed on the SI pump breaker by Entergy was appropriate and up to date, (2) the breaker failure mechanism would not be reasonably identified through routine Entergy processes or quality assurance measures, (3) operating experience information available to Entergy did not identify the potential for the subcomponent problem that was experienced, and (4) Entergy implemented timely and effective corrective actions to prevent recurrence of the issue. Based on the results of the NRC's inspection and assessment, I have been authorized, after consultation with the Director, Office of Enforcement, and the Regional Administrator, to exercise enforcement discretion in accordance with Section VII.B.6 of the Enforcement Policy and refrain from issuing enforcement for this violation (EA-08-354).

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

David C. Lew, Director
Division of Reactor Projects

Docket No. 50-286
License No. DPR-64

Enclosure: Inspection Report No. 05000286/2008005
w/ Attachment: Supplemental Information

cc w/encl:

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Vice President, Operations, Entergy Nuclear Operations
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Senior Manager, Nuclear Safety and Licensing, Entergy Nuclear Operations
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Although this issue constitutes a violation of NRC requirements, the NRC determined that the breaker subcomponent problem that resulted in the inoperability of the SI pump was not within Entergy's ability to foresee and correct, and as a result, the NRC did not identify a performance deficiency associated with this condition. The NRC's assessment considered: (1) the scope of maintenance performed on the SI pump breaker by Entergy was appropriate and up to date, (2) the breaker failure mechanism would not be reasonably identified through routine Entergy processes or quality assurance measures, (3) operating experience information available to Entergy did not identify the potential for the subcomponent problem that was experienced, and (4) Entergy implemented timely and effective corrective actions to prevent recurrence of the issue. Based on the results of the NRC's inspection and assessment, I have been authorized, after consultation with the Director, Office of Enforcement, and the Regional Administrator, to exercise enforcement discretion in accordance with Section VII.B.6 of the Enforcement Policy and refrain from issuing enforcement for this violation (EA-08-354).

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Sincerely,

/RA/ Original Signed By:

David C. Lew, Director
Division of Reactor Projects

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SUNSI Review Complete: __BAB* _____ (Reviewer's Initial)

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Region I

Docket No.: 50-286

License No.: DPR-64

Report No.: 05000286/2008005

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 3

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

Dates: October 1, 2008 through December 31, 2008

Inspectors: P. Cataldo, Senior Resident Inspector, Indian Point 3
A. Koonce, Resident Inspector, Indian Point 3
J. Noggle, Senior Health Physicist, Region I
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Approved By: David C. Lew, Director
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000286/2008-005; 10/01/2008 – 12/31/2008; Indian Point Nuclear Generating Unit 3; Post-Maintenance Testing.

This report covered a three-month period of inspection by resident and region based inspectors. One finding of very low significance (Green) was identified. This finding was also determined to be a non-cited violation (NCV) of NRC requirements. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." 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.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- (Green) A self-revealing, non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" was identified, because Entergy did not establish the appropriate torque requirements and lubricant specifications in plant instructions and procedures during replacement and maintenance of bearings for the 34 control building (CB) exhaust fan. Specifically, between January 2006 and September 2008, Entergy did not establish procedural guidance to ensure proper torque values were used on the 34 CB exhaust fan pillow block bolts to preclude movement of the fan bearings. Additionally, during this time period, Entergy used an incompatible grease to lubricate 34 CB exhaust fan bearings. The incompatible grease and improperly torqued bolts contributed to the 34 CB exhaust fan bearings being replaced in January 2006; June 2008; and in September 2008. Entergy corrected the incompatible grease issue and included vendor-recommended torque values during the most-recent bearing replacement for the 34 CB exhaust fan in September 2008.

The inspectors determined the finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective to ensure reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Entergy did not ensure the reliability of the 34 CB exhaust fan with appropriate instructions that established bolt torques and type of grease. The significance of this finding was evaluated using a Phase 1 SDP screening and was determined to be of very low safety significance (Green) because it was not a design or qualification deficiency; it did not represent a loss of system safety function; and it did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating events.

The finding had a cross-cutting aspect in problem identification and resolution in that Entergy did not thoroughly evaluate problems such that the resolutions addressed the causes when equipment failed on an increased frequency. (P.1(c)) (Section 1R19)

B. Licensee-Identified Violations

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

5
REPORT DETAILS

Summary of Plant Status

Indian Point Nuclear Generating (Indian Point) Unit 3 operated at or near full power throughout the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope (71111.01 - 1 sample)

The inspectors performed a detailed review of Entergy's adverse weather procedure, operating procedures, Technical Specifications (TS), and Corrective Action Program (CAP) to verify applicable cold weather preparations were completed for anticipated adverse winter weather challenges.

The inspectors evaluated Entergy's preparation and readiness for freezing weather conditions, evaluated applicable compensatory measures, and conducted plant and system walkdowns in the auxiliary feedwater building, service water intake structure, and control building. In addition, the inspectors reviewed the status of deficiencies identified by Entergy during the current seasonal preparations, and verified that adverse conditions were adequately addressed to ensure that cold temperatures would not have significant impact on plant operation and safety. The documents reviewed during this inspection are listed in the Attachment. This represented one inspection sample of risk-significant systems.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

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

a. Inspection Scope

The inspectors performed partial system walkdowns to verify the operability of redundant or diverse trains and components during periods of system train unavailability, and where applicable, following return to service after maintenance. The inspectors reviewed system procedures, the Updated Final Safety Analysis Report (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 or work orders to ensure that Entergy had identified and properly addressed equipment deficiencies that could potentially impair the capability of the available train. 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 emergency diesel generator (EDG) while the 32 EDG was out of service on November 4, 2008;
- 31 service water pump following return to service on November 23, 2008; and
- 32 charging pump following return to service on December 22, 2008.

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 containment spray (CS) 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, electrical drawings, equipment lineup check-off lists, and the UFSAR, to determine if the CS system was aligned to perform its required safety functions. The inspectors reviewed a sample of condition reports that were written to address deficiencies associated with the CS 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 CS system represented one inspection sample.

1R05 Fire Protection

.1 Fire Protection Tours (71111.05Q - 4 samples)

a. Inspection Scope

The inspectors conducted tours of fire areas to assess the material condition and operational status of fire protection features. The inspectors verified, consistent with the applicable administrative procedures, that: 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 against the requirements of License Condition 2.K. The documents reviewed during this inspection are listed in the Attachment.

This inspection represented four inspection samples and was conducted in the areas covered by the following Pre-Fire Plans:

- Pre-Fire Plan 354;
- Pre-Fire Plan 354A;
- Pre-Fire Plan 355, 356; and
- Pre-Fire Plan 357, 358.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

On December 9, 2008, 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 the 31 vital battery room located in the control 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:

- The fire brigade members properly donned protective clothing/turnout gear, which included simulated use of self-contained breather apparatus (SCBA) 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 clear and effective;
- Radio communications, as well as face-to-face communications with the plant operators and fire brigade members were clear and effective;
- Control room personnel followed applicable procedures for response to a fire and declared appropriate Emergency Action Levels and associated notifications consistent with the appropriate procedures and the 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
- Deficiencies were entered into the corrective action program.

Documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope (71111.06 – 1 sample)

The inspectors reviewed the Unit 3 Individual Plant Examination, the UFSAR, and IP-RPT-06-00071, "Indian Point Unit 3 Probabilistic Safety Assessment (PSA)," Rev. 2, concerning internal flooding events. The inspectors assessed flood mitigation of the primary auxiliary building (PAB). Specifically, Engineering Change 5000041988, which implemented new flood protection measures by directing water out of the PAB via a new drain pipe and check valve. The inspectors also reviewed applicable portions of 3-AOP-

FLOOD-1, "Flooding," Rev. 4, and verified assumptions included in the site's internal flooding analysis. This inspection represented one sample for internal flood protection measures.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope (71111.07 – 1 sample)

The inspectors evaluated maintenance activities and reviewed performance data associated with the 32 EDG jacket water heat exchanger. The inspectors reviewed applicable design basis information and commitments associated with Entergy's Generic Letter 89-13 program to validate that maintenance activities were adequate to ensure the system could perform its safety function. The inspectors reviewed as-found and as-left results from previous heat exchanger cleanings to ensure the periodicity of maintenance activities were appropriate, and conditions adverse to quality were being identified and corrected. This inspection represented one sample for heat sink performance.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program

.1 Quarterly Resident Inspector Evaluation (71111.11Q - 1 sample)

a. Inspection Scope

The inspectors observed licensed operator requalification training conducted on November 18, 2008, in the Unit 3 plant-reference simulator. The inspectors assessed the scope and breadth of the training, which included the following: (1) discussions with Entergy staff regarding deficiencies in operator performance and/or training being addressed in the current requalification training cycle; (2) assessment of the implementation of abnormal and emergency procedures utilized by Unit 3 control room operators to respond to, and mitigate the effects of, simulated loss of feedwater and uncontrolled cool-down events at the site; (3) technical specification implementation for the specific events simulated during the training; and (4) overall crew performance.

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 against the requirements of 10 CFR 55, "Operator Licenses." Documents reviewed during this inspection are listed in the Attachment. This review represented one inspection sample for licensed operator requalification training.

b. Findings

No findings of significance were identified.

.2 Region-Based Requalification Program Inspection (71111.11B -1 sample)a. Inspection Scope

On November 14, 2008, a region-based inspector conducted an in-office review of results of the licensee-administered annual operating tests and comprehensive written exams for 2008 on Unit 3. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." The inspector verified that:

- Crew failure rate was less than 20%. (Crew failure rate was 0%);
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Individual failure rate was 0%);
- Individual failure rate on the walk-through test was less than or equal to 20%. (Individual failure rate was 0%);
- Individual failure rate on the comprehensive written exam was less than or equal to 20%. (Individual failure rate was 0%); and
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75%. (Overall pass rate was 100%).

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectivenessa. Inspection Scope (71111.12Q – 3 samples)

The inspectors reviewed performance based problems that involved selected structures, systems, or 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 are appropriately trended; and
- For SSCs classified as Maintenance Rule (a)(1), that goals and associated corrective actions were adequate and appropriate for the circumstances.

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 three inspection samples:

- 138kV electrical system, breaker BT-5-6 deficiencies;
- Low pressure steam dump system deficiencies; and
- Safety injection system deficiencies.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments/Emergent Work Control

a. Inspection Scope (71111.13 – 4 samples)

The inspectors reviewed maintenance activities to verify that the appropriate 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. The documents reviewed during this inspection are listed in the Attachment. The following activities represented four inspection samples:

- Planned risk on October 2, 2008, while 138kV feeder 33332 L&M was removed from service;
- Planned risk on October 30, 2008, while 34 containment fan cooler unit was removed from service;
- Planned risk on November 10, 2008, during safety injection system logic testing; and
- Planned risk on December 19, 2008, while the 32 instrument air compressor was out-of-service during severe weather warnings.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15 – 4 samples)

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. These reviews included verification that operability determinations were performed in accordance with procedure ENN-OP-104, "Operability Determinations." The inspectors assessed the technical adequacy of the evaluations to ensure consistency with the UFSAR and associated design and licensing basis documents. The documents reviewed are listed in the Attachment. The following operability evaluations were reviewed and represented four inspection samples:

- CR-IP3-2008-03085: Corrosion and battery post seal-bulging on Battery 31;

- CR-IP3-2003-01600: Recurrent 31 service water system zurn strainer corrosion;
- CR-IP3-2008-03046: Spurious containment fan cooler unit low flow alarms; and
- CR-IP3-2008-02822: PCV-1190 failure-to-close during testing.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications

.1 Temporary Setpoint Change for Main Unit Generator Exciter Cold Gas Temperatures

a. Inspection Scope (71111.18 – 1 sample)

The inspectors reviewed the design documentation associated with the temporary setpoint change for the exciter cold gas temperature alarms. The inspectors verified the adequacy of the temporary modification and reviewed the associated operational decision-making instruction. This verification included review of the system impacts of raising the alarm setpoint, the impact on operator actions, and the modification installation testing requirements. The inspectors also reviewed the work package and planning that was scheduled in the next outage to clear this temporary modification.

b. Findings

No findings of significance were identified.

.2 Installation of a Full Enclosure Clamp on Steam Valve MS-202

a. Inspection Scope (71111.18 – 1 sample)

The inspectors reviewed the design documentation associated with the temporary repair of a steam leak on main steam valve (MS)-202, isolation valve for main turbine cylinder heating steam. The inspectors reviewed plant operating procedures to ensure the installation of the sealing clamp would not adversely impact normal and off-normal plant operations. The inspectors also verified that the sealing technique would not adversely impact plant equipment, which included chemistry impacts and steam generator parameters. Installation testing and restoration work was reviewed along with the timeline for restoration of the valve to its original configuration.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope (71111.19 – 8 samples)

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 plant personnel. The inspectors verified that: test acceptance criteria were clear; tests

demonstrated operational readiness and were consistent with design basis documentation; test instrumentation had current calibrations and appropriate range and accuracy for the application; tests were performed as written; and applicable test prerequisites were satisfied. Upon completion of the tests, the inspectors verified that equipment was returned to the proper alignment necessary to perform its safety function. Post-maintenance testing was evaluated against the requirements of 10 CFR 50, Appendix B, Criterion XI, "Test Control." The following post-maintenance activities were reviewed and represented eight inspection samples:

- 34 control building exhaust fan bearing replacement on September 27, 2008;
- 32 containment fan cooler unit (FCU) maintenance on October 8, 2008;
- 31 emergency diesel generator (EDG) outage on October 8 - 9, 2008;
- 32 central control room air-conditioning unit maintenance on October 23, 2008;
- 34 service water pump (SWP) breaker inspection on October 27, 2008;
- 32 EDG maintenance activities on November 4 - 5, 2008;
- 36 SWP maintenance activities on November 5, 2008; and
- 31 boric acid transfer pump maintenance activities on December 22, 2008.

b. Findings

Introduction: A Green, self-revealing, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified, because Entergy did not establish appropriate torque values in maintenance procedures used for bearing replacements for the 34 Control Building (CB) exhaust fan. Additionally, Entergy did not specify the appropriate grease for lubrication of the 34 CB exhaust fan pillow block bearings during maintenance.

Description: The 34 CB exhaust fan is required to remove heat from the 480 volt switchgear room to ensure Entergy can safely shutdown and maintain the Unit 3 reactor in a safe condition. The 34 CB exhaust fan experienced bearing failures more frequently than expected for the type of bearing being used in the fan, as evidenced by bearing replacements that occurred in January 2006, June 2008, and September 2008. In January 2006, Entergy installed new, pillow block bearings on the 34 CB exhaust fan, based on information contained in Technical Evaluation #98-001561. This Technical Evaluation, which was completed in June 1998, did not incorporate the manufacturer-recommended torque values for the pillow block bearings into the applicable maintenance procedures. In addition, Entergy's technical evaluation did not identify that the grease used on-site to lubricate these bearings was incompatible with the grease used by the manufacturer to pre-lubricate the bearings.

In May 2007, Entergy identified elevated vibration readings on the 34 CB exhaust fan, as well as discolored grease and metal filings in the vicinity of the fan's bearings. Entergy generated a work order to replace the bearings and perform an alignment of the fan but the issue was not entered into Entergy's corrective action program (CAP) and the maintenance was not scheduled or performed in the short term. Subsequently, the 34 CB exhaust fan experienced a step change in its vibration signature on December 10, 2007. This step change in fan vibration was documented by Entergy in condition report (CR)-IP3-2007-04535, and vibration readings were trended thereafter by Entergy staff.

In June 2008, the 34 CB exhaust fan bearings were replaced and a fan alignment was performed with the work order previously generated in 2007. Subsequently, on July 21,

2008, Entergy identified elevated vibrations on the 34 CB exhaust fan, and replaced the 34 CB exhaust fan belts and performed an alignment between the fan and motor.

On August 20, 2008, Entergy identified that the 34 CB exhaust fan shaft was rubbing the fan housing and entered the issue into the CAP as CR-IP3-2008-2004. In addition, due to excessive noise and vibrations from the 34 CB exhaust fans, Entergy removed the fan from service. Following replacement of the fan bearings, belts, shaft and pulleys, the fan was returned to service on September 30, 2008.

During Entergy's investigations following the August 2008 bearing issues, Entergy personnel determined that the primary cause of the more frequent bearing failures in the 34 CB exhaust fan was inadequate application of torque on the 34 CB exhaust fan pillow block bolts, which resulted in fan shaft movement that affected the alignment and caused degradation of the fan bearings. Specifically, Entergy determined that their technical evaluation performed in 1998 and the CB exhaust fan bearing replacement procedure 3-FAN-011-CBF, "Inspection, Cleaning, and Repair of Control Building Exhaust Fans and Louvers L-319 and L-320," did not reference the manufacturer recommended torque value or guidance for the pillow block bearing housing bolts. Entergy also determined that incompatible grease was used to lubricate the bearings and contributed to more frequent bearing failures. Specifically, the pillow block bearings were supplied from the manufacturer pre-lubricated with Timken Ball Bearing grease (No. 2 polyurea-based grease). The grease used by Entergy during installation and periodic lubrication of these bearings was Mobilith AW-2 grease, which Entergy later determined to be incompatible with the grease used by the manufacturer. Entergy determined the incompatible greases reduced their lubrication properties and likely degraded bearing performance and resulted in elevated equipment vibration.

The inspectors determined that Entergy's failure to establish appropriate torque requirements in the applicable maintenance procedures, including establishment of an appropriate bearing lubricant, was a performance deficiency. Additionally, Entergy had opportunities to evaluate and correct these performance issues in May 2007, December 2007, and July 2008, in response to elevated vibrations associated with the CB exhaust fan, as well as a bearing replacement that occurred in June 2008.

Analysis: The inspectors determined the finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Entergy did not ensure the reliability of the 34 CB exhaust fan by applying improper torque to the pillow block bolts to preclude movement during equipment operation and usage of incompatible grease to lubricate the bearings. The significance of this finding was evaluated using a Phase 1 SDP screening and was determined to be of very low safety significance (Green) because it was not a design or qualification deficiency; it did not represent a loss of system safety function; and it did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating events.

The finding had a cross-cutting aspect in problem identification and resolution in that Entergy did not thoroughly evaluate problems such that the resolutions addressed the causes when the 34 CB exhaust fan exhibited high vibrations on an increased frequency. (P.1(c))

Enforcement: 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" states, in part, that instructions, procedures, and drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Contrary to the above, Entergy did not specify the appropriate torque requirements and lubricant in maintenance procedure 3-FAN-011-CBF, "Inspection, Cleaning, and Repair of Control Building Exhaust Fans and Louvers L-319 and L-320," for replacing and maintaining the bearings for the 34 control building (CB) exhaust fan. Specifically, after the August 2008, 34 CB exhaust fan bearing issues, Entergy determined that since January 2006 they had applied improper torque to the fan bearings and used incompatible grease to lubricate the fan bearings. Entergy's apparent cause evaluation and corrective actions are documented in CR-IP3-2008-02224 and CR-IP3-2008-02345. Entergy implemented vendor recommended torque specifications for the pillow block bolts and used the proper lubricant during the September 2008 repair. Because this issue is of very low safety significance and is entered into Entergy's corrective action program, this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy:
(NCV05000286/2008005-01, 34 CB Fan bearing failures caused by torque and lubrication deficiencies)

1R22 Surveillance Testing

a. Inspection Scope (71111.22 – 5 samples)

The inspectors witnessed performance of surveillance tests and/or reviewed test data of selected risk-significant structures, systems, and components, to assess whether test results satisfied Technical Specification, 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 that the 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 five inspection samples:

- 3-PT-Q092D, "34 Service Water Pump Train Operational Test," Rev. 11, on October 21, 2008;
- 3-PT-Q120C, "33 ABFP (Motor Driven) Surveillance and IST," Rev. 9, on October 31, 2008;
- 3-PT-M062C, "480V Undervoltage /Degraded Grid Protection System Bus 6A Functional," Rev. 6, on October 9, 2008;
- 3-PT-Q032, "RC-AOV-519, 552, 548, & 549 IST," Rev. 20, on November 2, 2008; and
- 3-PT-M79C, "33 EDG Functional Test," Rev. 36, On November 3, 2008;

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation

a. Inspection Scope (71114.02)

The inspectors observed a full-volume siren test on October 22, 2008, to verify that Entergy's newly-installed siren system functioned properly. The inspectors verified that the minimum required number of sirens functioned, when actuated. This inspection was conducted in accordance with the baseline inspection program deviation authorized by the NRC Executive Director of Operations (EDO) in a memorandum dated October 31, 2005, and renewed by the EDO in a memorandum dated December 19, 2007.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope (71114.06 - 1 sample)

The inspectors observed an emergency preparedness drill conducted on October 29, 2008. The inspectors used NRC Inspection Procedure 71114.06, "Drill Evaluation," as guidance and criteria for evaluation of the drill. The inspectors observed the drill and various critiques that were conducted from participating facilities on-site, including the Indian Point Unit 3 plant-reference simulator and the technical support center. The inspectors focused the reviews on the identification of weaknesses and deficiencies in various performance areas, which included on-site training objectives, such as: command and control, communications and notifications, corrective actions, and accident assessment and protective actions. The inspectors observed Entergy's critique and compared the licensee's self-identified issues with the observations from the inspectors' review to ensure that performance issues were properly identified. The observation of the drill represented one inspection program sample.

b. Findings

No findings of significance were identified.

2. **Radiation Safety**

Cornerstone: Occupational Radiation Safety (OS)

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope (71121.03 – 9 samples)

During December 15 - 19, 2008, the inspectors conducted the following activities to evaluate the operability and accuracy of radiation monitoring instrumentation, and the adequacy of the respiratory protection program for issuing self-contained breathing apparatus (SCBA) to emergency response personnel. Implementation of these programs was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Entergy's procedures.

- 1) The inspectors reviewed the UFSAR to identify area radiation monitors that are installed in Indian Point Units 2 and 3 for the protection of workers, reviewed calibration procedures and records for selected instrumentation, and discussed the system monitoring health reports and instrument reliability trends with the system engineer for the following instrumentation: Unit 2 plant radiation monitors, main steam line radiation monitors (R-28, R-29, R-30, R-31), refuel floor area radiation monitor (R-5), containment high-range radiation and noble gas monitors (R-25, R-26), gaseous and particulate containment radiation monitors (R-42, R-41), in-core area radiation monitor (R-7), steam generator blow down radiation monitor (R-49); Unit 3 plant radiation monitors, main steam line radiation monitors (R-62A, R-62B, R-62C, R-62D), refuel floor area radiation monitor (R-5), containment high-range radiation and noble gas monitors (R-25, R-26), gaseous and particulate containment radiation monitors (R-12, R-11), in-core area radiation monitor (R-7), and steam generator blow down radiation monitor (R-19).
- 2) The inspectors evaluated radiation detection instruments used at Indian Point for job coverage and work in radiologically-significant areas, which included continuous air monitors and whole body counters. The inspectors evaluated the following specific instruments: 49 electronic dosimeters, 13 radiation survey instruments, 12 extendable probe survey instruments, six neutron radiation survey instruments, six continuous air monitors, four portal monitors, seven beta and alpha counters, and two whole body counters.
- 3) The inspectors reviewed the current calibration records, applicable calibration procedures, as well as operability and alarm set-points for the instruments identified in Item 2) above. In addition, the inspectors verified that appropriate instrument calibration geometries and National Institute for Science and Technology (NIST) standard traceability were utilized for the applicable calibrators. These calibrators included Shepherd 81-12B beam source calibrators, the Shepherd 142-10 panoramic calibrator, the Shepherd 149 neutron source calibrator, and the Shepherd 1000B box source calibrator. The inspectors verified that the calibration sources used by Entergy were representative of the Unit 2 and Unit 3 source terms.
- 4) The inspectors reviewed radiological incidents that involved internal exposures identified by condition reports for 2008. In addition, electronic dosimetry records were queried to identify incidents for further review based on exposures that exceeded 50 mRem committed effective dose equivalent (CEDE). None were identified for further review.
- 5) The inspectors reviewed condition reports (See Section 4OA2), with respect to radiation protection program deficiencies to determine if the deficiencies were appropriately characterized and corrected commensurate with their safety significance.
- 6) Based on the condition reports reviewed (See Section 4OA2), no repetitive deficiencies were identified by the inspectors for further follow-up.
- 7) With respect to the RP portable instruments listed in 3) above, the calibration expiration and response check stickers for the instruments were reviewed by the inspectors. The applicable response check beta-source and instrument sign-out

procedures were also reviewed. The inspectors queried radiation protection technicians regarding appropriate instrument selection and performed field observations to ensure that self-verifications of instrument operability were being performed prior to use.

- 8) A sample of Emergency Plan-required self-contained breathing apparatus (SCBA) equipment and qualified users were reviewed by the inspectors based on Indian Point Energy Center Emergency Plan documents. This review included inspection of selected SCBAs and air bottle cascade systems located inside or adjacent to both the Unit 2 and Unit 3 central control rooms. SCBA qualification records for select, on-shift reactor operators were verified for currency. The inspectors also verified that air used to fill the SCBAs met the Grade D quality criteria of the Compressed Gas Association. The inspectors queried on-shift reactor operators to determine the storage location of required spectacles.
- 9) The inspectors reviewed periodic air cylinder hydrostatic testing and maintenance records for selected SCBA units, which included a review of approved replacement parts documentation and certification of repair personnel.

b. Findings

No findings of significance were identified.

4. Other Activities (OA)

4OA1 Performance Indicator Verification

a. Inspection Scope (71151 - 3 samples)

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

Barrier Integrity

- Reactor Coolant System Leakage

Occupational radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

Public Radiation Safety Cornerstone

- RETS/ODCM Radiological Effluent Occurrences

The inspectors also reviewed specific data and plant records for the unique inspections listed above, which included: performance indicator data summary reports, operator narrative logs, the corrective action program, radiological-controlled area dosimeter exit

logs, effluent release reports, monthly/quarterly projected dose assessment results for liquid and gaseous releases, and dose assessment procedures.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Routine Problem Identification and Resolution (PI&R) 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 condition reports, and attending condition report screening meetings.

In accordance with the baseline inspection procedures, 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'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. The condition reports reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Substantive Cross-Cutting Issue Review: Human Performance - Procedure Adequacy (71152 – 1 sample)

a. Inspection Scope

The inspectors reviewed Entergy's actions to address the Substantive Cross-Cutting Issue (SCCI) in Human Performance related to procedure adequacy. The inspectors' review focused on Entergy's progress in addressing the SCCI since their implementation of a revised action plan in May 2008. The inspectors evaluated Entergy's performance improvement plans and actions using inspection guidance in Inspection Procedure 71152, "Identification and Resolution of Problems." Specifically, the inspectors assessed Entergy's progress in resolving the cross-cutting issue by evaluating whether Entergy's internal milestones were being monitored and consistently met and whether adjustments in approach were made when necessary. This inspection focused on the progress made since the PI&R sample inspection conducted in October 2008 (NRC Inspection Report 05000247/2008013 and 05000286/2008011).

The inspectors conducted a review of the applicable condition reports (CRs), corrective action assignments, focused self-assessments, Quality Assurance group assessments, and causal evaluations for the substantive cross-cutting issue. The inspectors also

reviewed Entergy's performance indicators related to their performance improvement plan; reviewed a sample of revised procedures; conducted a series of interviews with station management, procedure writers and reviewers, maintenance technicians, and operators in order to assess the adequacy of the performance plan and effectiveness of corrective actions.

b. Findings and Observations

No findings of significance were identified.

The inspectors determined that Entergy continued to make progress in effectively implementing their corrective action plans that address the substantive cross-cutting issue in Human Performance related to procedure adequacy.

The inspectors concluded that Entergy's corrective action plans were reasonable in scope because they addressed procedures that contributed to the substantive cross-cutting issue. Entergy's corrective action plans included Operations, Electrical and Mechanical Maintenance, and I&C Maintenance procedures. The procedure upgrade project portion of Entergy's corrective action plans focused on risk significant components and actions in operating procedures. The inspectors determined the procedure upgrade project scope appropriately included operating procedures related to initiating events, single point vulnerabilities, and integrated plant operating procedures. The inspectors observed that station training was developed and provided for the individuals involved in the procedure upgrade project and their management. The inspectors also observed that procedure reviews were being conducted for Security, Chemistry, Radiation Protection, and Engineering procedures to improve the quality of procedures in those areas.

The inspectors confirmed previous NRC observations, through interviews with Entergy staff, that the station has shifted the ownership of this project from the support organizations to the line organization. Entergy personnel indicated this organizational alignment has been a significant factor in the increased acceptance and participation from plant workers, and produced a noticeable improvement in revised procedure quality. The inspectors observed that several personnel interviewed commented that the human performance training simulator is an effective tool, and assisted procedure writers with the identification of human performance error traps in existing procedures. The inspectors concluded that the realignment of the procedure upgrade project resulted in enhanced project accountability and quality output.

With respect to the progress of the procedure upgrade project, Entergy completed Phase I of the project ahead of their internal schedule and started Phase II. Phase I consisted of operations procedures associated with the top three risk significant systems for Units 2 and 3. Phase II of the procedure upgrade project included the remaining top 10 plant risk significant systems, integrated plant operating procedures, procedures which involved single point vulnerabilities and initiating events. Current Entergy plans and progress indicate that the Phase II portion of the procedure upgrade project will be completed by June 2009, several months ahead of the corrective action plan schedule. The inspectors reviewed a sample of the revised Phase I and Phase II procedures and determined that significant revisions were made and the results met the quality and procedure standards described in Entergy's action plan.

The inspectors also observed that the Electrical and Mechanical Maintenance procedure upgrade project and the I&C Maintenance procedure development project made progress that was consistent with internal action plan schedules and milestones. The inspectors determined that the projects continue to receive the appropriate level of resources and management review and support to ensure completion of these projects.

The inspectors determined that human error awareness and prevention actions were being implemented by Entergy to address the human performance aspects that contributed to the substantive cross-cutting issue in procedure adequacy. The inspectors determined that implementation of training, specifically the human performance training simulator, was appropriate to reinforce human error prevention techniques being applied in the plant.

The inspectors concluded Entergy developed appropriate monitoring measures and performance indicators to assess corrective action effectiveness. The inspectors observed that Entergy utilized these tools to provide initial feedback on corrective action implementation. For example, the inspectors determined that the performance indicators, related to procedure completion status and procedure feedback process backlog, were an effective tool for monitoring station progress in these areas. Additionally, the inspectors concluded that self-assessments were an effective tool for corrective action adjustments and for evaluation of internal and external stakeholder recommendations. Entergy has adjusted the corrective action plan and procedure upgrade project scope to adequately incorporate stakeholder recommendations.

.3 Occupational Radiation Safety Cornerstone

a. Inspection Scope

The inspector reviewed condition reports initiated between November 2007 and December 2008, relative to the radiation protection program. The inspectors verified that problems identified by these condition reports were properly characterized by Entergy, and that applicable causes and corrective actions were identified commensurate with the safety significance of the occurrences.

b. Findings and Observations

No findings of significance were identified.

.4 Operator Workarounds Review (71152 – 1 sample)

a. Inspection Scope

The inspectors conducted a review of the aggregate impact of operator workarounds on the ability of operators to implement abnormal and emergency operating procedures (AOPs/EOPs), and to ensure that mitigating systems that are impacted remain capable of performing the associated safety functions. This review included operator burdens, as well as control room alarms and deficiencies. The inspectors reviewed the prioritization, assessment, and ownership of the aggregate impact that is accomplished through the site's Unit Reliability Team, and the implementation and assessment of the Operations Aggregate Indicator, which is described in EN-OP-115, "Conduct of Operations," Rev. 6. The inspectors conducted control board walk downs, and discussed various deficiencies with operators to determine the overall impact the deficiencies would have on operator

response to plant events, which included compensatory actions that resulted from the applicable deficiency. Additionally, the inspectors reviewed site performance indicators and associated inputs to determine if deficiencies were appropriately classified in accordance with site guidelines.

b. Findings and Observations

No findings of significance were identified.

The inspectors reviewed various deficiencies that input into Entergy's Operations Aggregate Index, and verified that these deficiencies were appropriately classified as operator work-arounds, control room deficiencies and alarms. In addition, the inspectors verified that the aggregate impact of the deficiencies did not significantly impact the ability of operators to respond appropriately during plant events while implementing applicable EOPs and AOPs. The inspectors also verified that the Unit Reliability Team was appropriately addressing the prioritization of deficiencies to ensure timely corrective actions were being implemented commensurate with applicable safety significance.

.5 Semi-Annual Trend Review (71152 – 1 sample)

a. Inspection Scope

The inspectors performed a semi-annual review to identify trends that might indicate the existence of a more significant safety issue. 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, maintenance rule assessments, and maintenance or corrective action program backlogs. The inspectors also reviewed Entergy's corrective action program database for the third and fourth quarters of 2008 to assess condition reports (CRs) written in various subject areas. The inspectors reviewed Entergy's quarterly trend reports from the corrective action, engineering, and maintenance departments for the second and third quarters of 2008 to ensure Entergy was appropriately evaluating and trending adverse conditions.

The inspectors focused on an emerging trend identified by Entergy from recent events in that human performance was determined to be either a direct or contributing cause. This trend was selected, in part, to evaluate Entergy's actions in response to the increased number of NRC inspection findings with associated human performance cross-cutting aspects in 2008. The CRs listed below identified plant events that had related human performance aspects. The inspectors reviewed the CRs, causal evaluations, Entergy's Human Performance Program, business plans, and interviewed cognizant station personnel to assess whether Entergy identified the adverse trend and developed appropriate measures to address the conditions.

- IP3-2008-00818: Loss of bus 5A while performing monthly surveillance test;
- IP3-2008-01589: Elevated cylinder exhaust temperatures identified on 32 EDG while performing monthly surveillance;
- IP3-2008-01863: Inadvertent initiation of auxiliary feedwater pumps during monthly surveillance on RPS; and
- IP3-2008-02518: Loss of bus 6A while performing monthly surveillance test.

b. Assessment and Observations

No findings of significance were identified.

Several events that occurred at Indian Point in 2008, which resulted in both personal injury and equipment failures, were identified by Entergy to be attributable to human performance errors. Entergy recognized the adverse trend in human performance, and developed a Human Performance Program to address the causes of the events, and to assist in the prevention or mitigation of future occurrences. The inspectors observed that the Human Performance Program includes actions to address the causes of human performance errors, reduce human performance errors, and monitor performance to verify their actions are effective.

Entergy reviewed the identified human performance errors to determine if a common cause existed, which was documented in CR-IP2-2008-03671. Entergy determined that the human performance errors shared various contributing causes including application of human performance tools, identification of error-likely situations, work planning and execution, and application of resources.

Entergy developed communication tools, training plans, and adjusted the site business plan to address the causal factors associated with human performance errors. Entergy implemented new communication tools including Safety and Human Performance Stand Downs and periodic human performance bulletins. The Safety and Human Performance Stand Downs were used to develop a forum to reinforce site human performance expectations and discuss current human performance error events. Entergy also scheduled future stand downs to coincide with major evolutions on site in 2009, such as the Unit 3 refueling outage.

Entergy developed a Human Performance Simulator and Work Management Academy to provide training on human performance traps, human performance tools, and to improve work planning and execution. The Human Performance Simulator focuses on reinforcing the proper threshold for error trap identification and the effective use of human performance tools to accomplish tasks. Operations and maintenance departments completed this training, and it is included as annual refresher training for their department personnel. The Work Management Academy was required for all supervisory personnel and reinforced Entergy's work management model and procedures. Entergy also developed its Thought Improvement Process (TIP) Initiative to encourage employees to provide constructive feedback to improve the site's human performance.

The inspectors noted that Entergy has established measures to monitor human performance at Indian Point. In particular, human performance indicators and self-assessment results are used to monitor the effectiveness of the current programs and for evaluation of future trends in human performance. The next focused human performance self-assessment report is due July 10, 2009.

The inspectors concluded that Entergy took timely and appropriately comprehensive action to address the site's emerging adverse human performance trend. The inspectors determined the programs established within Entergy's Human Performance program were reasonable to address the recent human performance errors and emerging adverse trend in human performance.

4OA3 Event Followup

- .1 (Closed) LER 05000286/2008-001-00, Technical Specification Prohibited Condition Due to Exceeding the Allowed Completion Time for an Inoperable Safety Injection Pump Caused by a Failed Motor Supply Breaker.

On January 27, 2008, during an attempt to start the 31 Safety Injection Pump (SIP), the 31 SIP failed to start. Entergy staff investigated the failure to start and determined that the power supply breaker for the pump motor failed to close. Technical Specification (TS) 3.5.2, Emergency Core Cooling Systems (ECCS), Condition A was entered for one or more trains inoperable. Entergy's review of past operation of the 31 SIP determined that the pump was last operable on January 11, 2008. TS 3.5.2 requires three trains of ECCS to be operable. The required action A.1 for TS 3.5.2, Condition A, is to restore the train(s) to operable within a completion time of 72 hours. The inoperable condition based on past operation exceeded the 72 hour allowed completion time for TS 3.5.2 with the required action not completed. Entergy determined the cause of the breaker problem was due to the breaker closing springs not charging. The closing springs did not charge properly due to a dislodged charging motor brush assembly because a retaining screw became loose. Entergy's corrective actions included replacement of the breaker spring charging motor and subsequent breaker testing, and the breaker was returned to service on January 27, 2008. Entergy also revised the breaker maintenance procedure to require inspection of the breaker motor retaining screw.

The inspectors reviewed the LER and Entergy's evaluation of the event and associated corrective actions contained in CR-IP-2008-00252. The inspectors determined that the problem with the 31 SIP breaker, specific to the closing springs, was not within Entergy's ability to foresee and correct based on review of the breaker's maintenance and operational history, equipment configuration, and available operating experience information. Specifically, the inspectors determined that Entergy's maintenance performed on this breaker was appropriate and up to date consistent with station and vendor instructions. The inspectors determined that, based on review on the operational history of the breaker, there was not information that indicated a potential reliability challenge related to the closing spring. The inspectors also determined that operating experience information available to Entergy did not identify the potential for the closing spring problem that was evidenced for this type of breaker. Further, the inspectors concluded that, due to the installed location of the charging motor brush assembly, Entergy's routine processes and procedures would not have identified or reasonably detected the failure. Therefore, the inspectors determined this equipment failure could not have been avoided or detected by Entergy's quality assurance program or other related control measures and did not constitute a performance deficiency. Additionally, based on the assumption that the 31 SIP was inoperable for 16 days, the inspectors performed a Phase 2 SDP analysis that resulted in the risk significance of this issue as being of very low safety significance (Green).

The inspectors determined that the 31 SIP being inoperable for greater than 72 hours was a violation of Entergy's Technical Specification 3.5.2, Emergency Core Cooling System (ECCS), Condition A, which requires an inoperable train of safety injection to be restored to operable status within 72 hours. However, because there was no performance deficiency identified and the risk significance is of very low safety significance, the NRC has chosen to exercise enforcement discretion and refrain from issuing enforcement action for this violation of NRC requirements in accordance with Section VII.B.6 of the NRC's Enforcement Policy. Further, because Entergy's actions

did not contribute to this violation, it will not be considered in the assessment process or NRC's action matrix. This LER is closed.

- .2 (Closed) LER 05000286/2008-004-00, Automatic Actuation of the Motor Driven Auxiliary Pumps During Surveillance Testing Caused by Incorrect Test Jumper Connection Due to Personnel Error.

On August 4, 2008, during performance of the monthly Reactor Protection Logic Channel Functional Test 3-PT-M13B1, Instrumentation & Control (I&C) technicians were testing the Low-Low Steam Generator Water Level circuit, a required, wire "jumper" installed between terminal points became dislodged. During subsequent testing activities, which included re-installation of the dislodged jumper, control room operators notified the technicians of an automatic start of the motor-driven auxiliary feedwater pumps. The technicians stopped, removed the jumpers, and troubleshooting was performed. The auxiliary feedwater pumps were subsequently restored to their original configuration, and the test was subsequently performed satisfactorily.

The inspectors reviewed the LER to verify its accuracy based on the NRC's assessment of the event, and reviewed Entergy's evaluation of the event contained in the causal report and associated corrective actions contained in CR-IP3-2008-01863. Because the personnel performance aspects that contributed to this event were previously evaluated and dispositioned as a Green, non-cited violation in NRC inspection report 50-286/2008-004, no further findings of significance or violation of NRC requirements were identified. This LER is closed.

- .3 (Closed) LER 05000286/2008-005-00, Technical Specification Prohibited Condition Due to Exceeding the Allowed Completion Time for an Inoperable Isolation Valve Seal Water System Due to an Out of Position Valve Caused by Personnel Error

On September 1, 2008, during implementation of various valve lineups at Unit 3, Entergy personnel identified an isolation valve seal water (IVSW) system valve, IV-1692, out of its required open position, e.g., it was found in the closed position. Entergy determined that the valve was out of its normally-open position since May 2007, for approximately 17 months, due to personnel error in the removal of a temporary modification and failure to ensure full restoration of valve IV-1692. As a result, one header of the IVSW system was inoperable greater than the seven days allowed by technical specification (TS) 3.6.9.

Entergy restored IV-1692 to its normally-open position, performed an apparent cause evaluation, briefed maintenance personnel, which included supervisors, regarding human performance tools to minimize personnel error, and instituted a dynamic human performance simulator to reinforce aspects of performance such as, proper use of error reduction tools and procedure compliance. The inspectors determined this issue was more than minor because it impacted the Barrier Integrity cornerstone, and impacted its ability to limit fission product releases from containment during a design basis loss of coolant accident. The issue was determined to be of very low safety significance (Green) in accordance with the SDP Phase 1 worksheet because it did not represent an actual open pathway in the physical integrity of the reactor containment. In addition, although Entergy credits the operable IVSW system to calculate and ensure compliance with NRC containment leakage requirements, the system is not credited in the calculation of offsite doses following the design basis loss of coolant accident. The

enforcement aspects of this licensee-identified finding are discussed in Section 4OA7. This LER is closed.

.4 Loss of 480 Volt Emergency Safety Bus 6A During Surveillance Testing on October 9, 2008

a. Inspection Scope

The inspectors evaluated the response of control room personnel following the unexpected loss of 480 Volt safeguards bus 6A that occurred during the performance of a degraded grid/undervoltage relay surveillance test on October 9, 2008. The inspectors reviewed plant computer data, evaluated plant parameter traces, and discussed the event with plant personnel, to verify that plant equipment responded as expected, and to ensure that operating procedures were appropriately implemented. The inspectors verified that Entergy's short term corrective actions were appropriate in response to the event. This event was entered into Entergy's corrective action program as CR IP3-2008-02519. Corrective actions included the initiation of a root cause evaluation, and the determination that the test meter utilized during the surveillance would need to be evaluated for potential deficiencies that may have contributed to the event.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 TI 2515/173, Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative

a. Inspection Scope

During the week of August 11, 2008, the NRC assessed Entergy's implementation of the Nuclear Energy Institute – Voluntary Ground Water Protection Initiative (dated August 2007, ML072610036). Entergy evaluated work practices that could lead to leaks and spills, and performed an evaluation of systems, structures, and components that contain licensed radioactive material to determine potential leak or spill mechanisms.

Entergy completed a site characterization of geology and hydrology to determine the predominant ground water gradients and potential pathways for ground water migration from on-site locations to off-site locations. An on-site ground water monitoring program has been implemented to monitor for potential licensed radioactive leakage into groundwater. The ground water monitoring results are reported in the annual effluent and/or environmental monitoring report. (See link below)

<http://www.nrc.gov/reactors/operating/ops-experience/tritium/plant-info.html>)

Entergy prepared procedures for the decision making process for potential remediation of leaks and spills, including consideration of the long term decommissioning impacts. Records of leaks and spills are recorded in Entergy's decommissioning files in accordance with 10 CFR 50.75(g).

Entergy identified the appropriate local and state officials and has conducted briefings on the licensee's ground water protection initiative. Entergy established protocols for notification to local and state officials regarding detection of leaks and spills.

b. Findings

No findings of significance were identified.

.2 Ground-Water Contamination Review

a. Inspection Scope

The inspectors reviewed plans, procedures, and remediation activities affecting the contaminated ground water condition at Indian Point, relative to NRC regulatory requirements, as authorized by the NRC Executive Director of Operations in a Reactor Oversight Process deviation memorandum dated December 19, 2007 [ADAMS Ref. No. ML073480290]. Entergy's performance was assessed, relative to remediation of the principal source of groundwater contamination including observation of the draining and sludge removal of the Unit 1 spent fuel pools; the radioactive waste processing of the fuel pool water and residual sludge materials; and review of the radioactive liquid effluent release accounting and dose calculations resulting from these activities. The inspection included onsite inspections on September 18, 2008; October 10, 2008; October 14-15, 2008; and November 17-18, 2008.

b. Findings and Observations

No findings of significance were identified.

Following the removal of Unit 1 spent fuel to dry cask storage, Entergy established special radioactive liquid processing and sampling equipment for conducting the drain down of the Unit 1 spent fuel pools. Between September 15, 2008 and November 7, 2008, approximately 500,000 gallons of water were drained and processed which included pool surface rinse water used during sludge removal activities. The liquid processing equipment was designed to clarify the pool water prior to discharge into the Hudson River. The liquid processing system consisted of a series of sequential processing modules which included a filter cartridge, a 25 ft³ mixed (cation and anion) demineralizer resin vessel followed by five 12.5 ft³ supplemental water polishing units consisting of an activated charcoal vessel, a cation demineralizer resin vessel, a mixed demineralizer resin vessel, a cesium-specific filter media vessel, and finally another activated charcoal vessel. The filtered and demineralized water was sampled by an automatic composite sampler for monitoring and analysis prior to the effluent stream release into the discharge canal. Residual sludge from the bottom of the spent fuel pools was mixed with water and sluiced into a 120 ft³ polyethylene disposal container. Liquids were removed from this solid waste container by periodically pumping down the container through the self-contained PVC dewatering system contained in the disposal container. These liquid wastes were subsequently processed through the same liquid processing system as described above, however, due to the potentially higher radioactive contaminants, the final processed water was redirected to a Unit 1 waste collection tank to allow for additional waste water treatment prior to discharge. The 120 ft³ disposal container of solid waste was classified as Class B waste and will be stored onsite until an offsite disposal facility becomes available.

The inspectors determined the treated and discharged water was sampled and properly accounted by Entergy to result in less than 1 Curie of radioactivity discharged consisting mostly of tritium, and small amounts of Kr-85 and Cs-137. The resulting public dose associated from this liquid discharge activity was 0.00007 mRem to the whole body and 0.00012 mRem to the highest organ (teen/liver). The inspectors verified these values represent small fractions of the liquid discharge limits of 3 mRem/yr whole body and 10 mRem/yr maximum organ dose limits specified in 10 CFR 50, Appendix I.

.3 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that these activities were consistent with Entergy security procedures and applicable regulatory requirements. Although these observations did not constitute additional inspection samples, they were considered an integral part of the normal, resident inspector plant status reviews during implementation of the baseline inspection program.

b. Findings

No findings of significance were identified.

.4 Implementation of Temporary Instruction (TI) 2515/176 – Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

a. Inspection Scope

The objective of TI 2515/176, “Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing,” was to gather information and assess the adequacy of nuclear power plant emergency diesel generator (EDG) endurance and margin testing as prescribed in plant-specific technical specifications (TS). The inspectors reviewed the Unit 3 emergency diesel generator ratings, design basis event load calculations, surveillance testing requirements, emergency diesel generator vendor’s specifications, and other information in accordance with TI 2515/176.

The inspectors’ assessment, and other pertinent information gathered during the implementation of this TI was discussed with Entergy personnel. In addition, this information was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

Exit Meeting Summary

On January 8, 2009, the inspectors presented the inspection results to Joe Pollock and other Energy staff members, who acknowledged the inspection results. Entergy did not identify any material as proprietary.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by Entergy and is a violation of NRC requirements, which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

- TS 3.6.9 requires that an inoperable isolation valve seal water (IVSW) system header be restored to operable status within seven days. Contrary to this requirement, Entergy did not identify that an IVSW system valve, which provides seal water to maintain the leak-tight integrity of containment isolation valves, was out of its normally-open position for approximately 17 months beginning May 2007. The out-of-position IVSW valve was identified and corrected by Entergy on September 1, 2008. The issue was entered into Entergy's corrective action program as condition report CR IP3-2008-02095. The issue was determined to be of very low safety significance (Green) in accordance with the SDP Phase 1 worksheet because it did not represent an actual open pathway in the physical integrity of the reactor containment, and the system is not credited in the determination of post-accident radiation dose to the general public.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

J. Pollock, Site Vice President
A. Vitale, General Manager, Plant Operations
P. Conroy, Director, Nuclear Safety Assurance
D. Gagnon, Manager, Security
R. Walpole, Manager, Licensing
B. Beckman, Manager, Maintenance
R. Christman, Manager, Training
J. Dinelli, Assistant Operations Manager, Unit 3
V. Myers, Supervisor, Mechanical Design Engineering
A. Singer, Superintendent, Operations Training
T. Orlando, Engineering Director
C. English, Superintendent, Unit 1
B. Sullivan, Manager – Emergency Preparedness, Indian Point
R. Burroni, Manager Programs, Components and Engineering
D. Loope, Manager, Radiation Protection
S. Verrochi, Manager System Engineering
F. Inzirillo, Manager, Quality Assurance
N. Azevedo, Supervisor, Code Programs
T. Morzello, Maintenance Supervisor
S. Prussman, Licensing Engineer
G. Dahl, Licensing Engineer
H. Anderson, Licensing Engineer
S. Bianco, Fire Instructor
S. Sandike, Effluent & Environmental Monitoring Specialist
G. Hocking, Radiation Protection Support Supervisor
B. Taggart, ECP Coordinator
T. Stephens, Energy Solutions
R. Turner, Energy Solutions

LIST OF ITEMS OPENED, CLOSED AND DISCUSSEDOpened and Closed

05000286/2008005-01	NCV	34 CB Fan bearing failures caused by torque and lubrication deficiencies.
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Closed

05000286/2008001-00	LER	Technical Specification Prohibited Condition Due to Exceeding the Allowed Completion Time for an Inoperable Safety Injection Pump Caused by a Failed Motor Supply Breaker.
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05000286/2008004-00	LER	Automatic Actuation of the Motor Driven Auxiliary Pumps During Surveillance Testing Caused by Incorrect Test Jumper Connection Due to Personnel Error.
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05000286/2008005-00	LER	Technical Specification Prohibited Condition Due to Exceeding the Allowed Completion Time for an Inoperable Isolation Valve Seal Water System Due to an Out of Position Valve Caused by Personnel Error.
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

OAP-008, "Severe Weather," Rev. 5
OAP-048, "Seasonal Weather Preparation," Rev. 4

Section 1R04: Equipment Alignment

Procedures

3-COL-CS-001, "Containment Spray System," Rev. 14
3-PT-M096, "Containment Spray System Monthly Alignment Verification," Rev. 5
3-COL-CSV-001, "Containment Spray Verification," Rev. 6
3-COL-EL-005, "Diesel Generators," Revision 32
3-COL-CVCS-1, "Chemical and Volume Control System," Rev. 26
3-COL-RW-3, "Intake Structure," Rev. 12
3-COL-RW-2, "Service Water System," Rev. 42

Work Order

51677514 51420795 51349291

Other

Flow Diagram 9321-F-27503, "Safety Injection System, Sheet 2," Rev. 48
Condition Report CR-IP3-2008-02944
PID 61513
PID 09177

Section 1R05: Fire Protection

Procedures

ENN-DC-161, "Transient Combustible Program," Rev. 11
EN-DC-189, "Fire Drills," Rev. 1, and Fire Brigade Drill Report dated December 9, 2008
SMM-DC-901, "IPEC Fire Protection Program," Rev. 2
Pre-Fire Plan 352AB, 354, 354A, 355, 356, 357, and 358

Condition Reports (CR-IP3-)

2008-03060

Section 1R06: Flood Protection Measures

IP-CALC-08-00031, "Misc. Structural Evaluation for IP2 & IP3 RHR Pump Motor Flood Protection," Rev. 0
IP-CALC-08-00061, "Sizing Calculation for RHR Pump Flooding Line," Rev. 0
EC-5000041988, "Mod to Protect RHR Pump Motors From Internal Flooding."
EC-5000034211, "Design Permanent Solution to Protect RHR Pump Motors From Internal Flooding."
3-AOP-FLOOD-1, "Flooding," Rev. 4

Section 1R07: Heat Sink Performance

0-GNR-406-ELC, "Emergency Diesel Generator 6-Year Inspection," Rev.1
 0-HTX-405-EDG, "EDG Lube Oil and Jacket Water Heat Exchanger Maintenance," Rev. 0
 CR-IP3-2008-01870
 WO 00144830

Section 1R11: Licensed Operator Requalification

Procedures

I3SG-LOR-AOP006, "IPEC Simulator Guide – Loss of Feedwater 3AOP-FW-1," Rev. 3
 I3SG-LOR-AOP003, "IPEC Simulator Guide – 3-AOP-UC-1 Uncontrolled Cooldown," Rev. 1
 3-AOP-FW-1, "Loss of Feedwater," Rev. 6
 3-AOP-UC-1, "Uncontrolled Cooldown," Rev. 2

Section 1R12: Maintenance Effectiveness

Condition Reports (CR-IP3-)

2008-02609	2008-02611	2007-03045	2008-00493
2008-02459	2008-00752	2008-01323	2008-01587
2008-01616	2008-02234		

Maintenance Rule Monitoring Documents

EN-DC-143, "System Health Reports," Rev. 8
 EN-DC-159, "System Monitoring Program," Rev. 2
 EN-DC-167, "Classification of Structures, Systems, and Components," Rev. 2
 EN-DC-203, "Maintenance Rule Program," Rev. 1
 EN-DC-204, "Maintenance Scope and Basis," Rev. 1
 EN-DC-205, "Maintenance Rule Monitoring," Rev. 2
 EN-DC-206, "Maintenance Rule (a)(1) Process," Rev. 1
 Unit 3 Safety Injection System health report for 3rd Qtr 2008, Rev. 0
 Unit 3 Main Steam System Basis Document and System Health Report
 IPEC 138 kV System Monitoring Plan

Section 1R13: Maintenance Risk Assessment and Emergent Work Control

Procedures

IP-SMM-WM-101, "On-Line Risk Assessment," Rev. 3
 Work Week Managers Operator's Risk Report, Work Weeks 0840, 0844, 0846, and 0851

Section 1R15: Operability Evaluations

Procedures

EN-OP-104, "Operability Determinations," Rev. 3
 Indian Point Unit 3 Updated Final Safety Analysis Report, Rev. 2
 PFM-97, "Station Battery Inter-Cell Resistance Check," Rev. 3 and 4
 3-PT-Q028, "Containment Isolation Valves PCV-1190, PCV-1191, and PCV-1192 Pressure Relief System," Rev. 17
 3-PT-126, "Fan Cooler Unit Operational Test," Rev. 0

Condition Reports (CR-IP3-)

2008-02822	2008-03046	2008-03070	2008-03074
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Other Documents

WO 51565142 WO 51462980 WO IP3-05-20386
 Calculation IP3-CALC-SWS-02022, "Operability Determination and Supports Repairs in the
 Zurn Pit," Rev. 4

Section 1R18: Plant ModificationsEngineering Changes

EC-0000012263, "Install a Full Enclosure Clamp Around MS-202 Valve."
 EC-0000011472, "Temporary Setpoint Change for Exciter Cold Gas Temperature."

Section 1R19: Post-Maintenance TestingProcedures

EN-MA-101, "Conduct of Maintenance," Rev. 6
 EN-WM-102, "Work Implementation and Closeout," Rev. 2
 EN-WM-105, "Planning," Rev. 4

0-LUB-401-GEN, "Lubrication of Plant Equipment," Rev. 6\
 3-PT-M079A, "31 EDG Functional Test," Rev. 36
 3-FAN-003-VSS, "Fan Cooler Unit Fan Assembly Preventive Maintenance Inspection," Rev. 9
 3-FAN-007-VSS, "Fan Cooler Unit Dampers Inspection/Maintenance," Rev. 9
 0-GNR-408-ELC, "Emergency Diesel Generator 12-Year Inspection," Rev.2

Condition Reports (CR-IP3-)

2008-00748	2008-01701	2008-01716	2008-02004	2008-02224	2008-02226
2008-02227	2008-02345	2008-02704	2008-02787	2008-04535	2008-02509
2008-02899	2008-02508				

Work Orders

00145321	51672225	00162780	51549514	00159387	51485400
51443345	51571719	51669491	51570943	51570944	51674410
00142088	51485482	145333-02	165446-02	51510555	51653265
51428106	145334-02	51669508	148244-11	51478467	51467052
145330-02	152561-04	51565847	145335-01	145336-01	169221-01/02
167680-01					

Misc.

Standing Order 05-01, "Lubrication Information and Equivalents"
 IPEC Maintenance Feedback Forms for 3-BKR-004-ELC and 3-BKR-018-ELC

Section 1R22: Surveillance ActivitiesMiscellaneous Documents

Indian Point Unit 3 Updated Final Safety Analysis Report, Rev. 2
 Technical Report IP3-RPT-RCS-01799, "Containment Isolation Valve Closure Time Including
 Phase "A" Valves," Rev. 0
 IP3 Design Basis Document DBD-316, "Containment Isolation System," Rev. 3
 IP3 Schematic Diagram 9321-LL-31183, "480V Switchgear 32, Sheet 18," Rev. 10
 IP3 Schematic Diagram 9321-LL-31183, "480V Switchgear 32, Sheet 4," Rev. 21
 IP3 Flow Diagram 9321-H-20293, "Starting Air to Diesel Generators," Rev. 27

Condition Reports (CR-IP3-)

2003-06439 2008-02520 2008-02759 2008-03061

Work Orders

51672225 51673284

Section 20S3: Access Control and ALARAProcedures:

EN-CY-108, Rev. 2, Monitoring of Non-Radioactive Systems
 EN-RP-113, Rev. 2, Response to Contaminated Spills / Leaks
 EN-RP-303, Rev. 2, Source Check Radiation Protection Instrumentation
 EN-RP-306, Rev. 2, Calibration and Operation of the Eberline PM-7
 EN-RP-309, Rev. 1, Operation and Calibration of the Eberline AMS-3 / 3A Continuous Air Monitor
 EN-RP-501, Rev. 3, Respiratory Protection Program
 EN-RP-502, Rev. 4, Inspection and Maintenance of Respiratory Protection Equipment
 IP-EP-AD6-20, Rev. 2, Respiratory Protection Monthly Equipment Inventory
 IP-EP-AD6-21, Rev. 3, Respiratory Protection Quarterly Equipment Inventory
 IP-RP-IC-301, Rev. 1, Calibration of the Eberline AMS-4 Air Monitoring System Using Windows
 IP-SMM-CY-001, Rev. 6, Radioactive Effluents Control Program
 RE-ADM-1-22, Rev. 0, Site Soil Characterization
 RE-INS-7CC-1, Rev. 12, Calibration of the Eberline AMS-2 Beta-Gamma Air Monitor
 RE-INS-7CC-7/8, Eberline PING-1A Calibration Record
 RE-INS-7CH-3, Rev. 10, Calibration of the Merlin-Gerin CDM-21 Electronic Dosimeter Calibrator Using WCDM 2000
 RE-INS-7CH-4, Rev. 5, Characterization of the J.L. Shepherd 81-12, 142-10 and 149 Sources
 RE-INS-7UH-12, Rev. 10, Beam Source Check Sheet
 0-RP-IC-101, Rev. 2, Calibration of Portable Ion Chamber Survey Meters
 0-RP-IC-102, Rev. 0, Calibration of the Eberline ASP-1 with Neutron Detector
 0-RP-IC-301, Rev. 1, Calibration of the Eberline AMS-4 Air Monitoring System Using Windows
 0-RP-IC-402, Rev. 1, Calibration and use of the MGP Telepole
 0-RP-IC-601, Rev. 0, Calibration of the Tennelec LB-5100 Alpha-Beta Counting System Using Eclipse
 0-RP-IC-603, Rev. 0, Interchangeable Counting Room Calibration with HP-300
 0-RP-IC-604, Rev. 0, Calibration of the Eberline Model BC-4 Beta Counter
 0-CY-1420, Rev. 2, Radiological Quality Assurance Program
 0-CY-1510, Rev. 4, IPEC Storm Drain Sampling
 0-CY-1900, Rev. 0, Nuclear Environmental Monitoring Sampling and Analysis Schedule
 0-CY-2740, Rev. 1, Liquid Radioactive Effluents
 2-PC-R25, Rev. 15, Main Steam Line Radiation Monitor Detector Calibration (R-28, 29, 30, 31)
 2-PC-R38-1, Rev. 3, High Range Containment Area Radiation Monitor (R-25)
 2-PC-R38-2, Rev. 2, High Range Containment Area Radiation Monitor (R-25)
 2-PC-R38-3, Rev. 3, High Range Containment Area Radiation Monitor (R-26)
 2-PC-R38-4, Rev. 2, High Range Containment Area Radiation Monitor (R-26)
 2-PC-R15B, Rev. 17, VC Area Radiation Monitor Calibration (R-7)
 2-PC-EM4, Rev. 12, Non-VC Area Radiation Monitors Calibration
 2-PC-EM30, Rev. 10, Process Radiation Monitor Calibration (R-41, 42)
 2-PC-2Y23, Rev. 10, Liquid Radiation Monitor Calibration
 3-CY-2325, Rev. 6, Radioactive Sampling Schedule

- 3-IC-RMP-R-7, Rev. 0, Calibration of Radiation Monitor R-7
- 3-PC-R40, Rev. 17, Main Steam Line Radiation Monitor Calibration (R-62)
- 3-PC-OL-48, Rev. 4, Fuel Storage Building Radiation Monitor Calibration (R-5)
- 3-PC-R46A, Rev. 15, Containment High Range Radiation Monitor Calibration (R-25)
- 3-PC-R46B, Rev. 14, Containment High Range Radiation Monitor Calibration (R-26)
- 3-PC-OL-58A, Rev. 2, Process Radiation monitors R11/12 Calibration
- 3-PC-OL-49A, Rev. 2, Steam Generator Blow down Radiation Monitor Calibration (R-19)

Condition Reports (CR):

IP2-2007-04816	IP2-2007-04818	IP2-2008-00055	IP2-2008-00405
IP2-2008-00601	IP2-2008-00770	IP2-2008-01236	IP2-2008-01262
IP2-2008-01391	IP2-2008-01463	IP2-2008-01760	IP2-2008-01823
IP2-2008-02000	IP2-2008-02504	IP2-2008-02621	IP2-2008-02739
IP2-2008-03659	IP2-2008-03661	IP2-2008-03798	IP2-2008-04192
IP2-2008-04428	IP2-2008-05074	IP2-2008-05410	IP2-2008-05411
IP2-2008-05412	IP2-2008-05483	IP2-2008-05516	IP3LO-2008-00069
IP3-2008-00314	IP3-2008-00484	IP3-2008-00516	IP3-2008-00705
IP3-2008-00729	IP3-2008-01454	IP3-2008-01464	IP3-2008-01815
IP3-2008-02117	IP3-2008-02566	IP3-2008-02851	IP3-2007-04640

Other Documents:

- LCOTR # 2-TS-08-0923
- IPEC Radiation Monitoring System Top Ten Technical Issues Action Plan, updated 12/17/08
- IPEC Radiation Monitoring System Long Range Plan Plan, updated 12/17/08
- IPEC Radiation Monitoring System Condition Report Trend Review, updated 12/17/08
- RMS Maintenance Improvement Plan, updated 12/17/08
- Units 2 and 3 System Health Report for 2008
- ER No. 04-2-042, R-41 / 42 Reliability Improvements Engineering Review package
- Radiation Monitor, Portable Radiation Monitoring Instrumentation, and Calibrator Calibration Sheets
- C.A.R.E Authorized Repair Center Certifications
- DUKE / NUPIS Member Audit Report of General Engineering Laboratories, LLC (GEL)
- IPEC: Nuclear Energy Institute Groundwater Protection Initiative Self Assessment Checklist, dated July 2008.

Section 40A1: Performance Indicator Verification

Procedures

- EN-LI-114, "Performance Indicator Process," Rev. 2
- EN-LI-114, Attachment 9.2, "NRC Performance Indicator Technique/Data Sheet," Rev. 2, Second Quarter 2007 thru First Quarter 2008
- NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 5

Other Documents

- Indian Point Unit 3 Operating Logs

Section 40A2: Problem Identification and Resolution

Condition Reports

IP2-2006-06939	IP2-2007-00259	IP2-2007-01599	IP2-2007-03706
IP3-2007-03619	IP3-2007-00453	IP2-2008-01056	IP2-2008-03671

IP2-2008-02907	IP2-2008-02624	IP2-2008-02725	IP2-2008-03511
IP2-2008-03956	IP2-2008-04020	IP2-2008-01057	IP2-2008-03330
IP2-2008-03309	IP2-2008-03310	IP2-2008-00389	IP2-2008-00464
IP3-2008-00640	IP3 2008-01285	IP3-2008-01745	IP3-2008-02137
IP3-2008-03013	IP3LO-2008-00004	IP3LO-2008-00111	IP3LO-2008-00143
IP3LO-2008-00172	IP3LO-2008-00178	IP3LO-2008-00179	IP3LO-2008-00180
HQN-2008-00339	LO-WTIPC-2008-00043		

Procedures

SOP-27.3.1.1, "21 Emergency Diesel Generator Manual Operation," Rev. 16 and 17
 ICPM-0708-1, "13.8 KV L&P bus section 3 partial differential relays (87B2-A/B/C)," Rev. 0
 3-REF-003-Gen, "Reactor Core Refueling"
 SOV-003-ELC, "Inspection and Testing of Target Rock Solenoid Operated Valves"
 EN-LI-122, "Common Cause Evaluation," Rev. 1
 EN-LI-119, "Apparent Cause Evaluation (ACE) Process," Rev. 7
 EN-LI-102, "Corrective Action Process," Rev. 13
 EN-OP-117, "Operations Assessments," Rev. 50
 3-SOP-NI-001, "Excure Nuclear Instrumentation System Operation," Rev. 22
 2-SOP-ESP-001, "Local Equipment Operation and Contingency Actions," Rev. 3
 3-PT-M079C, "33 EDG Functional Test," Rev. 36

Miscellaneous Documents

NRC IR 05000247/2008001 & 05000286/2008001 "Annual Assessment Letter – Indian Point Nuclear Generating Units 2 and 3" Dated March 3, 2008
 NRC "Mid Cycle Performance Review and Inspection Plan – Indian Point Nuclear Generating Station Units 2 and 3" dated September 2, 2008.
 NRC Inspection Report 05000247/2008010 "Indian Point Nuclear Generating Station Unit 2- NRC Problem Identification and Resolution Inspection Report" dated July 24, 2008
 Indian Point Energy Center Procedure Adequacy Cross-Cutting Issue Resolution Plan Rev 4 Dated September 9, 2008
 Indian Point Energy Center Procedure Adequacy Cross-Cutting Issue Resolution Plan Revs 0-3
 Maintenance Department Procedure Improvement Plan (No date)
 Human Performance Training Plan and slides "Doer, Reader, Peer Checker, and Pilot" exercise.
 Human Performance Training Plan and slides "Human Performance for IPEC Personnel"
 Operations Procedure Upgrade Project Communications plan for Operations personnel.
 Procedure Adequacy Cross-Cutting Resolution Plan Slideshow dated 10/20/08
 Procedure Adequacy Cross-Cutting Resolution Plan Slideshow update dated 12/5/08
 Plant Operating Procedures (POP) Procedure Upgrade Project Plan dated 9/9/08
 Plant Operating Procedures (POP) Procedure Upgrade Project Plan Rev 2 dated 10/26/08
 Performance Indicators and worksheets for Procedure Workdown Curves, Procedure Feedback Forms, NRC Findings, Equipment Reliability, and Preventive Maintenance Completion.
 Indian Point Units 2 and 3 Summary of Findings/ Violations Report dated 12/1/08
 Equipment Reliability Index Performance Indicator Guidance Book Revision 4 and Data
 Human Performance Cross Cutting Resolution Plan Presentation dated 12/2/08
 IPEC Open CR Inventory Report run 12/1/08
 IPEC CRG Summary Agenda Report for 12/2/08
 IPEC CARB Meeting Agenda Report for 12/2/08

Section 40A5: Other Activities

EnergySolutions Procedure FP-FO-WI-001, Rev. 0, Spent Fuel Pool Cleaning at Indian Point

Unit 1

Entergy Procedure 1-RP-RWM-913, Rev. 1, Unit 1 Fuel Handling Building West Pool 24/7
Demineralizer System

Entergy Work Order 00123484 10, Modifications to the FHB West Pool Demineralization
System

Completed Surveillance Procedures

3-PT-M079A, Rev. 36, 31 EDG Functional Test, completed July 8, August 6, and Sept. 4, 2008

3-PT-M079B, Rev. 37, 32 EDG Functional Test, completed July 9, August 6, and Sept. 2, 2008

3-PT-M079C, Rev. 36, 33 EDG Functional Test, completed July 11, August 8, and Sept. 3, 2008

Procedures

3-PT-R160A, Rev. 11, 31 EDG Capacity Test

Calculations

IP3-CALC-ED-00207, Rev. 7, 480 V Bus 2A, 3A, 5A, & 6A and EDGs 31, 32 & 33 Accident
Loading

Other Documents

Indian Point Nuclear Generating Unit No. 3, Updated Final Safety Analysis report, Chapter 8,
Rev. 02, 2007

MI-11272C, Engine Maintenance Schedule, Nuclear Standby Engines developed by ALCO
Owner's Group and FM/ALCO

Indian Point Nuclear Generating Unit No. 3 Technical Specifications, Section 3.8, Electrical
Power Systems, through Amendment 226

Indian Point Nuclear Generating Unit No. 3 Technical Specifications Bases, Section 3.8,
Electrical Power Systems, Rev. 3

LIST OF ACRONYMS

ADAMS	Agency Wide Document Management System
ALARA	As Low As is Reasonably Achievable
ANS	Alert and Notification System
AOPs	Abnormal Operating Procedure
CAP	Corrective Action Program
CB	Control Building
CCW	Component Cooling Water
CEDE	Cumulative Effective Dose Equivalent
CFR	Code of Federal Regulations
CR	Condition Report
CS	Containment Spray
DEC	Department of Environmental Conservation
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EDO	Executive Director of Operations
EOPs	Emergency Operating Procedures
FCU	Containment Fan Cooler Unit
GL	NRC Generic Letter
GSI	Generic Safety Inspection
I&C	Instrumentation and Controls
IN	Information Notice
INPO	Institute of Nuclear Power Operations
IP	Inspection Procedure
IVSW	Isolation Valve Seal Water
LCO	Limiting Condition for Operation
LER	Licensee Event Report
mRem	Millirem
MS	Main Steam
MW	Monitoring Well
NCV	non-cited violation
NEI	Nuclear Energy Institute
NIST	National Institute of Science and Technology
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PAB	Primary Auxiliary Building
PARS	Publicly Available Records
PI	Performance Indicator
PI&R	Problem Identification and Resolution
POP	Plant Operating Procedures
PRA	Probabilistic Risk Assessments
PWR	Pressurized-Water Reactors
QA	Quality Assurance
RCA	Radiological Controlled Area
RMS	Radiation Monitoring Systems
RP	Radiation Protection
RWP	Radiation Work Permit
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SFP	Spent Fuel Pool

SI	Safety Injection
SSC	Structures, Systems, and Components
SW	Service Water
SWP	Service Water Pump
TI	Temporary Instruction
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report