



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

August 13, 2019

Mr. Anthony J. Vitale
Site Vice President
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, General Services Building
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING, UNITS 2 AND 3 – INTEGRATED
INSPECTION REPORT 05000247/2019002 AND 05000286/2019002

Dear Mr. Vitale:

On June 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating, Units 2 and 3. On July 17, 2019, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Indian Point.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; and the NRC Resident Inspector at Indian Point.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* (CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Daniel L. Schroeder, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos. 05000247 and 05000286
License Nos. DPR-26 and DPR-64

Enclosure:
As stated

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000247 and 05000286

License Numbers: DPR-26 and DPR-64

Report Numbers: 05000247/2019002 and 05000286/2019002

Enterprise Identifier: I-2019-002-0042

Licensee: Entergy Nuclear Operations, Inc.

Facility: Indian Point Nuclear Generating, Units 2 and 3

Location: 450 Broadway, General Services Building
Buchanan, NY 10511-0249

Inspection Dates: April 1, 2019, to June 30, 2019

Inspectors: B. Haagensen, Senior Resident Inspector
A. Siwy, Resident Inspector
J. Vazquez, Resident Inspector
N. Floyd, Senior Reactor Inspector
O. Masnyk Bailey, Health Physicist
J. Nicholson, Senior Health Physicist
K. Warner, Health Physicist

Approved By: Daniel L. Schroeder, Chief
Reactor Projects Branch 2
Division of Reactor Projects

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Indian Point Nuclear Generating, Units 2 and 3, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Scaffolding Installed in Close Proximity to Safety-Related Equipment without Adequate Engineering Evaluation			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000286/2019002-01 Open/Closed	[H.13] - Consistent Process	71111.20
The inspectors identified a Green non-cited violation of Title 10 of the <i>Code of Federal Regulations</i> (CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because the licensee did not adequately develop engineering evaluations, in accordance with established procedures, for scaffolding that was in close proximity to safety-related equipment. Specifically, between February 28 and April 2, 2019, the inspectors identified 17 instances in which scaffolding configurations deviated from established design guidelines without adequate evaluation.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000247/2019-001-00	Automatic Reactor Trip as a Result of a Turbine-Generator Trip Due to a Loss of Generator Excitation	71153	Closed
LER	05000247/2019-002-00	Automatic Reactor Shutdown Due to Turbine Trip Caused by Generator Trip	71153	Closed

PLANT STATUS

Unit 2 began the inspection period in a forced outage. Unit 2 returned to 100 percent rated thermal power on April 1, 2019. On April 2, 2019, Unit 2 was shutdown from 100 percent rated thermal power to troubleshoot alarms on the main turbine generator exciter. Unit 2 returned to 100 percent rated thermal power on April 5, 2019, and remained at or near rated thermal power for the remainder of the inspection period. Unit 3 began the inspection period in a refueling outage. Unit 3 returned to 100 percent rated thermal power on April 9, 2019, and remained at or near 100 percent for the remainder of the inspection period

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Summer Readiness Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated summer readiness of offsite alternating current (AC) and onsite alternate AC power systems at Units 2 and 3.

Seasonal Extreme Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions (hurricane season) for the 480 volt and 125 volt systems at Units 2 and 3.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) 21 emergency diesel generator at Unit 2 on May 1, 2019
- (2) 33 emergency diesel generator at Unit 3 on May 21, 2019
- (3) 22 auxiliary feedwater pump at Unit 2 on June 3, 2019
- (4) 23 emergency diesel generator at Unit 2 on June 10, 2019

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (8 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Primary auxiliary building, general floor plan, 41-foot elevation (PFP-306), at Unit 3 on April 9, 2019
- (2) Primary auxiliary charging pumps, 55-foot elevation (PFP-307B), at Unit 3 on April 9, 2019
- (3) Primary auxiliary building, general floor plan, 68-foot elevation (PFP-208), at Unit 2 on April 9, 2019
- (4) Primary auxiliary building, general floor plan, 72-foot elevation (PFP-308), at Unit 3 on April 9, 2019
- (5) Circulating and service water pump building (PFP-385) at Unit 3 on April 25, 2019
- (6) Appendix R/station blackout diesel (PFP-160A) at Unit 2 on June 3, 2019
- (7) 480 volt switchgear room, Control building (PFP-251), at Unit 2 on June 4, 2019
- (8) Diesel generator building, electrical tunnel exhaust fans (PFP-258), at Unit 2 on June 10, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Underground Cables (IP Section 02.02c.) (1 Sample)

The inspectors evaluated cable submergence protection in:

- (1) Manhole B at Units 2 and 3 on April 15, 2019

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) 21 emergency diesel generator jacket water to lube oil heat exchanger performance at Unit 2 on May 13, 2019

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (3 Samples)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during reactor startup and return to power at Unit 2 on April 1, 2019.
- (2) The inspectors observed and evaluated licensed operator performance in the control room during reactor shutdown at Unit 2 on April 2, 2019, and reactor startup at Unit 2 on April 4, 2019.
- (3) The inspectors observed and evaluated licensed operator performance in the control room during the reactor startup following Unit 3 refueling outage 3RFO20 on April 8 and 9, 2019.

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (2 Samples)

- (1) The inspectors observed and evaluated operator performance during licensed operator requalification training scenario I2SX-LOR-SES000 at the Unit 2 simulator on April 29, 2019.
- (2) The inspectors observed and evaluated operator performance during an emergency preparedness drill as part of licensed operator training at the Unit 3 simulator on May 22, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) SI-MOV-885A and SI-MOV-885B containment sump suction anchor darling double disc gate valves at Unit 3 on March 22 to April 9, 2019
- (2) 23 pressurizer backup heater transformer failure at Unit 2 on April 10, 2019

Quality Control (IP Section 02.02) (1 Sample)

The inspectors evaluated maintenance and quality control activities associated with the following equipment performance issues:

- (1) 23 static inverter failure at Unit 2 on April 12, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (7 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Planned yellow core cooling and reactor coolant system integrity risk with reduced inventory during reactor coolant system vacuum pull at Unit 3 on April 3, 2019
- (2) Planned elevated risk due to 23 charging pump surveillance at Unit 2 on April 8, 2019
- (3) Planned yellow risk due to planned surveillances on the 21 auxiliary feedwater pump at Unit 2 on April 22, 2019
- (4) Emergent elevated risk with potential seismic hazards introduced by scaffolding in close proximity to the 32 emergency diesel generator at Unit 3 on May 14, 2019
- (5) Planned yellow risk due to planned safety injection logic testing at Unit 2 on June 3, 2019
- (6) Planned yellow risk for 5-year preventive maintenance on the 32 component cooling water pump at Unit 3 on June 19, 2019
- (7) Planned yellow risk for surveillance testing of the 32 turbine-driven auxiliary feedwater pump at Unit 3 on June 24, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) 32 safety injection pump with pump flow outside of range specified in surveillance test criteria at Unit 3 on March 27, 2019 (CR-IP3-2019-01491)
- (2) Pressurizer sample line containment isolation valves AOV-956B and AOV-956D failed their stroke time test at Unit 3 on April 11, 2019 (CR-IP3-2019-01706)
- (3) 21 auxiliary feedwater pump increase in vibrations at Unit 2 on April 23, 2019 (CR-IP2-2019-01820)
- (4) Service water and containment isolation capabilities with leakage on the 32 fan cooler unit discharge line at Unit 3 on May 1, 2019 (CR-IP3-2019-02144)
- (5) 23 emergency diesel generator following initial overspeed trip test failure on January 17, 2019; operability determination characterization reviewed at Unit 2 on May 14, 2019 (CR-IP2-2019-00310)

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (3 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Engineering Change 72810 - Permanent modification for reactor pressure vessel head flange O-ring replacement at Unit 3
- (2) Engineering Change 80871 - Permanent modification for fuel transfer system motor drive replacement at Unit 3
- (3) Engineering Change 78428 - Permanent modification for Anchor Darling valves to drill wedge pin hole at Unit 3

71111.19 - Post-Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (12 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) 3-PT-R032B-5, 35 fan cooler unit motor replacement at Unit 3 on April 1, 2019 (WO 00483803)
- (2) 3-SOP-RCS-001, 32 and 34 reactor coolant pump seal motor replacement at Unit 3 on April 4, 2019 (WO 57272735)
- (3) EN-MA-148, SI-885A/B (containment spray discharge valves) repairs at Unit 3 on April 6, 2019 (WO 00362442 and WO 00362444)
- (4) EN-MA-148, SI-MOV-889B (containment residual heat removal spray isolation valve) internal repairs at Unit 3 on April 6, 2019 (WO 52773496)
- (5) 3-PT-R131, RC-PCV-445B power-operated relief valve repairs to packing gland follower at Unit 3 on April 6, 2019 (WO 00485190-12)
- (6) 3-PT-Q120B, 32 auxiliary boiler feedwater pump (turbine driven) repairs to CD-122 at Unit 3 on April 7, 2019 (WO 52641165-02)

- (7) EM-MA-143, PCV-1191 (containment pressure relief) 12-year overhaul and regulator replacement at Unit 3 on April 9, 2019 (WO 00485190)
- (8) PFM-119, 23 vital inverter diode and oscillator card replacement at Unit 2 on April 12, 2019 (WO 52497276-04)
- (9) 3-PT-V059D, 34 service water pump reference test following pump replacement at Unit 3 on April 26, 2019 (WO 00487184)
- (10) EN-WM-107, Operational pressure test and non-destructive evaluation for weld repairs to the 32 fan cooler unit discharge line following service water leak at Unit 3 on May 3, 2019 (WO 00523987)
- (11) 2-PT-M021A, 21 emergency diesel generator preventive maintenance at Unit 2 on May 14, 2019 (WO 00502020)
- (12) 2-PT-M021B, 22 emergency diesel generator load test following preventive maintenance and repairs at Unit 2 on June 11, 2019 (WO 52880406 and WO 52880415)

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated Unit 3 refueling outage 3RFO20 activities from April 1 to 9, 2019.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (5 Samples)

- (1) 3-PT-R032B-4, 34 fan cooler unit filtration functional testing at Unit 3 on April 1, 2019
- (2) 3-PT-R003D, Safety injection test at Unit 3 on April 5, 2019
- (3) 3-PT-CS002B, Main steam isolation valve MS-1-32 trip actuating device operational testing at Unit 3 on April 8, 2019
- (4) 2-PT-M022, 23 station battery monthly surveillance at Unit 2 on May 20, 2019
- (5) 2-PT-Q027B, 23 motor-driven auxiliary feedwater pump quarterly surveillance and motor condition assessment test at Unit 2 on June 3, 2019

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

The inspectors evaluated the following emergency preparedness drill:

- (1) Emergency preparedness training drill at Units 2 and 3 on May 22, 2019

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (2 Samples)

- (1) Unit 2 (April 1, 2018, through March 31, 2019)
- (2) Unit 3 (April 1, 2018, through March 31, 2019)

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (2 Samples)

- (1) Unit 2 (April 1, 2018, through March 31, 2019)
- (2) Unit 3 (April 1, 2018, through March 31, 2019)

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (2 Samples)

- (1) Unit 2 (April 1, 2018, through March 31, 2019)
- (2) Unit 3 (April 1, 2018, through March 31, 2019)

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in the corrective maintenance backlog, control room deficiency tags, and open operability evaluations that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (IP Section 02.03) (5 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) NRC Operating Experience Smart Sample 2018/01, *Evaluation of Licensee Actions Taken in Response to 10 CFR Part 21 Notification of the Potential Existence of Defects Related to Control Rod Drive Mechanism Thermal Sleeves*, at Unit 3
- (2) Steam leak on elbow of Unit 3 reheat steam line to the 36C feedwater heater
- (3) Review of the motor condition assessment testing results for large motors and the corrective actions for failed tests at Units 2 and 3
- (4) Review of corrective actions following the installation of the open phase detection circuit after trip circuit was enabled at Units 2 and 3
- (5) NRC Operating Experience Smart Sample 2007/03, Revision 3, *Crane and Heavy Lift Inspection, Supplemental Guidance to IP 71111.20 and IP 71111.13*, at Unit 3

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (2 Samples)

The inspectors evaluated the following licensee event reports (LERs) which can be accessed at <https://lersearch.inl.gov/LERSearchCriteria.aspx>:

- (1) LER 05000247/2019-001-00, Automatic Reactor Trip as a Result of a Turbine-Generator Trip Due to a Loss of Generator Excitation (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19143A093)

The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER; therefore, no performance deficiency was identified. The inspectors also concluded that no violation of NRC requirements occurred.

- (2) LER 05000247/2019-002-00, Automatic Reactor Shutdown Due to Turbine Trip Caused by Generator Trip (ADAMS Accession No. ML19150A115)

The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER; therefore, no performance deficiency was identified. The inspectors also concluded that no violation of NRC requirements occurred.

Personnel Performance (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the licensee's performance during the Unit 2 forced shutdown from 100 percent power in response to main generator exciter alarms on April 2, 2019.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation at Operating Plants

Operation of an Independent Spent Fuel Storage Installation at Operating Plants (1 Sample)

- (1) The inspectors evaluated a Unit 2 independent spent fuel storage installation cask loading on April 15 to 24, 2019. Specifically, the inspectors observed the following activities:
 - Fuel selection and fuel loading
 - Heavy load movement of the transfer cask and loaded multipurpose canister
 - Forced helium drying and backfill evolutions
 - Closure welding and non-destructive weld evaluations
 - Stack up and transfer evolutions
 - Radiological field surveys

INSPECTION RESULTS

Scaffolding Installed in Close Proximity to Safety-Related Equipment without Adequate Engineering Evaluation			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000286/2019002-01 Open/Closed	[H.13] - Consistent Process	71111.20
<p>The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because the licensee did not adequately develop engineering evaluations, in accordance with established procedures, for scaffolding that was in close proximity to safety-related equipment. Specifically, between February 28 and April 2, 2019, the inspectors identified 17 instances in which scaffolding configurations deviated from established design guidelines without adequate evaluation.</p> <p><u>Description:</u> Entergy procedure EN-MA-133, "Control of Scaffolding," Revision 19, states that engineering review and documented approval is required for instances where installed scaffolding is either touching plant equipment or is positioned less than 2 inches away from safety-related equipment. Such controls are put in place to ensure that scaffolding will not inadvertently affect the operability of safety-related equipment during a seismic event.</p> <p>Prior to the start of the Spring 2019 Unit 3 refueling outage 3RFO20, on February 28 and March 8, 2019, the inspectors walked down scaffolds which had been erected in preparation for outage-related activities, while the unit was operating at rated thermal power. During these walkdowns, the inspectors identified 13 instances where scaffolding had been erected and was within 2 inches of safety-related equipment, but where the required engineering evaluation, completed using Attachment 9.5 of the procedure, had not addressed these deviations from the design standards. In three of these instances, scaffolding was actually found to be in contact with the equipment.</p> <p>Identified instances of scaffolding issues included the following:</p> <ul style="list-style-type: none"> • Scaffolding in contact with a 31 safety injection pump discharge isolation valve • A scaffold footboard in contact with a fan cooler unit service water supply line • A footboard in contact with a flange on a fan cooler unit service water inlet line • Scaffolding within 2 inches of the 32 turbine-driven auxiliary feedwater pump main steam supply line • A scaffold post with less than half an inch of clearance from the 33 auxiliary feedwater pump discharge line • A scaffold that was within 2 inches of containment spray piping and valves at five separate locations • Multiple instances of scaffolding within 2 inches of safety injection system piping, component cooling water piping and equipment, and steam generator feedwater inlet isolation valves <p>The licensee captured these 13 identified scaffolding issues in the following condition reports:</p> <ul style="list-style-type: none"> • CR-IP3-2019-00648 • CR-IP3-2019-00749 			

- CR-IP3-2019-00757
- CR-IP3-2019-00758

Following identification of these unevaluated conditions, civil engineering staff developed revised evaluations, which concluded that there would have been no impact on safety-related equipment from any of the instances identified. These conclusions were based on the rigidity of the scaffolding as-built and the positioning of scaffolding bracing. The licensee did, however, make adjustments to certain scaffolds, to remove points of actual physical contact and/or to establish a more conservative margin to safety. Additionally, the licensee reinforced the design standards among the engineers responsible for conducting the initially inadequate engineering evaluations and documented an associated area for improvement as a human performance observation in their work management system.

After the start of the refueling outage 3RFO20, between March 18 and April 2, 2019, the inspectors performed additional walkdowns of scaffolding that had been erected inside the containment building. During these walkdowns, the inspectors identified four instances of scaffolding for which a required engineering evaluation had not been performed. Identified issues (and associated condition reports) included the following:

- Two instances of scaffolding in contact with cabling conduit (CR-IP3-2019-01140)
- Scaffolding within 2 inches of component cooling water piping (CR-IP3-2019-01445)
- Scaffolding in contact with a containment purge duct (CR-IP3-2019-01593)

Following identification of these issues, engineering evaluated each of the scaffolds and again determined that there would have been no impact on safety-related equipment from any of the instances identified.

In these four additional instances, the associated engineering evaluations had not been requested by the responsible scaffolding construction crews because they were under the impression that scaffolds did not require evaluations if they were located inside the containment building after plant shutdown, with the exception of a few particular areas (such as the residual heat removal heat exchanger cubicle). Such an exception to the requirements, however, had not been documented in an engineering evaluation and was not listed in the scaffolding control procedure. Furthermore, in three of the four instances, a preliminary job site walkdown performed and documented by operations had explicitly stated that the scaffolding was to be erected near risk-significant plant equipment. These walkdowns had been completed prior to scaffolding erection, using Attachment 9.1 of the procedure.

Following the identification of scaffolding issues during the outage, the licensee documented the trend of inadequately evaluated scaffolding in their corrective action program (CR-IP3-2019-01531) on March 28, 2019. The licensee thereafter performed extent-of-condition walkdowns of all scaffolds onsite and reinforced the clearance requirements among personnel responsible for the construction of scaffolding.

During their review, the inspectors noted that EN-MA-133 had not been designated as a "quality-related" procedure, in accordance with the Entergy Quality Assurance Program Manual (QAPM). The QAPM governs which procedures are classified as being subject to the requirements of 10 CFR Part 50, Appendix B. The QAPM policy statement states, in part, that the quality assurance program is applied to "certain quality-related equipment and

activities that are not-safety related but support safe plant operations.” The QAPM also states that the design control program is implemented, in part, to ensure that “activities associated with the design of [structures] are executed in a planned, controlled, and orderly manner.” Controlling the construction of scaffolds in accordance with established design guidance is intended, in part, to ensure that scaffolds will not have an adverse effect on the operability of safety-related equipment during a design-basis seismic event. The inspectors therefore concluded that the procedure governing scaffolding construction (EN-MA-133) should have been scoped as a quality-related procedure. The licensee documented this in a fleet-level CR (CR-HQN-2019-01415), and after reviewing the associated requirements, fleet management agreed with the inspectors' conclusions.

Corrective Actions: The licensee performed extent-of-condition walkdowns of all scaffolds onsite, addressing issues where necessary. The licensee revised associated engineering evaluations (or, where necessary, developed evaluations) to assess conditions and provide the necessary basis to conclude that potentially affected equipment remained operable. The licensee reinforced established requirements for scaffolding construction and evaluation among the personnel responsible for these activities.

Corrective Action References: CR-IP3-2019-00648, CR-IP3-2019-00749, CR-IP3-2019-00757, CR-IP3-2019-00758, CR-IP3-2019-01140, CR-IP3-2019-01445, CR-IP3-2019-01531, CR-IP3-2019-01593, CR-HQN-2019-01415

Performance Assessment:

Performance Deficiency: Entergy Procedure EN-MA-133, "Control of Scaffolding," Revision 19, requires that engineering approval be documented when seismic scaffolding deviates from the established design guidance. However, between February 28 and April 2, 2019, inspectors identified 17 instances in which scaffolding configurations deviated from established requirements for separation from plant equipment, but in which the licensee had not documented adequate engineering evaluations.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Factors attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, scaffolding was either touching plant equipment or in close proximity to safety-related equipment without an engineering evaluation that provided reasonable assurance that the operability of potentially affected equipment would be maintained during a seismic event. This issue was similar to Example 4.a in IMC 0612, Appendix E, because the licensee had routinely failed to perform engineering evaluations on similar issues.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." For those issues identified during the refueling outage 3RFO20, the inspectors assessed the significance using Appendix G, "Shutdown Operations Significance Determination Process." The issue was determined to be of very low safety significance (Green), because, in each instance, potentially affected safety-related equipment was determined to have maintained operability.

Cross-Cutting Aspect: H.13 - Consistent Process: Individuals use a consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate. Specifically, regarding this finding, in instances where engineering evaluations did not adequately identify

and assess deviations from established design standards, the responsible individuals did not demonstrate consistent processes for thoroughly conducting these evaluations. In instances where an engineering evaluation was not requested, the organization did not demonstrate a consistent decision-making process that aligned with established procedures. In these instances, the organization did not seek sufficient input across work groups to ensure that risk was adequately assessed and mitigated.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion V, states, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Entergy Procedure EN-MA-133, "Control of Scaffolding," Revision 19, states, in part, that engineering approval shall be documented when it is determined that seismic scaffolding will deviate from the established design guidance. This guidance includes the requirement that scaffolding components maintain a horizontal and vertical separation of at least 2 inches from safety-related equipment. Contrary to these requirements, between February 28 and April 2, 2019, inspectors identified multiple instances of scaffolding in close proximity to safety-related equipment, wherein required engineering evaluations either had not been performed, or wherein the documented evaluations did not adequately consider locations at which scaffolding was separated from plant equipment by less than 2 inches.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Observation: Semiannual Trend Analysis - Assessment of Corrective Maintenance Backlog, Control Room Deficiency Tags, and Open Operability Evaluations	71152
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This semiannual trend analysis has been focused on an assessment of corrective maintenance backlog, control room deficiency tags, and open operability evaluations.

Corrective maintenance backlog: The backlog of corrective maintenance work orders has significantly decreased following the Unit 3 refueling outage that was completed in April 2019. The overall reduction was 82 percent (from 165 to 29 maintenance items) during the 6-month period from January to July of 2019.

- There were no corrective critical maintenance backlog items.
- The number of corrective non-critical maintenance backlog items was reduced from four to two.
- The number of deficient critical maintenance backlog items was reduced from 14 to 1.
- The number of deficient non-critical maintenance backlog items was reduced from 147 to 26.

Control room deficiency tags: Indian Point does not use control room deficiency tags. Instead, they affix small operator labels to control room displays or controls that do not function as designed. The number of control room deficiencies is as follows as of June 12, 2019:

- Unit 2: Two control room deficiencies
- Unit 3: Two control room deficiencies

The inspectors determined the licensee's use of control room deficiencies met all regulatory requirements.

Open operability evaluations: The inspectors searched the condition reporting system for all condition reports that described equipment that had been categorized as “inoperable” during the past 6 months. 125 condition reports were written on equipment that was categorized as inoperable in the condition reporting system. The clear majority of these condition reports had been closed to work orders which were either completed and the equipment had been restored to an operable status or were scheduled for completion.

Currently, there are eight condition reports that are categorized as “operable but degraded”. These included:

- CR-IP2-2012-06255 – High energy line break evaluation for the Unit 2 turbine building
- CR-IP3-2012-03262 – High energy line break evaluation for Unit 3 turbine building
- CR-IP2-2014-04414 – Unit 2 Boraflex™ degradation in the spent fuel pool
- CR-IP2-2016-04959 – Unit 2 degraded Boraflex™ panel
- CR-IP2-2018-01697 – Unit 2 stud 20 stuck in the reactor pressure vessel
- CR-IP2-2018-02127 – Unit 2 13 degraded baffle bolts identified
- CR-IP3-2019-01335 – Unit 3 12 degraded baffle bolts identified
- CR-IP2-2019-02509 – Unit 2 SOV-1258 missing downward pointing elbow

The inspectors determined the licensee's operability determinations met regulatory requirements.

Observation: Annual Follow-Up of Selected Issues - Review of Corrective Actions Following the Installation of the Open Phase Detector (OPD) and Enabling of the Automatic Transformer Trip Circuit	71152
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In 2014, the licensee responded to NRC Bulletin 2012-01 by describing the actions they intended to take regarding the installation of an OPD system (Entergy Letter NL-14-015, Subject: Response to Request for Additional Information Regarding Response to Bulletin 2012-01, "Design Vulnerability in Electric Power System," Indian Point, Units 2 and 3). The OPD system was designed to alert the operators and prevent equipment damage if one or two phases open on an electrical transformer. The OPD system was subsequently installed at both Units 2 and 3 and operated for a year as an open phase warning system.

The inspectors previously completed Temporary Instruction 2515/192, “Inspection of the Licensee’s Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems,” in April 2017 and IP 71111.18, “Open Phase Detection Circuit Modification,” in October 2017 where several issues of concern were identified and placed into the corrective action program for resolution.

At the end of 2018, the OPD trips were enabled for both units on the 138kV system auxiliary transformers and the 13.8kV gas turbine autotransformers. The inspectors reviewed the operating experience gained during the implementation of the OPD systems and any associated remaining corrective actions. The system experienced several incidents where the OPD system warned of an open phase condition in response to a grid transient when a valid open phase condition did not exist prior to enabling the transformer trip circuits. As a result of this operating experience, the licensee was able to adjust the OPD system trip threshold to prevent spurious actuations. The licensee also completed all necessary operator

training, updated the plant-specific simulators, and implemented alarm response procedures to operate and monitor to the OPD system. The inspectors observed that both OPD systems had operated after this without any spurious detections. The OPD system was also correctly scoped into the maintenance rule. The inspectors concluded that the corrective actions for implementation of the OPD were acceptable.

Observation: Annual Follow-Up of Selected Issues - Crane and Heavy Lift Inspection, Supplemental Guidance to IP 71111.20 and IP 71111.13	71152
<p>The inspectors reviewed the licensee's activities related to heavy lift activities and heavy lift equipment reliability. The inspectors also reviewed the licensee's procedures controlling heavy lifts. The inspectors reviewed the licensee's responses to Generic Letters GL 80-113 and GL 81-07 addressing control of heavy loads. In addition, the inspectors reviewed procedures for crane preventive maintenance against applicable industry standards and verified that crane testing and inspection procedures are completed prior to use. The inspectors also reviewed Technical Evaluation Report Control of Heavy Loads New York Power Authority, Indian Point, Unit 3, dated January 1985, and Indian Point, Units 2 and 3, Closure Head Drop Evaluation from Westinghouse Electric Company, dated February 2009. The review for this sample was conducted in accordance with the NRC Operating Experience Smart Sample 2007/03, Revision 3, <i>Crane and Heavy Lift Inspection, Supplemental Guidance to IP 71111.20 and IP 71111.13</i>. The inspectors determined the licensee's heavy lift procedures aligned with their commitments for conducting heavy lift activities and that the licensee has a preventive maintenance program in place based on vendor recommendations. The inspectors verified the licensee's load drop analysis bounds their lifting procedures with regard to maximum lift height of the reactor vessel head. The inspectors also verified that the load drop analysis bounds its lifting procedures with regard to the medium through which the drop would occur. The inspectors verified that the methodology and acceptance criteria used in the load drop analysis are consistent with Section 2 of Nuclear Energy Institute 08-05.</p>	

Observation: Annual Follow-Up of Selected Issues - Condition Report CR-IP3-2018-01501, Part 21, Notification Westinghouse Control Rod Drive Mechanism Thermal Sleeve Wear for Unit 3	71152
<p>The inspectors assessed the licensee's corrective actions associated with CR-IP3-2018-01501 to address the recommendations of NSAL 18-1, <i>Thermal Sleeve Flange Wear Leads to Stuck Control Rod</i>. This condition was identified at a foreign nuclear power plant and is described in NRC Information Notice 2018-10 (ADAMS Accession No. ML18214A710). The inspectors reviewed the licensee's visual inspection completed during the Unit 3 refueling outage 3RFO20 in March 2019. The review for this sample was conducted in accordance with the NRC Operating Experience Smart Sample 2018/01, <i>Evaluation of Licensee Actions Taken in Response to 10 CFR Part 21, Notification of the Potential Existence of Defects Related to Control Rod Drive Mechanism Thermal Sleeves</i> (ADAMS Accession No. ML18263A261). The inspectors determined the licensee's response implemented the recommendations was timely, commensurate with the safety significance of the issue, and included appropriate corrective actions involving planned actions to monitor via visual inspection.</p>	

Observation: Annual Follow-Up of Selected Issues - Motor Condition Assessment (MCA) Testing Corrective Actions	71152
<p>The inspectors reviewed the corrective actions for several condition reports that were related to the implementation of the large motor MCA testing program. The inspectors concluded the large motor MCA program test results have limited value in predicting motor performance.</p>	

Over the past 10 years, the licensee has implemented a program for large motor MCA testing using advanced computerized electrical test equipment. These tests consist of the electrical stimulation of the motor rotor and stator by various voltage waveforms that are monitored by computerized testing equipment and assessed for any signs of electrical degradation. Specifically, the MCA tests often include tests such as polarization index, winding turn-to-turn resistance, winding resistance to ground, a stepped voltage test, and a surge test. The latter two tests are performed at voltages that are significantly higher than the nominal working voltage of the motor and may lead to motor failure during the test if the windings are degraded. The purpose of MCA testing is to predict motor electrical degradation prior to motor failure.

The results of MCA testing show that failure prediction for large motors has limited value. Some motors have not failed the MCA test but have failed while in service. Correlation of MCA test data to actual predicted motor failures has not been statistically reliable. However, the industry has long recognized that MCA testing can be a valid indicator of electric degradation that will eventually proceed to failure. There have been recent examples of these MCA testing outcomes.

Some motors have failed an MCA test but remain satisfactorily in service. The 36 service water pump motor was identified as having adverse MCA test data trends but currently remains in service. On March 4, 2019, the 23 auxiliary boiler feedwater pump (motor drive auxiliary feedwater pump) failed MCA testing (CR-IP2-2019-00438). On June 3, 2019, the MCA was repeated (WO 52717159-10), and the 23 auxiliary boiler feedwater pump motor passed the MCA surge test. There was no difference in the test implementation or procedure and the rotor did not have to be realigned to pass the test. Other examples of large motors that have not passed MCA testing but remain in service without failing include: 21 service water pump, 22 component cooling water pump, and 21 safety injection pump (CR-IP2-2018-04789 / WO 00508871/2/3). The MCA testing results for these motors were independently evaluated by a vendor under CA2 on June 3, 2019, but no recommendations were available.

Some motors failed in service after having previously failed an MCA test. On July 30, 2018, the 33 condensate pump motor (non-safety-related) failed while in operation (CR-IP3-2018-02157). In 2011, the periodicity for the replacement of this motor had been extended from 6 years to 8 years. This motor had previously failed MCA testing on March 30, 2017, and was scheduled to be replaced during the Unit 3 refueling outage 3RFO20 in 2019. An equipment failure evaluation indicated that the direct cause of the failure was the degradation of the turn-to-turn motor windings resulting a short to ground but a contributing cause was that the motor was operating in an adverse environment. Corrective actions were specified to increase the frequency and effectiveness of inspections and to decrease the motor replacement periodicity from 8 years back to 6 years.

Some motors failed in service without previously failing an MCA test. On September 3, 2018, the 22 service water pump motor failed while in operation (CR-IP2-2018-05003). This motor had been replaced in 2016 but no MCA test results were available for baseline trending. In 2017, the motor exceeded its vibration alert limit. Laboratory analysis of the failure could not identify the cause of failure because of significant internal damage to the motor. Corrective actions included replacing the motor and conducting baseline MCA tests on the new motor.

MCA test results are not routinely considered indicative of equipment operability. A recent prompt operability evaluation for the 23 auxiliary boiler feedwater pump MCA test failure

stated: *“MCA testing is used primarily as a trending tool. This test equipment is not used to determine operability of a motor. The test results neither indicate that the motor will fail when called upon, nor do they give an accurate time when the motor will fail. The information provided by this test is used in determining future PM [preventive maintenance] strategies to prevent failures. The auxiliary boiler feedwater pump motor operates at 480V normally, which is much lower than the voltage used to test the windings. The voltage used to test the windings is approximately 2000V, while this particular winding failed at 1120V.”* The 23 auxiliary boiler feedwater pump motor was determined to be operable (not degraded) even though it did not pass a recent MCA test. However, a failed MCA test (depending on the failure modality) may be indicative of reduced motor reliability, recognizing that there is not a statistically significant correlation between MCA test results and the remaining length of service life. Entergy considers safety-related motors that have not passed MCA tests (depending on the trending of the results) to be operable (not degraded). It may be appropriate to consider large safety-related motors that have failed the MCA test as operable but degraded and to establish compensatory measures to increase the test and inspection frequency to properly track the information in the corrective action program. However, it may be noted that in most cases, MCA test results are being administratively tracked under the work control process (but not under the corrective action program) and may inform decisions to replace or recondition large motors.

Finally, corrective actions for past MCA test failures have identified a lack of training as one of the contributing causes of the equipment failures. CR-IP2-2019-01440 and IP3-IP3LO-2019-00050 CA-34 identified a lack of training as one of the contributing causes to the problems identified in using MCA testing to reliably predict the failure of large motors. A needs analysis was subsequently conducted and in-house training was provided to the licensee.

Observation: Annual Follow-Up of Selected Issues - Review of Flow Accelerated Corrosion Program Corrective Actions	71152
<p>The inspectors performed an in-depth review of the licensee's corrective actions associated with CR-IP3-2018-02773 for a steam leak on an elbow of the Unit 3 reheat steam line to the 36C feedwater heater in November 2018, which resulted in the operators taking actions to trip the reactor and shutting the main steam isolation valves in order to isolate the leak. The NRC previously reviewed the root cause evaluation and documented a Green finding (very low safety significance) because the licensee did not adequately manage the degradation of the 36C feedwater heater reheat steam lines as required by procedure EN-DC-315, “Flow Accelerated Corrosion Program.” Further details on the finding and the cause evaluation can be found in Indian Point Integrated Inspection Report 05000247/2018004 and 05000286/2018004 (ADAMS Accession No. ML19038A398).</p> <p>The inspectors interviewed the Indian Point flow accelerated corrosion program owner, performed a walkdown of the accessible steam lines in the Unit 2 and 3 turbine buildings, and reviewed the licensee's evaluation of the condition to verify that corrective actions were completed to address the cause of the steam line leak. The licensee revised its procedure EN-DC-315 to mark all past failures on the system isometric drawings to ensure other susceptible, adjacent components have been inspected and to provide a visual indication of the system replacement history for the engineer. The licensee also added additional scope expansion guidance to the procedure to help ensure the extent of a worn area is identified when examinations detect degradation. In addition, the licensee revised its CHECWORKS model to split the six reheat steams lines into three separate runs compared to the previous single run, and the licensee reviewed the models for the rest of the Unit 3 systems with</p>	

multibranches to identify any similar issues with the predicted wear rates. The inspectors independently verified the changes to the model were implemented and reviewed a sample of components added to the recent Unit 3 refueling outage 3RFO20 (March to April 2019) as a result of the corrective actions.

The inspectors reviewed the licensee's extent of condition for Unit 2 using the criteria in the revised procedure EN-DC-315. The licensee concluded that there were no gaps or issues requiring examination. The inspectors noted that Unit 2 has significantly more examination coverage history of its susceptible piping components compared to Unit 3, which increases the modeling accuracy and prediction for future examinations. The inspectors also noted that the entire Unit 2 reheat steam system going to the feedwater heaters has been replaced with material not susceptible to flow accelerated corrosion. The inspectors determined the licensee's overall response to the issue was commensurate with the safety significance, was timely, and included appropriate corrective actions.

However, the inspectors identified that the effectiveness review for the root cause corrective action to prevent reoccurrence was performed before the Unit 3 refueling outage 3RFO20. The inspectors determined that performing the effectiveness review after the outage would have been more appropriate to determine whether the action of revising EN-DC-315 had the desired effect. Notwithstanding, the inspectors concluded that this corrective action appeared effective because additional components were selected for examination based on revisions to EN-DC-315 and were subsequently replaced as a result of those examinations during the outage.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On July 17, 2019, the inspectors presented the integrated inspection results to Anthony J. Vitale, Site Vice President, and other members of the licensee staff.
- On April 24, 2019, the inspectors presented the independent spent fuel storage installation operational inspection to John Ferrick, General Manager Plant Operations, and other members of the licensee staff.
- On May 16, 2019, the inspectors presented the problem identification and resolution annual inspection on flow accelerated corrosion to Vincent J. Andreozzi, Engineering Director, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
60855.1	Engineering Evaluations	17-2001-00-72.48EVAL		December 22, 2017
	Procedures	2-DCS-009-GEN	MPC Transfer and Hi-Storm Movement	Revision 14
	Procedures	EN-FAP-OU-108	Fuel Handling Process	Revision 7
71111.01	Corrective Action Documents		CR-IP2-2018-06858, CRF-IP2-2019-00037, CR-IP3-2019-01185, CR-IP3-2019-02104, CR-IP3-2019-02410, CR-IP3-2019-02587, CR-IP3-2019-02606	
	Miscellaneous		Transmission Grid Interface and Compliance with NERC Standards	Revision 10
	Procedures	EN-PL-193	NERC Standards	Revision 1
	Procedures	IP-SMM-OP-104	Offsite Power Continuous Monitoring and Notification	Revision 13, February 27, 2012
71111.05Q	Corrective Action Documents Resulting from Inspection		CR-IP3-2019-01901, CR-IP3-2019-02105	
	Miscellaneous		Hydrostatic Test Log for Fire Extinguisher A02712	
	Miscellaneous	PFP-385	Circulating and Service Water Pump Buildings	Revision 11
	Miscellaneous	TCE 19-066	Transient Combustible Evaluation	Revision 0
	Procedures	0-PT-M004	Fire Extinguisher Inspection	Revision 12
71111.06	Corrective Action Documents Resulting from Inspection		CR-IP3-2019-01999, CR-IP3-2019-02039	
71111.11Q	Procedures	0-NF-206	Initial Criticality	Revision 8
	Procedures	2-POP-1.3	Plant Startup from Zero to 45% Power	Revision 100
	Procedures	2-SOP-21.1	Main Feedwater	Revision 67
	Procedures	3-AOP-AIR-1	Air Systems Malfunction	Revision 5
	Procedures	3-POP-1.2	Reactor Startup	Revision 59
	Procedures	3-POP-1.3	Plant Startup from Zero to 45% Power	Revision 70
	Procedures	E-0	Reactor Trip or Safety Injection	Revision 8

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	ES-0.1	Reactor Trip Recovery	Revision 8
	Procedures	ES-02	Natural Circulation Cooldown	Revision 3
71111.12	Corrective Action Documents		CR-IP2-2013-01471, CR-IP2-2019-01686, CR-IP2-2019-01706, CR-IP2-2019-01739	
	Engineering Changes	EC Reply 82142	Basis for De-Scoping SI-MOV-885B from 3R20 Scope	Revision 0
	Miscellaneous	Entergy Letter CNRO-2017-00025 from Mandy Halter to USNRC	Anchor Darling Double Disc Gate Valve Information and Status	December 20, 2017
	Procedures	2-PT-W-20	Electrical Verification, Inverters, and DC Distribution in Modes 1-4	Revision 7
	Procedures	CEP-RR-0002	Repair Replacement Plan Review Form, SI-MOV-885B	Revision 7
	Procedures	EN-MP-125	Control of Material	Revision 12
	Procedures	EN-MP-140	In-Storage Maintenance Process	Revision 12
	Procedures	EN-QV-102	Quality Control Inspection Program	Revision 7
	Procedures	PFM-119	Static Inverter Testing Using the BCT-2000 Computer	Revision 0
	Procedures	PFM-82	BCT-2000 Battery Test Computer Calibration	Revision 5
	Procedures	QAPM	Entergy Quality Assurance Manual	Revision 36
	Work Orders		WO 00362444-01, WO 52497276-04	
71111.13	Corrective Action Documents Resulting from Inspection		CR-IP3-2019-02250	
	Miscellaneous		Unit 3 Operator's Risk Report for May 14, 2019	
	Miscellaneous		Protected Equipment List for NIGHTS Shift	April 3, 2019
	Miscellaneous	EOOS	Unit 2 EOOS On-Line Risk Report	June 3, 2019
	Miscellaneous	EOOS	Unit 3 EOOS Operator's Risk Report	June 19, 2019
	Miscellaneous	EOOS	Unit 3 EOOS Operator's Risk Report	June 24, 2019
	Procedures	EN-MA-133	Control of Scaffolding	Revision 19
	Procedures	EN-WM-104	On Line Risk Assessment	Revision 18
	Procedures	IP-SMM-OU-104	Shutdown Risk Assessment	Revision 17

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.15	Calculations	IP-CALC-11-00025	Head Correction for the Results of the High Head Safety Injection (HHSI) Pump IST Full Flow Test	Revision 0
	Calculations	IP-RPT-09-00067	Indian Point Units 2 & 3 – Design Analytical Limits for Use in Development of Pump Testing Acceptance Criteria	
	Corrective Action Documents		CR-IP2-2019-00310, CR-IP3-2017-01623, CR-IP3-2019-01491, CR-IP3-2019-01960, CR-IP3-2019-02133	
	Corrective Action Documents Resulting from Inspection		CR-IP2-2019-02092	
	Drawings	9321-F-27223	Flow Diagram, Service Water System	Revision 54
	Procedures	2-PT-2Y008C	23 EDG Mechanical Overspeed Trip	Revision 5
	Procedures	3-PT-Q017	Sampling System Valves	Revision 27
	Procedures	EN-OP-104	Operability Determination Process	Revision 16
	Work Orders		WO 00443879, WO 00497551, WR 00456689	
71111.18	Calculations	IP-CALC-2017-00057	Assessment of the AD Steam Wedge Pin in Connection with Flowserve Part 21	Revision 1
	Engineering Changes	EC-72810	IP3 Reactor Vessel O-Ring Replacement (and Vessel and Head Flange Weld Repairs)	Revision 0
	Engineering Changes	EC-78428	Permanent Modification for Anchor Darling Valves to Drill Wedge Pin Hole	Revision 0
	Engineering Changes	PI 915424-01	Indian Point 3 RV Closure Head O-Ring Groove and RV Flange Repair	Revision 1
	Miscellaneous	Entergy Letter CNRO-2017-00025 from Mandy Halter to USNRC	Anchor Darling Double Disc Gate Valve Information and Status	December 20, 2017
71111.19	Calculations	IP3-CALC-SI-01003	Thrust and Torque Limit Calculations for SI-MOV-889B - GL89-10 MOV Program	Revision 4
	Corrective Action Documents		CR-IP2-2016-03171, CR-IP2-2019-01576, CR-IP2-2019-01706, CR-IP3-2019-00918, CR-IP3-2019-01119, CR-IP3-2019-01214, CR-IP3-2019-01244, CR-IP3-2019-01327, CR-IP3-2019-01369, CR-IP3-2019-01381, CR-IP3-2019-02108,	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			CR-IP3-2019-02144	
	Corrective Action Documents Resulting from Inspection		CR-IP3-2019-02077	
	Miscellaneous	Email	From Eric Kenney SUBJ: FWD: PCV-1191 Status	April 9, 2019
	Procedures	2-PT-M021B	Emergency Diesel Generator 22 Load Test	Revision 34
	Procedures	2-PT-W20	Electrical Verification – Inverters and DC Distribution in Modes 1-4	Revision 7
	Procedures	2-SOP-27.3.1.2	22 Emergency Diesel Generator Manual Operation	Revision 28
	Procedures	3-PMP-012-SWS	Service Water Pump Removal and Installation	Revision 24
	Procedures	3-PT-R032B-5	35 Fan Cooler Unit Filtration Functional Test	Revision 10
	Procedures	3-PT-R131	RCS Integrity Leak Test	Revision 15
	Procedures	3-SOP-RCS-001	Reactor Coolant Pump Operation	Revision 59
	Procedures	PFM-119	Static Inverter Testing Using the BCT-2000 Computer	Revision 0
	Procedures	PFM-82	BCT-2000 Battery Test Computer Calibration	Revision 5
	Work Orders		WO 00362442, WO 00362444, WO 00483803, WO 00485190-12, WO 00487184, WO 00521039, WO 00523987, WO 52497276-04, WO 52769945, WO 52772735, WO 52773496	
71111.20	Procedures	0-NF-208	Zero Power Physics Testing	Revision 5
	Procedures	0-SOP-CB-001	Containment Entry and Egress	Revision 2
	Procedures	3-POP-1.3	Plant Startup from Zero to 45% Power	Revision 70
	Procedures	3-SOP-RCS-017	Reactor Vacuum Refill and Mansell Level Monitoring System Operation	Revision 14
	Procedures	3-SOP-RP-020	Draining the RCS/Refueling Cavity	Revision 42
	Procedures	3-SOP-TG-004	Turbine Generator Operation	Revision 60
71111.22	Corrective Action Documents		CR-IP3-2019-01747, CR-IP3-2019-01904	
	Corrective Action Documents Resulting from Inspection		CR-IP3-2019-01957	
	Procedures	2-PT-Q013	Inservice Valve Tests	Revision 54

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	2-PT-Q027B	23 Auxiliary Feed Pump	Revision 21
	Procedures	3-PT-CS002B	Main Steam Isolation Valves	Revision 11
	Procedures	3-PT-R003D	Safety Injection Test	Revision 39
	Procedures	3-PT-R032B-4	34 Fan Cooler Unit Filtration Functional Test	Revision 10
	Work Orders		WO 00483787, WO 52717159-13, WO 52763381, WO 52772312	
71114.06	Miscellaneous		EAL Classification Tables	Revision 18-1
	Procedures	IP-EP-102	Emergency Classification	Revision 12
	Procedures	IP-EP-210	Central Control Room	Revision 23
	Procedures	IP-EP-AD13	EAL Technical Basis Document	Revision 19
71151	Miscellaneous	E-Mail from Clyde MacKaman, Licensing	Reporting NEI Data for Last Four Quarters	May 13, 2019
	Miscellaneous	NEI 99-02	Regulatory Assessment Performance Indicator Guideline	Revision 7
	Procedures	EN-LI-114	Regulatory Performance Indicator Process	Revision 15
71152	Corrective Action Documents		CR-HQN-2018-01672, LO-IP3LO-2019-50-CA23, CR-IP2-2017-04337, CR-IP2-2017-04680, CR-IP2-2018-00047, CR-IP3-2018-00782, CR-IP3-2018-02862, CR-IP2-2018-03480, CR-IP2-2018-03480, CR-IP2-2018-05018, CR-IP2-2019-01106, CR-IP2-2019-01440, CR-IP2-2019-01442, CR-IP3-2018-01501	
	Drawings	EC-H-50010	Erosion Corrosion Inspection Turbine Building and Heater Bay Reheater Drain Piping Isometric from LCV-1105, 1105A, and 1105B to Feedwater Heaters 36A, B, and C	Revision 2
	Drawings	EC-H-50015	Erosion Corrosion Inspection Turbine Building and Heater Bay Reheater Drain Piping Isometric from LCV-1104, 1104A, and 1104B to Feedwater Heaters 36A, B, and C	Revision 2
	Engineering Changes	EC-79394	Update Open Phase Detector SEL-451 Relay Firmware	Revision 0
	Miscellaneous	EP-2015-0015-04-TR	Entergy – Indian Point Energy Center Unit 2 CHECWORKS™ Verification and Validation (V&V) and Pass 2 Evaluation	May 30, 2018
	Miscellaneous	EP-2016-0044-05-TR	Entergy– Indian Point Energy Center Unit 3 CHECWORKS™ SFA V&V and Pass 2	July 19, 2017

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous	IC-OPD-17	Lesson Plan, Open Phase Detection System	Revision 0
	Miscellaneous	IP-RPT-18-00071	IP3 CHECWORKS SFA Model Pass-2 Evaluation Post September 2018 Forced Outage	November 27, 2018
	Miscellaneous	IP-RPT-18-00072	3R20 FAC Scope Expansion Review Post September 2018 Forced Outage	November 29, 2018
	Miscellaneous	LF181631	Failure Evaluation of Elbow 02-15A-06E Upstream of Feedwater Heater 36C at IP3	September 22, 2018
	Miscellaneous	OL-OLI-2018-00110		
	Miscellaneous	PMOS	PM Basis Task Matrix for Large Motors – Medium Voltage	May 22, 2019
	Miscellaneous	PMOS	PM Basis Task Matrix Software Program for Large Motors – Medium Voltage	Interrogated June 3, 2019
	Procedures	EN-DC-159	System and Component Monitoring	Revision 14
	Procedures	EN-DC-344	Large Motor Program	Revision 6
	Procedures	EN-LI-118	Causal Evaluation Process	Revision 29
	Procedures	EN-MA-134	Offline Motor Electrical Testing	Revision 8
	Procedures	EN-PL-161	Zero Tolerance for Unanticipated Equipment Failures	Revision 2
	Work Orders		WO 00412668, WO 00482981, WO 52717159, WO 52771559	