



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

February 10, 2020

Mr. Anthony J. Vitale  
Site Vice President  
Entergy Nuclear Operations, Inc.  
450 Broadway, Generation Support Building  
P.O. Box 249  
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT ENERGY CENTER, UNITS 2 AND 3 – INTEGRATED  
INSPECTION REPORT 05000247/2019004 AND 05000286/2019004

Dear Mr. Vitale:

On December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Energy Center, Units 2 and 3. On January 27, 2020, 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.

No findings or violations of more than minor significance were identified during this inspection.

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* 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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SUBJECT: INDIAN POINT ENERGY CENTER, UNITS 2 AND 3 – INTEGRATED  
INSPECTION REPORT 05000247/2019004 AND 05000286/2019004 DATED  
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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: 05000247/2019004 and 05000286/2019004

Enterprise Identifier: I-2019-004-0041

Licensee: Entergy Nuclear Operations, Inc.

Facility: Indian Point Energy Center, Units 2 and 3

Location: 450 Broadway, Generation Support Building  
Buchanan, NY 10511-0249

Inspection Dates: October 1, 2019, to December 31, 2019

Inspectors: B. Haagensen, Senior Resident Inspector  
A. Siwy, Resident Inspector  
J. Vazquez, Resident Inspector  
T. Hedigan, Operations Engineer  
M. Patel, Operations Engineer  
P. Ott, Operations Engineer  
S. Wilson, Health Physicist

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

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Indian Point Energy Center, 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**

No findings or violations of more than minor significance were identified.

### **Additional Tracking Items**

None.

## PLANT STATUS

Unit 2 began the inspection period at rated thermal power. On December 14, 2019, Unit 2 reduced power to 95 percent in response to a loss of condenser vacuum due to removal of the 21 condenser bay from service. Unit 2 was returned to rated thermal power on December 17, 2019. On December 18, 2019, Unit 2 reduced power to 60 percent due to a feedwater leak. The unit was returned to rated thermal power on December 20, 2019, and remained at or near rated thermal power for the remainder of the inspection period.

Unit 3 began the inspection period at rated thermal power. On October 1, 2019, Unit 3 reduced power to 95 percent for turbine valve testing and subsequent repairs. Unit 3 was returned to rated thermal power on October 3, 2019. Unit 3 remained at or near rated thermal power 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

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

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures for the following systems:
  - Unit 2 auxiliary feedwater system
  - Unit 3 primary auxiliary building heating and ventilation system

#### Impending Severe Weather Sample (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated readiness for impending adverse weather conditions for a high wind warning at Units 2 and 3 on October 17, 2019.

#### External Flooding Sample (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated readiness to cope with external flooding using Operating Experience Smart Sample (OpESS) 2007-02, Revision 3, for the following areas:
  - Unit 2 primary auxiliary building
  - Unit 2 switchyard and 480 volt switchgear room
  - Unit 2 turbine building
  - Unit 3 primary auxiliary building
  - Unit 3 switchyard and 480 volt switchgear room
  - Unit 3 turbine building

#### 71111.04Q - 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) Service water pump piping and supports at Unit 3 on October 25, 2019
- (2) 31 and 33 emergency diesel generators (EDGs) during maintenance on the 32 EDG at Unit 3 on October 28, 2019
- (3) 32 auxiliary feedwater pump during maintenance on the 33 auxiliary feedwater pump at Unit 3 on October 30, 2019
- (4) 33 charging pump during maintenance on the 31 and 32 charging pumps at Unit 3 on November 22, 2019

#### 71111.05Q - Fire Protection

#### Quarterly Inspection (IP Section 03.01) (5 Samples)

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

- (1) Primary auxiliary building, general floor plan, 80-foot elevation (pre-fire plan (PFP)-211), at Unit 2 on October 21, 2019
- (2) Primary auxiliary building, general floor plan, 98-foot elevation (PFP-212), at Unit 2 on October 21, 2019
- (3) Diesel fire pump house (PFP-265) at Unit 2 on November 1, 2019
- (4) Auxiliary feedwater building, all elevations (PFP-259, PFP-260, PFP-261, and PFP-262), at Unit 2 on November 1, 2019
- (5) Control building, battery rooms (PFP-252A), at Unit 2 on November 25, 2019

#### 71111.06 - Flood Protection Measures

#### Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Unit 2 480 volt vital switchgear room on December 4, 2019

## 71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

### Requalification Examination Results (IP Section 03.03) (2 Samples)

- (1) The inspectors reviewed and evaluated requalification examination results at Unit 2 (biennial written and annual operating exams), which were completed on December 9, 2019.
- (2) The inspectors reviewed and evaluated requalification examination results at Unit 3 (biennial written and annual operating exams), which were completed on December 9, 2019.

## 71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

### Unit 3 Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

#### (1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered December 9, 2019.

#### Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee's annual requalification operating test.

#### Administration of an Annual Requalification Operating Test

The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by Title 10 of the *Code of Federal Regulations* (10 CFR) 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives.

#### Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

#### Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

#### Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

### Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant and for meeting the requirements contained in 10 CFR 55.46.

### Problem Identification and Resolution

The inspectors evaluated the licensee's ability to identify and resolve problems associated with licensed operator performance.

## 71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

### Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during main turbine generator stop and control valve testing at Unit 3 on October 1, 2019.

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

- (1) The inspectors observed and evaluated licensed operator performance in the simulator during control room evacuation and alternate safe shutdown (OpE Smart Sample 2012-02) at Unit 2 on November 21, 2019.
- (2) The inspectors observed and evaluated licensed operator performance in the simulator during an emergency planning drill at Unit 3 on November 21, 2019.

## 71111.12 - Maintenance Effectiveness

### Routine Maintenance Effectiveness Inspection (IP Section 02.01) (1 Sample)

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

- (1) Containment equipment hatch closure plug maintenance rule scoping assessment at Unit 3 on November 13, 2019

## 71111.13 - Maintenance Risk Assessments and Emergent Work Control

### Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

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

- (1) Elevated risk during 31 EDG maintenance concurrent with 35 service water pump maintenance at Unit 3 on October 7, 2019
- (2) Emergent yellow risk during 22 EDG testing with concurrent high-wind conditions at Unit 2 on October 17, 2019
- (3) Emergent risk for 33 battery charger after removal from service due to erratic voltage output at Unit 3 on October 23, 2019



### 71111.15 - Operability Determinations and Functionality Assessments

#### Operability Determination or Functionality Assessment (IP Section 02.02) (2 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) (CR-IP2-2019-04264) 22 EDG breaker initially failed to close during monthly test at Unit 2 on October 17, 2019
- (2) (CR-IP3-2019-03698) 33 battery charger erratic voltage output at Unit 3 on October 23, 2019

### 71111.18 - Plant Modifications

#### Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Unit 2 EC-81092, permanent modification to multi-purpose canister 439 lid lift plug repairs

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test Sample (IP Section 03.01) (2 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) 2-PT-Q013-DS149, PCV-1190, PCV-1191, PCV1192, SOV-1279, and SOV-1280 inservice testing data sheet after replacement of actuator switch for PCV-1190 (containment pressure relief valve) at Unit 2 on November 20, 2019
- (2) 3-PT-M097C, 33 EDG functional test after petcock and filter replacement at Unit 3 on December 5, 2019

### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

#### Surveillance Tests (other) (IP Section 03.01) (3 Samples)

- (1) 3-PT-R201C, 33 station battery charger functional test at Unit 3 on October 24, 2019
- (2) 2-PT-M021C, EDG 23 load test at Unit 2 on November 20, 2019
- (3) 2-PT-Q56A and 2-PT-Q56B, 6.9kV under-voltage and under-frequency relays trip actuating device tests at Unit 2 on December 4, 2019

#### RCS Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) 0-SOP-LEAKRATE-001, reactor coolant system leak rate evaluation at Unit 3 on December 15, 2019

## 71114.06 - Drill Evaluation

### Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

- (1) Conduct of a routine emergency preparedness drill at Unit 2 on November 20, 2019

## **RADIATION SAFETY**

### 71124.06 - Radioactive Gaseous and Liquid Effluent Treatment

#### Walk Downs and Observations (IP Section 02.01) (1 Sample)

The inspectors walked down the following gaseous and liquid radioactive effluent monitoring and filtered ventilation systems to assess the material condition and verify proper alignment according to plant design:

- (1)
  - Liquid radwaste treatment system at Units 1 and 2
  - Liquid radwaste treatment system at Unit 3
  - Fuel storage building ventilation system and exhaust fan
  - Control room envelope ventilation and filtration

#### Calibration and Testing Program (Process and Effluent Monitors) (IP Section 02.02) (1 Sample)

The inspectors reviewed the following gaseous and liquid effluent monitor instrument calibrations and tests:

- (1)
  - Unit 3 wide range gas monitor R-27 channel calibration completed December 9, 2017
  - Unit 3 wide range gas monitor R-27 channel functional test April 30, 2019
  - Unit 3 waste gas effluent radiation monitor R-20 calibration completed March 1, 2018
  - Unit 3 waste gas effluent radiation monitor R-20 channel functional test completed December 11, 2018
  - Unit 2 liquid effluent radiation monitor R-49 channel functional test completed July 12, 2017
  - Unit 2 liquid effluent radiation monitor R-54 calibration completed February 1, 2018
  - Unit 3 steam generator blowdown radiation monitor R-19 calibration completed June 15, 2018
  - Unit 2 liquid effluent radiation monitor R-54 channel functional test completed November 16, 2018
  - Unit 2 liquid effluent radiation monitor R-54 channel functional test completed February 8, 2019

#### Sampling and Analysis (IP Section 02.03) (1 Sample)

The inspectors reviewed the following:

(1) Radioactive Effluent Sampling and Analysis Activities

- Demonstration of remote vapor containment gaseous sampling
- Demonstration of vapor containment gaseous sample analysis

#### Instrumentation and Equipment (IP Section 02.04) (1 Sample)

The inspectors reviewed the following radioactive effluent discharge system surveillance test results:

- (1)
- Unit 2 control room envelope inleakage testing report dated October 1, 2017
  - Unit 3 control room envelope inleakage testing report dated December 14, 2018

#### Dose Calculations (IP Section 02.05) (1 Sample)

The inspectors reviewed the following to assess public dose:

(1) Liquid and Gaseous Discharge Permits

- Unit 2 vapor containment pressure relief release gaseous permit 190136 dated August 26, 2019
- Unit 3 vapor containment pressure relief release gaseous permit 190064 dated August 14, 2019
- Units 1 and 2 liquid radioactive waste release permit 190020 dated August 14, 2019
- Unit 3 liquid radioactive waste release permit 190090 dated August 29, 2019

#### Abnormal Gaseous or Liquid Tank Discharges

- The inspectors verified the licensee's method of evaluating abnormal releases. The inspectors determined that the licensee's evaluations satisfied the survey requirements of 10 CFR 20.1501.

#### 71124.08 - Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

#### Radioactive Material Storage (IP Section 02.01) (1 Sample)

The inspectors evaluated radioactive material storage.

- (1)
- The inspectors toured the radioactive material storage locations within the owner-controlled area and performed container integrity observations as well as dose-rate and inventory verification surveys.

#### Radioactive Waste System Walkdown (IP Section 02.02) (1 Sample)

The inspectors evaluated the following radioactive waste processing systems and processes during plant walkdowns:

(1) Liquid or Solid Radioactive Waste Processing Systems

- Units 1 and 2 liquid radioactive waste processing systems
- Unit 3 liquid radioactive waste processing system
- Solid waste and dry active waste storage areas for Units 1, 2, and 3. Solid waste and dry active waste was sent offsite to a vendor for processing.

Radioactive Waste Resin and/or Sludge Discharges Processes

- Units 1 and 2 radioactive waste processing
- Unit 3 radioactive waste processing system

#### Waste Characterization and Classification (IP Section 02.03) (1 Sample)

The inspectors evaluated the radioactive waste characterization and classification for the following waste streams:

- (1)
- Radioactive waste shipment number 18-177, spent resin, waste class B, Type B container, dated October 22, 2018
  - Radioactive waste shipment number 18-167, spent resin, waste class B, Type B container, dated October 22, 2018
  - Radioactive waste shipment number 19-153, spent resin, waste class B, Type B container, dated September 30, 2019

#### Shipment Preparation (IP Section 02.04) (1 Sample)

The inspectors evaluated the following radioactive material shipment preparation processes:

- (1)
- Two package receipt surveys were observed. One package contained calibrated tools and equipment and one contained contaminated underwater tooling.

#### Shipping Records (IP Section 02.05) (1 Sample)

The inspectors evaluated the following non-excepted package shipment records:

- (1)
- Radioactive waste shipment number 18-177, spent resin, waste class B, Type B container, dated October 22, 2018
  - Radioactive waste shipment number 18-167, spent resin, waste class B, Type B container, dated October 22, 2018
  - Radioactive waste shipment number 19-153, spent resin, waste class B, Type B container, dated September 30, 2019

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (2 Samples)

- (1) Unit 2 (October 1, 2018, through September 30, 2019)
- (2) Unit 3 (October 1, 2018, through September 30, 2019)

#### OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

The inspectors verified that the occupational exposure control effectiveness performance indicator was accurately reported.

- (1) The inspectors reviewed the performance indicator reports for October 1, 2018, to September 30, 2019.

#### PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample (IP Section 02.16) (1 Sample)

The inspectors verified the radiological effluent technical specifications/offsite dose calculation manual radiological effluent occurrences performance indicator was accurately reported.

- (1) The inspectors reviewed the performance indicator reports for October 1, 2018, to September 30, 2019.

### 71152 - Problem Identification and Resolution

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

- (1) The inspectors reviewed the corrective maintenance backlog, control room deficiency tags, open operability evaluations, and operator workarounds over the past six months at Units 2 and 3.

#### Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

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

- (1) Maintenance rule monitoring status for all maintenance rule systems including any rescheduled corrective actions and verification of systems for follow up actions at Units 2 and 3

## 71153 - Followup of Events and Notices of Enforcement Discretion

### Event Followup (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated a leak on the 21 component cooling water heat exchanger service water inlet line at Unit 2 and the licensee's response on November 6, 2019.
- (2) The inspectors evaluated a leak in the 22 main feedwater pump casing vent line, an unplanned power reduction to 60 percent, and licensee's response at Unit 2 on December 18 and 19, 2019.

## **OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL**

### 92702 CONF - Enforcement Related Order Follow-Up-Only

#### Enforcement Related Order Follow-Up-Only (1 Sample)

- (1) Verify Grand Gulf Confirmatory Order EA-17-132/153 Commitments (ML18072A191)
  - Element B: Verified the Site Vice President and Plant General Manager communicated a balanced message to all workers at Indian Point regarding the circumstances leading to the confirmatory order, that willful actions will not be tolerated, and that Entergy will be undertaking efforts to confirm whether others are engaging in such conduct at Indian Point in April 2018.
  - Element C: Verified Entergy performed an evaluation at Indian Point that was used to inform the Entergy Headquarters causal evaluation for the performance deficiencies identified in the confirmatory order in August 2018.
  - Elements H and I: Verified Entergy conducted an organizational health survey at Indian Point in 2018 and 2019.
  - Element B: Verified Entergy conducted semi-annual training (in May and November) for all Indian Point workers in 2018 and 2019 emphasizing that willfulness will not be tolerated.
  - Element D: Verified Entergy completed annual effectiveness reviews at Indian Point in 2018 and 2019.

### 92709 - Licensee Strike Contingency Plans

#### Licensee Strike Contingency Plans (1 Sample)

- (1) On October 1, 2019, at midnight, the labor contract expired between Entergy and the Teamsters Union for the security guard force. In preparation for a potential strike or lockout during the extended period of negotiations, the NRC inspectors evaluated the adequacy of the licensee's contingency plan. The inspectors assessed the adequacy of the plan's post strike staffing levels, staff qualifications, safety conscious working environment, and site access in meeting operational and security requirements. No strike occurred. Security contract negotiations were completed on October 6, 2019, and the Teamsters Union membership ratified the new contract on October 29, 2019.

## INSPECTION RESULTS

<b>Observation:</b> Semiannual Trend Analysis of Corrective Maintenance Backlog, Control Room Deficiencies, Open Operability Evaluations, and Operator Workarounds	71152
<p>The inspectors reviewed and assessed the corrective maintenance backlog, control room deficiency tags, open operability evaluations, and operator workarounds for trends from May 1 to November 15, 2019. No adverse trends were noted.</p> <p><b>Corrective maintenance backlog:</b> The current corrective maintenance backlog is relatively small, and out of service equipment is being promptly repaired. The total maintenance backlog has been reduced by 82 percent since the start of 2019 and is 20 percent down from the last quarter. Entergy continues to repair equipment and reduce the historic maintenance backlog from past periods. There are no corrective-critical maintenance items in the backlog.</p> <p><b>Control room deficiencies:</b> There are a total of five control room deficiencies, one in Unit 2 and four in Unit 3. This represents a very small net increase of one deficiency over a six-month period of performance. Indian Point is effectively managing the backlog of control room deficiencies. None of the control room deficiencies were safety-significant.</p> <p><b>Open operability evaluations:</b> As of November 15, 2019 (date of sample completion), there were eight operability evaluations for equipment that is considered operable but degraded or non-conforming (OP-DNC) in the Entergy condition reporting system. These included:</p> <ul style="list-style-type: none"> <li>• CR-IP3-2019-01335 – Unit 3 baffle bolt structure is degraded.</li> <li>• CR-IP2-2018-02127 – Unit 2 baffle bolt structure is degraded.</li> <li>• CR-IP2-2018-01697 – Stud 20 stuck in reactor pressure vessel.</li> <li>• CR-IP2-2016-04959 – Spent fuel pit Boraflex – RAKLIFE software under-predicts the degradation in the Boraflex panels.</li> <li>• CR-IP2-2014-04414 – Spent fuel pit Boraflex panels have degraded and the technical specifications are non-conservative.</li> <li>• CR-IP2-2012-06255 – Unit 2 turbine building high-energy line break effects 480 volt switchgear.</li> <li>• CR-IP3-2012-03262 – Unit 3 turbine building high-energy line break affects 480 volt switchgear.</li> <li>• CR-IP2-2009-05175 – 23 EDG flex coupling is degraded - NOTE: This condition was corrected in 2009 and should no longer be listed as OP-DNC.</li> </ul> <p>The OP-DNC condition reports for spent fuel pool Boraflex RAKLIFE software (CR-IP2-2016-06255) and non-conservative technical specifications (CR-IP2-2014-04414) were subsequently corrected by the implementation of a licensing amendment that was implemented prior to the end of the quarter and this condition report was corrected and closed. None of the OP-DNC components are significant safety risks.</p> <p>There are four additional operability evaluations that were statused as requiring compensatory measures to re-establish operability (OP-COMP MEAS).</p> <ul style="list-style-type: none"> <li>• CR-IP3-2009-04819 – 33 EDG jacket water pressure switch failed to close. Implemented a standing order to verify jacket water pressure switch is closed</li> </ul>	

following EDG monthly test. This verification was subsequently incorporated into a procedure.

- CR-IP3-2009-04502 – 33 EDG auxiliaries – pre-lube pump was not running – special log implemented to monitor jacket water temperature every 4 hours.  
NOTE: EC-18677 was installed and no compensatory measures are currently required to establish operability. The operability evaluation status was not updated to show operable status.
- CR-IP2-2009-00027 – 22 EDG pre-lube pump failed – NOTE: This condition was corrected in 2009 but the operability evaluation status was not updated to show operable status.
- CR-IP3-2007-03630 – SWN-38 leak – NOTE: This condition was corrected in 2007 but the operability determination was not revised to show operable status.

The last three condition reports that had categorized the conditions as "OP-COMP MEAS" had been previously corrected. The operability evaluation status had not been updated to reflect the repairs.

Entergy's decision not to maintain up-to-date and accurate records regarding the present status of operability determinations within the corrective action process makes it difficult to determine the current status of safety-related equipment that is inoperable, operable but degraded, or operable with compensatory measures. However, there is no regulatory requirement to maintain an up-to-date status of operability evaluations in the corrective action process and Entergy's procedure does not require the operability status to be updated after operability has been reestablished.

**Operator workarounds:** There are no operator workarounds or operator burdens on either unit.

Entergy is continuing to operate both units safely and correct any safety-significant problems as they occur. No adverse trends were identified for corrective maintenance backlog, control room deficiency tags, open operability evaluations, and operator workarounds.

<b>Observation:</b> Review of Maintenance Rule Systems	71152
The inspectors reviewed the licensee's monitoring of maintenance rule systems in accordance with 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants maintenance rule systems." The inspectors reviewed systems in monitoring status or near monitoring status and reviewed the associated actions. The inspectors verified that the systems are being monitored appropriately.	

<b>Observation:</b> Verification of Confirmatory Order EA-17-132/153	92702 CONF
The inspectors verified the corrective actions committed to in Alternate Dispute Resolution (ADR) Confirmatory Order (CO) EA-17-132/153 for 2018 and 2019. These actions included:	
<ul style="list-style-type: none"> <li>• ADR CO Element B: Communications: Training was conducted as required by confirmatory order for 2018 and 2019: <ul style="list-style-type: none"> <li>○ All supervisors and above completed integrity training at Indian Point, which addressed the requirements of 10 CFR 50.5, 10 CFR 50.7, and 10 CFR 50.9 in 2018.</li> </ul> </li> </ul>	



- A computer-based-training course was created in plateau entitled "Entergy Nuclear Employee Integrity Expectations." This computer-based training was completed by all Indian Point personnel in 2019.
- Entergy provided tier-2 communication via the web training access program to all employees and long-term contractors. 100 percent of all personnel completed this training in April 2019.
- Indian Point conducted semi-annual refresher training for all Indian Point workers that emphasized willful misconduct will not be tolerated at Indian Point in 2019.
- ADR CO Element C: A causal evaluation was completed in July 2018 by Entergy Headquarters staff that determined the root and contributing causes to determine why prior fleet-wide corrective actions from previous confirmatory orders and willful violations issued after January 2009 were not successful in preventing or minimizing instances of willful misconduct across the fleet. The results and lessons learned from this analysis were shared at Indian Point.
- ADR CO Elements H and I: An organization health survey was conducted in March 2019 for all station personnel that provided insights into the organizational health at Indian Point. The survey results showed a generally improving trend overall.
- ADR CO Element D: Entergy completed all required effectiveness reviews for corrective actions in 2018 and 2019 at Indian Point.
  - The 2018 interim effectiveness review concluded that two measures were assessed as effective and one measure was ineffective. Corrective actions were taken to address the ineffective measure.
  - The 2019 effectiveness reviews reported (ML19364A214) that:
    - Entergy concluded the results of the fleet-wide effectiveness reviews of the corrective actions to prevent recurrence were not effective in preventing or minimizing instances of willful misconduct across the fleet. Entergy revised the corrective actions to address the cause(s) of ineffectiveness. This conclusion was not identified as being specific to Indian Point.
    - Entergy also concluded "An Effectiveness Review completed in October 2019, for the fleet root cause addressing why, from 2015-2017, there have been multiple instances in which site personnel violated integrity standards found training audits effective based on the revision and implementation of the procedure as intended. However, the effectiveness review was rated indeterminate based on a recurrence of proctor misconduct occurring after the effectiveness review period was identified. This was corrected by conducting a confidential investigation and internal cause evaluation associated with the proctor misconduct and revising the root cause to add a follow-on effectiveness review in 2020."
  - The inspectors concluded that integrity concerns identified at Indian Point were not pervasive within the IPEC workforce and did not significantly impact plant safety.

The inspectors concluded that Indian Point was complying with the requirements of Confirmatory Order EA-17-132/153 in 2018 and 2019.

## **EXIT MEETINGS AND DEBRIEFS**

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

- On January 27, 2020, the inspectors presented the integrated inspection results to Anthony J. Vitale, Site Vice President, and other members of the licensee staff.
- On December 12, 2019, the inspectors presented the radioactive gas and liquid treatment inspection results to Robert Walpole, Regulatory Assurance and Performance Improvement Director, and other members of the licensee staff.

## **THIRD PARTY REVIEWS**

The inspectors reviewed Institute on Nuclear Power Operations reports that were issued during the inspection period.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents		CR-IP2-2019-04267, CR-IP2-2019-04308, CR-IP2-2019-04595, CR-IP2-2019-04863, CR-IP3-2019-03922	
71111.01	Corrective Action Documents Resulting from Inspection		CR-IP2-2019-04281	
71111.01	Miscellaneous	IP-RPT-12-00036	IP2 Flooding Walkdown Submittal Report for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Flooding License Amendment Request LAR-2017-000095, CA4	November 27, 2012
71111.01	Miscellaneous	ML14119A973	Flooding Walkdown Report - Entergy's Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident Indian Point Unit No. 2, Docket No. 50-247, License No. DPR-26	June 18, 2014
71111.01	Miscellaneous	NUREG 1437, Supplement 38	Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants, Regarding Indian Point Nuclear Generating Station	Revision 5
71111.01	Procedures	0-MET-402-GEN	Location of Sandbags in Flood Warning Conditions	Revision 5
71111.01	Procedures	0-SOP-WEATHER-001	Seasonal Weather Preparation	Revision 7
71111.01	Procedures	0-SOP-WEATHER-002	Severe Weather Preparations	Revision 1
71111.01	Procedures	2-AOP-FLOOD-1	Flooding	Revision 12
71111.01	Procedures	2-COL-30.1	Electric Heat Tracing	Revision 34
71111.01	Procedures	2-SOP-11.5	Space Heating and Winterization	Revision 39
71111.01	Procedures	3-AOP-FLOOD-1	Flooding	Revision 11
71111.01	Procedures	EN-WM-100	Work Request, Generation, Screening, and Classification	Revision 15
71111.04Q	Calculations	IP-CALC-12-00045	Stress Analysis of Service Water Line 1081 Due to Removal of Pipe Support SWN-H&R-1081-6-R	Revision 0
71111.04Q	Calculations	IP-CALC-19-00013	Stress Analysis of Service Water Line 1082 Due to Removal of Pipe Support SWN-H&R-1082-6-R	Revision 0

71111.04Q	Corrective Action Documents		CR-IP3-2019-03533	
71111.04Q	Corrective Action Documents Resulting from Inspection		CR-IP3-2019-03719, CR-IP3-2019-03729, CR-IP3-2019-03732, CR-IP3-2019-03756, CR-IP3-2019-03930, CR-IP3-2019-03932	
71111.04Q	Drawings	9321-F-27223	Flow Diagram – Service Water System, Nuclear Steam Supply Plant	Revision 55
71111.04Q	Drawings	9321-F-27363	(FSAR) Flow Diagram Chemical and Volume Control System SH 1	Revision 55
71111.04Q	Procedures	3-COL-CVCS-001	Chemical and Volume Control System	Revision 34
71111.04Q	Procedures	3-COL-EL-005	Diesel Generators	Revision 40
71111.04Q	Procedures	3-COL-RW-002	Service Water System	Revision 52
71111.05Q	Corrective Action Documents Resulting from Inspection		CR-IP2-2019-04337	
71111.06	Miscellaneous	Generic Letter 89-18	Resolution of Unresolved Safety Issue A-17, "Systems Interactions in Nuclear Power Plants"	September 6, 1989
71111.06	Miscellaneous	IP-RPT-04-00230	Indian Point Unit 2 Probabilistic Safety Assessment (PSA)	Revision 1
71111.06	Miscellaneous	NEA 06-028 Interoffice Memo	IP2 Closeout of EDG Flooding CR-IP2-2005-04868-CA-8	March 29, 2006
71111.11Q	Procedures	0-OSP-TG-001	Main Turbine Stop and Control Valve Contingency Actions	Revision 1
71111.11Q	Procedures	2-AOP-SSD-1	Control Room Inaccessibility Safe Shutdown Control	Revision 29
71111.11Q	Procedures	2-SOP-27.6	Unit 2 Appendix R Diesel Generator Operations	Revision 18
71111.11Q	Procedures	3-POP-2.1	Operation at Greater than 45% Power	Revision 69
71111.11Q	Procedures	3-PT-SA045	Main Turbine Stop and Control Valves Exercise Test	Revision 7
71111.11Q	Procedures	I0LP-LOR-AOP010	Unit 2 / Unit 3 Field Activities	Revision 3
71111.12	Calculations	IP3-CALC-RCS-000917	General Model for Loss of RHR with the Reactor Shut Down	Revision 2
71111.12	Engineering Changes	EC-17512	Installation of IP2 Equipment Hatch Closure Plug	Revision 0
71111.12	Miscellaneous	NSE 96-3-463 VC	Installation of an Outage Equipment Hatch in Containment	Revision 2
71111.12	Procedures	3-AOP-RHR-1	Loss of RHR	Revision 12
71111.12	Procedures	EN-DC-204	Maintenance Rule Scope and Basis	Revision 4

71111.13	Corrective Action Documents Resulting from Inspection		CR-IP2-2019-03521, CR-IP2-2019-04298	
71111.13	Miscellaneous		Unit 3 Operator's Risk Report for October 18, 2019	
71111.13	Miscellaneous	Unit 2 EOOS	On-line Risk Report	October 23, 2019
71111.13	Procedures	EN-OP-119	Protected Equipment Postings	Revision 11
71111.13	Procedures	EN-WM-104	On Line Risk Assessment	Revision 21
71111.15	Corrective Action Documents		CR-IP2-2019-04264, CR-IP2-2019-04298	
71111.15	Operability Evaluations	CR-IP3-2019-03698	Operability Determination, 33 Battery Charger	October 24, 2019
71111.15	Procedures	2-PT-M21B	Emergency Diesel Generator 22 Load Test	Revision 34
71111.15	Procedures	3-PT-R201-C	33 Station Battery Charger Functional Test	Revision 0
71111.15	Work Orders	WO 00532946		
71111.18	Engineering Changes	EC-81092	MPC Lid Plug Repair, (MPC-32 S/N 439)	Revision 0
71111.18	Procedures	EN-OP-116	Attachment 3, IPTE Supplemental Controls, MPC #439 Lid Plug Removal	September 26, 2019
71111.18	Procedures	HPP-2848-100R1	Holtec Procedure HPP-2848-100R1	Revision 1
71111.19	Corrective Action Documents		CR-IP2-2019-04766, CR-IP3-2019-04071, CR-IP3-2019-04084, CR-IP3-2019-04085, CR-IP3-2019-04099	
71111.19	Corrective Action Documents Resulting from Inspection		CR-IP3-2019-04068, CR-IP3-2019-04086	
71111.19	Drawings	9321-F-27223	Flow Diagram, Service Water System, Nuclear Steam Supply Plant	Revision 54
71111.19	Procedures	2-PT-Q013-DS149	PCV-1190, PCV-1191, PCV1192, SOV-1279, and SOV-1280 IST Data Sheet	Revision 30
71111.19	Work Orders	WO 00503471		
71111.19	Work Orders	WO 00530870		
71111.19	Work Orders	WO 52789881		
71111.19	Work Orders	WO 52797129		
71111.19	Work Orders	WO 52798880		

71111.19	Work Orders	WO 52905688		
71111.22	Miscellaneous		RCS Leak Rate Evaluation	December 15, 2019
71111.22	Procedures	0-SOP-LEAKRATE-001	RCS Leakrate Surveillance, Evaluation, and Leak Identification	Revision 6
71111.22	Procedures	2-PT-M-021C	Emergency Diesel Generator 23 Load Test	Revision 30
71111.22	Procedures	3-IC-PM-I-E-33BC	No. 33 Battery Charger Preventive Maintenance	Revision 6
71111.22	Procedures	3-PT-R201C	33 Station Battery Charger Functional Test	Revision 0
71111.22	Work Orders	WO 00053310		
71111.22	Work Orders	WO 52903861-01		
71124.06	Miscellaneous	NL-19-039	Indian Point Nuclear Generating Units 1, 2, and 3 2018 Annual Radiological Effluent Release Report	April 23, 2019
71124.08	Corrective Action Documents		CR-IP2-2018-00334, CR-IP2-2018-00882, CR-IP2-2019-4923	
71124.08	Miscellaneous	IP2 UFSAR UPDATE	Unit 2 Updated Final Safety Analysis Report, Chapter 11	Revision 20
71124.08	Procedures	2-SOP-5.1.8	Unit 2 Liquid Waste Process System Operation	October 31, 2019
71124.08	Procedures	EN-RP-121	Radioactive Material Control	Revision 16
71124.08	Procedures	EN-RW-102	Radioactive Shipping Procedure	Revision 17
71124.08	Radiation Surveys	Unit 2 DAW 2018 L76234	10 CFR Part 61 Waste Stream Sample Screening and Evaluation	March 18, 2018
71124.08	Radiation Surveys	Unit 2 SRST Resin 208 L76234	10 CFR Part 61 Waste Stream Sample Screening and Evaluation	March 18, 2018
71124.08	Radiation Surveys	Unit 3 SRST Resin	10 CFR Part 61 Waste Stream Sample Screening and Evaluation	March 12, 2019
71151	Miscellaneous		NRC Performance Indicator Technique/Data Sheets for the Period of October 1, 2018, through September 30, 2019	
71151	Procedures	EN-LI-114	Regulatory Performance Indicator Process	Revision 17
71152	Corrective Action Documents		CR-IP3-2007-03630, CR-IP2-2009-00027, CR-IP2-2009-05175, CR-IP3-2009-04502, CR-IP3-2009-04819, CR-IP2-2012-06255, CR-IP3-2012-03262, CR-IP2-2014-04414, CR-IP2-2016-04959, CR-IP2-2018-01697, CR-IP2-2018-02127, CR-IP3-2019-01335	
71152	Procedures		Standardized Operations Metrics	Revision 5
71152	Procedures	EN-LI-102	Corrective Action Program	Revision 38
71152	Procedures	EN-OP-104	Operability Determination Process	Revision 16

71153	Corrective Action Documents		CR-IP2-2019-04593, CR-IP2-2019-05110	
71153	Miscellaneous	ASME Code Case N-666	On-Line Repair of Socket Weld Leakage Technical Update	Revision 2
71153	Miscellaneous	EPRI TR-108132	On-Line Welding Repair for Leaking Pipe Components	January 1998
71153	NDE Reports	Weld Map 00536618-08-01	22 Main Boiler Feed Pump Casing Vent Line 559	Revision 0
71153	Procedures	2-POP-2.1	Plant Operation at Greater Than 45% Power	Revision 66
71153	Procedures	2-SOP-21.1	Main Feedwater System	Revision 67
71153	Procedures	EN-OP-103	Operability Determination Process	Revision 16
71153	Work Orders	WO 00536618		
92702 CONF	Corrective Action Documents		CR-HQN-2017-1968, CR-HQN-2018-0578	
92702 CONF	Corrective Action Documents	CR-HQN-2018-1210 Root Cause Evaluation	Ineffective Actions on Willful Misconduct	March 12, 2018
92702 CONF	Miscellaneous	2019 OHI	Indian Point Organizational Health Survey, 2019	July, 2019
92702 CONF	Miscellaneous	CNRO-2019-00030 (ML19364A214)	Entergy Response to Confirmatory Order EA-17-132/EA-17-153, Element K 2019 Summary	December 30, 2019
92702 CONF	Miscellaneous	EA 17-132/153 (ML18072A191)	Grand Gulf Confirmatory Order	March 12, 2018
92702 CONF	Miscellaneous	Letter CNRO-2018-00039	Entergy Response to Confirmatory Order EA-17-132/EA-17-153 Element J	September 27, 2018
92702 CONF	Miscellaneous	Letter CNRO-2018-00051	Entergy Response to Confirmatory Order EA-17-132/EA-17-153 Element K	December 28, 2018
92709	Miscellaneous		Indian Point Strike Contingency Plan	Revision 0