



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

August 8, 2018

Mr. Joel P. Gebbie  
Senior VP and Chief Nuclear Officer  
Indiana Michigan Power Company  
Nuclear Generation Group  
One Cook Place  
Bridgman, MI 49106

SUBJECT: DONALD C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2—NRC  
INTEGRATED INSPECTION REPORT 05000315/2018002 AND  
05000316/2018002

Dear Mr. Gebbie:

On June 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Donald C. Cook Nuclear Power Plant, Units 1 and 2. On July 2, 2018, 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.

Based on the results of this inspection, the NRC has identified one issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that a violation is associated with this issue. Because the licensee initiated condition reports to address this issue, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. The NCV is described in the subject inspection report. Further, inspectors documented three licensee-identified violations which were determined to be of very low safety significance in this report. The NRC is treating these violations as NCVs consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or significance of these NCVs, 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 III; the Director, Office of Enforcement; and the NRC Resident Inspector at the Donald C. Cook Nuclear Power Plant.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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 III; and the NRC resident inspector at the Donald C. Cook Nuclear Power Plant.

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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

***/RA Billy Dickson Acting for/***

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

Docket Nos. 50-315; 50-316  
License Nos. DPR-58 and DPR-74

Enclosure:  
IR 05000315/2018002; 05000316/2018002

cc: Distribution via ListServ®

Letter to Joel Gebbie from Kenneth Riemer dated August 8, 2018

SUBJECT: DONALD C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2—NRC  
INTEGRATED INSPECTION REPORT 05000315/2018002 AND  
05000316/2018002

DISTRIBUTION:

Jeremy Bowen  
RidsNrrDorLp13  
RidsNrrPMDCCook Resource  
RidsNrrDirslrib Resource  
Steven West  
Darrell Roberts  
Richard Skokowski  
Allan Barker  
DRPIII  
DRSIII  
[ROPreports.Resource@nrc.gov](mailto:ROPreports.Resource@nrc.gov)

ADAMS Accession Number: ML18220B355

OFFICE	RIII	RIII				
NAME	NShah:bw	BDickson for KRiemer				
DATE	8/6/2018	8/8/2018				

**OFFICIAL RECORD COPY**

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Numbers: 50-315; 50-316

License Numbers: DPR-58; DPR-74

Report Numbers: 05000315/2018002; 05000316/2018002

Enterprise Identifier: I-2018-002-0029

Licensee: Indiana Michigan Power Company

Facility: Donald C. Cook Nuclear Power Plant, Units 1 and 2

Location: Bridgman, MI

Dates: April 1 through June 30, 2018

Inspectors: J. Ellegood, Senior Resident Inspector  
T. Taylor, Resident Inspector  
S. Bell, Health Physicist  
J. Bozga, Senior Reactor Inspector  
J. Cassidy, Senior Health Physicist  
T. Go, Health Physicist  
M. Holmberg, Senior Reactor Inspector  
L. Smith, Reactor Inspector

Approved by: K. Riemer, Chief  
Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee’s performance by conducting an integrated quarterly inspection at Donald C. Cook Nuclear Plant, Units 1 and 2 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. Findings and violations being considered in the NRC’s assessment are summarized in the table below. Licensee-identified non-cited violations are documented in report sections: 71111.15, 71111.18, and 71124.06.

### List of Findings and Violations

Steam Dump Closure Caused by Human Error			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000316/2018002–01 Open and Closed	H.11 – Challenge the Unknown	71111.20
<p>On May 10, 2018, a Green self-revealed finding and associated Non-Cited Violation occurred when licensee personnel caused the Unit 2 steam dump valves to the condenser to close. Specifically, when tuning the controller for the steam dump valves, licensee personnel left the controller in automatic, resulting in the closure of all the steam dump valves. This caused both the steam generator power operated relief valves and a steam generator safety valve to lift.</p>			

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000316/2018–001–00	Valid Actuation of the Unit 2 CD Emergency Diesel Generator During Testing	71153	Closed

## PLANT STATUS

Unit 1 operated at or near rated thermal power for the entire inspection period.

Unit 2 began the inspection period shutdown and defueled. On May 5, 2018, the licensee brought the reactor critical and on May 7, synchronized to the grid. On May 7, the licensee manually tripped the reactor in response to high level indications on the moisture separator reheater drain tank. After correcting the condition the licensee again brought the reactor critical on May 10 and synchronized to the grid on May 11. On May 20, Unit 2 reached 100 percent power. The unit remained at or near 100 percent 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

#### Summer Readiness (1 Sample)

The inspectors evaluated summer readiness of offsite and alternate alternating current power systems.

### 71111.04—Equipment Alignment

#### Partial Walkdown (1 Sample)

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

- (1) 2 CD emergency diesel generator (EDG) following surveillance on June 5, 2018.

### 71111.05AQ—Fire Protection Annual/Quarterly

#### Quarterly Inspection (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas from April 1 thru June 30, 2018:

- (1) Unit 1 4KV complex;
- (2) Unit 1 AB and CD Battery rooms;
- (3) Unit 1 charging pump cubicles; and
- (4) Unit 2 charging pump cubicles.

#### 71111.07—Heat Sink Performance

##### Heat Sink (1 Sample)

The inspectors evaluated 2CD EDG lube oil cooler performance on April 5, 2018.

#### 71111.08—In-service Inspection Activities (1 Sample)

The inspectors assessed the effectiveness of the licensee's programs for monitoring degradation of the reactor coolant system boundary, risk-significant piping system boundaries, and the containment boundary by reviewing the following activities from March 5, 2018 to April 12, 2018:

- (1) Ultrasonic Examination (UT) of feedwater system pipe-to-pipe weld 2-FW-78-09F and pipe-to-tee weld 2-FW-78-10S;
- (2) UT of reactor coolant system pipe-to-pipe and pipe-to-elbow welds 2-RC-29-03, 2-RC-29-04, 2-RC-29-05, and 2-RC-29-06;
- (3) UT of residual heat removal system reducer to pipe weld 2-RH-16-17S;
- (4) UT of pressurizer shell-to-head welds 2-PRZ-15 and 2-PRZ-19;
- (5) UT of baffle-former bolts on plate 7 (replacement bolts);
- (6) UT of baffle-former bolts on plate 3 and 15L(original bolts);
- (7) Visual VT-3 examination of pressurizer snubbers S626 and S609;
- (8) Remote Visual VT-3 examination of baffle-former edge bolts between plates 6 and 7 in rows F, E and D;
- (9) Containment spray heat exchanger (2-HE-18E) inlet nozzle and pipe welds OW-1 and OW-2, and outlet nozzle and pipe welds OW-1 and OW-2 (Work Order 55399398); and
- (10) Boric acid evaluations - AR 2016-11041 Inactive Boric Acid Leak 2-ICM-129, AR 2017-7545 boric-1 acid leak on 2-ICM-265, AR 2016-11021-1 Unit 2 RCP #4 flange boric acid and corrective action records - AR 2016-14895 2-RC-139 Inactive Packing Leak, AR 2016-12127 Inactive Boric Acid on 2-NMO-151 and AR 2016-11593 Inactive Boric Acid on 2-NMO-153.

#### 71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

##### Operator Requalification (1 Sample)

The inspectors observed and evaluated a licensed operator as-found scenario in the simulator on June 5, 2018.

##### Operator Performance (1 Sample)

The inspectors observed and evaluated Unit 2 start up and heat up activities on May 9 and 10, 2018, following a refueling outage.

### 71111.12—Maintenance Effectiveness

#### Routine Maintenance Effectiveness (3 Samples)

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

- (1) Ice condensers;
- (2) Unit 1 chemical and volume control system; and
- (3) Particulate/iodine/noble gas radiation monitors.

### 71111.13—Maintenance Risk Assessments and Emergent Work Control (2 Samples)

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

- (1) Emergent replacement of the Unit 1 east essential service water (ESW) pump motor from April 2–6, 2018; and
- (2) Emergent electrical work to troubleshoot Unit 2 main generator ground and loss of a direct current (DC) subpanel on May 14 and May 15, 2018.

### 71111.15—Operability Determinations and Functionality Assessments (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Collective operability determination following refueling;
- (2) Dry cask with shielding;
- (3) Suspended solids in Unit 2 component cooling water (CCW);
- (4) 2CD EDG load response issues during testing;
- (5) Open phase condition modification unexpected alarms on Unit 2; and
- (6) Control Room cable vault fire seals.

### 71111.18—Plant Modifications (4 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) The inspectors reviewed the corrective actions associated which resulted in the changes to design basis documents based on Westinghouse Bulletin NSAL–17–3. The inspectors reviewed a calculation and design specification revision. No performance deficiencies were identified;
- (2) Unit 2 upflow modification;
- (3) Partial removal of seal material on the Unit 2 reactor cavity missile blocks; and
- (4) Addition of portable cooling unit to Shift Manager's office.

### 71111.19—Post Maintenance Testing (5 Samples)

The inspectors evaluated the following post maintenance tests:



- (1) Unit 2 CD diesel generator following governor replacement, on May 10, 2018;
- (2) Unit 2 motor driven auxiliary feedwater (AFW) pump following motor replacement on May 3, 2018;
- (3) Reactor controls modification in Unit 2, various dates, completed April 28, 2018;
- (4) Open phase condition modification on Unit 2, various dates, completed May 15, 2018; and
- (5) Valve 2–CTS–131W containment spray header isolation valve leakby repairs, on April 17, 2018.

#### 71111.20—Refueling and Other Outage Activities (1 Sample)

The inspectors evaluated refueling outage activities from March 1 through May 10, 2018. In combination with activities performed in the first quarter, this constitutes a complete sample.

### **RADIATION SAFETY**

#### 71124.06—Radioactive Gaseous and Liquid Effluent Treatment

##### Walk Downs and Observations (1 Sample)

The inspectors evaluated the licensee's radioactive gaseous and liquid effluent treatment systems during plant walkdowns.

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

The inspectors evaluated the licensee's gaseous and liquid effluent monitor instrument calibration and testing.

##### Sampling and Analyses (1 Sample)

The inspectors evaluated radioactive effluent sampling and analysis activities.

##### Dose Calculations (1 Sample)

The inspectors evaluated dose calculations.

#### 71124.07—Radiological Environmental Monitoring Program

##### Site Inspection (1 Sample)

The inspectors evaluated the licensee's radiological environmental monitoring program.

##### Groundwater Protection Initiative Implementation (1 Sample)

The inspectors evaluated the licensee's groundwater monitoring program.

## OTHER ACTIVITIES – BASELINE

### 71152—Problem Identification and Resolution

#### Semiannual Trend Review (1 Sample)

The inspectors reviewed items documented in the licensee’s corrective action program between January 1 to June 30, 2018, for trends that might be indicative of a more significant safety issue.

#### Annual Follow-Up of Selected Issues (2 Samples)

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

- (1) Quadrant power tilt on Unit 2. The inspectors selected this sample based on repeated documentation of a power tilt between the various quadrants on Unit 2 and because plant operators were not familiar with the condition; and
- (2) Human performance errors. The inspectors selected this sample because the licensee committed several human performance errors in the preceding quarters that had some safety significance.

### 71153—Follow-Up of Events and Notices of Enforcement Discretion Events (1 Sample)

The inspectors evaluated an unplanned manual trip of the reactor in response to a high level in the moisture separator drain tank and licensee’s response on May 7, 2018.

## INSPECTION RESULTS

### 71111.15—Operability Determinations and Functionality Assessments

Licensee Identified Non-Cited Violation	71111.15
This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.	
<u>Enforcement:</u>	
Violation: License conditions 2.C.(4) (Unit 1) and 2.C.(3)(o) (Unit 2) require implementation of the approved fire protection program. Per the Cook NFPA 805 Fire Protection Program Manual Sections 3.11.2 and 3.11.4, fire seals shall have at least a three hour fire rating.	
Contrary to the above, on February 6, 2018, the licensee identified multiple fire seals (many of which were between the control rooms and the cable spreading area underneath) that were degraded to the point that they could no longer meet the three hour rating requirement of Sections 3.11.2 and 3.11.4 of the Cook NFPA 805 Fire Protection Program Manual. Specifically, inadequate controls in the fire seal maintenance procedure and unclear guidance for Performance Verification department inspections led to a deterioration in seal quality.	
Significance/Severity Level: The inspectors determined the performance deficiency was more than minor because it adversely affected the Protection Against External Factors attribute of the Mitigating Systems cornerstone, whose objective is to ensure the availability, reliability,	

and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). The inspectors assessed the significance of the finding using Significance Determination Process Appendix F and concluded the violation was of very low safety significance (Green).
Corrective Action Reference: AR-2018-1208

71111.18—Plant Modifications

Licensee Identified Non-Cited Violation	71111.18
This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.	
<u>Enforcement:</u>	
Violation: Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) 50.47 b(8) requires that licensee emergency plans meet the standard of having adequate emergency facilities. The Cook Plant Emergency Plan states that the Technical Support Center (TSC) (an emergency facility) will be constructed to provide the same degree of radiological habitability as the Control Room under accident conditions.	
Contrary to the above, from January 24 to 30, 2018, the licensee failed to maintain the TSC as an adequate emergency facility, by installing a portable air conditioning unit in the Shift Manager’s office which compromised the ability of the TSC ventilation system to fulfill its function of providing the necessary radiological protection for the TSC. Specifically, the exhaust from the portable unit was routed to an existing ventilation duct of the TSC ventilation system, and a panel on one of the ventilation units was opened, exposing the TSC to the turbine building environment.	
Significance/Severity Level: The inspectors determined the performance deficiency was more than minor because it adversely affected the Facilities and Equipment attribute of the Emergency Preparedness cornerstone, whose objective is to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors assessed the significance of the finding using SDP Appendix B and concluded the violation was of very low safety or security significance (Green).	
Corrective Action Reference: AR-2018-0952	

71111.20—Refueling and Other Outage Activities

Steam Dump Closure Caused by Human Error			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000316/2018002-01 Open and Closed	H.11 – Challenge the unknown	71111.20
<p>On May 10, 2018, a Green self-revealed finding and associated NCV occurred when licensee personnel caused the Unit 2 steam dump valves to the condenser to close. Specifically, when tuning the controller for the steam dump valves, licensee personnel left the controller in automatic, resulting in a closure of all of the steam dump valves. This caused the steam generator (SG) power operated relief valves (PORVs) to lift as well as a safety relief valve.</p>			
<p><u>Description:</u></p> <p>During the Unit 2 refueling outage, the licensee implemented a significant modification on reactor control instrumentation. This project replaced most of the controls and indications in the control room, including the controller for the steam dump valves to the condenser (2-RU-18). Although the controller was functioning acceptably, the licensee decided to tune the controller to improve overall controller response. The technicians planned on tuning the controller in automatic to obtain immediate feedback on controller response. The technicians briefed the unit supervisor who gave permission to tune the controller in automatic. During the discussion, the unit supervisor challenged the technicians regarding the new controller response. However, because the licensee had been able to successfully tune the old controllers in automatic, the technicians assumed the replacements would behave in the same manner. Thus, the licensee did not effectively evaluate and manage the risk associated with tuning the new equipment in automatic. Although experienced with the old controllers, the technicians had limited experience and knowledge with the new controllers. During testing, when the technicians attempted to insert new gain values, the output of the controller went to 0, resulting in a closure of all of the steam dump valves. Since the plant was using the steam dump valve to remove heat, its closure resulted in a temporary loss of heat removal with subsequent opening of the SG PORVs and a safety relief valve.</p> <p>Corrective Action: As an immediate action, operators took manual control of the steam dump valves and adjusted steam flow to maintain heat removal.</p> <p>Corrective Action Reference: AR-2018-5260, Steam Dump Output Dropped to Zero While Tuning</p>			
<p><u>Performance Assessment:</u></p> <p>Performance Deficiency: Failure to know the effect of altering the plant configuration that resulted in loss of a heat sink as required by OHI-4000.</p> <p>Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the Initiating Events Cornerstone attribute to limit the likelihood of events that upset plant stability. Specifically, the licensee's inexperience with the new steam dump controllers, resulted in a configuration control error during testing, that upset plant stability when the steam dump valves unexpectedly went closed. This caused the SG PORVs and a safety relief valve to open.</p> <p>Significance: Green. The inspectors assessed the significance of the finding using SDP 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at-Power."</p>			

The finding screened as green because the finding was a transient initiator, but did not result in a reactor trip.

Cross-Cutting Aspect: The finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area, which states individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, licensee personnel did not stop when faced with the uncertain condition associated with tuning a steam dump controller of a new design. (H.11)

Enforcement:

Violation: Technical Specification Section 5.4.1 states, in part, that “written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.”

The NRC Regulatory Guide 1.33, Appendix A, Section 1 addresses “Administrative Procedures” and Section B addresses authorities and responsibilities for safe operation and shutdown. Procedure OHI 4000, “Conduct of Operations,” Attachment 8 step 2.2 states: “2.2 Operations has ownership of and will control plant equipment status. The configuration of the plant shall be deliberately chosen and controlled to support nuclear safety. The plant configuration shall not be altered in any way without proper authority, outside of approved processes, or knowing exactly what the effect will be on the process and the readiness of the plant to respond to an adverse event.”

Contrary to the above, on May 10, 2018, the unit supervisor failed to follow step 2.2 of Attachment 8 to station procedure OHI 4000, “Conduct of Operations.” Specifically, the supervisor authorized tuning of the controller for the Unit 2 steam dump valves without knowing this action would result in closure of these valves and the loss of normal heat removal capability.

Disposition: This violation is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the Enforcement Policy.

71124.06—Radioactive Gaseous and Liquid Effluent Treatment

Licensee Identified Non-Cited Violation	71124.06
<p>This violation of very low safety significant was identified by the licensee and has been entered into the licensee corrective action program and is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.</p>	
<p><u>Enforcement:</u></p>	
<p>Violation: Title 10 Code of Federal Regulations; Part 20.1501(c) requires that the licensee shall ensure that instruments and equipment used for quantitative radiation measurements are calibrated periodically for the radiation measured.</p>	
<p>Contrary to the above, between November 2012 and May 2017 the licensee used the liquid scintillation counter for quantitative radiation measurements outside the range of equipment capability and the system calibration. The licensee analyzed the impact on the annual effluent reports and UFSAR limits between 1/8/2013 and 5/3/2017. The licensee entered the violation on the corrective action program.</p>	

Licensee Identified Non-Cited Violation	71124.06
Significance/Severity Level: Green. The inspectors determined the performance deficiency was more than minor because it adversely affected the Plant Facilities/Equipment and Instrumentation attribute of the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The inspectors assessed the significance of the finding using SDP Appendix D and concluded the violation was of very low safety or security significance (Green).	
Corrective Action Reference: AR-2017-4835	
<u>71152—Problem Identification and Resolution</u>	

Observation—Semi-Annual Trend Review	71152
<p>While there did appear to be a reduction in operational errors being made in the field while manipulating equipment (such as during clearance activities and in performing certain evolutions) the inspectors noted a trend in configuration control issues. Most of these dealt with some kind of operation department interface or coordination with another department. In one case, valves associated with feedwater heater level control were left closed following a project to replace some of the heaters, which contributed to a manual reactor trip due to high moisture-separator drain tank level when starting the plant following the Unit 2 refueling outage. Other examples were Chemistry and Operations department coordination on a non-essential service water (NESW) valve alignment which led to NESW being isolated to generator seal oil cooling during plant startup, poor coordination between Maintenance and Operations which resulted in a containment penetration being left open, a pressure gauge remaining isolated after the Projects department completed the heater drain pump replacements, and the failure to ensure that valve-closure tests were done following the feedwater heater replacements.</p> <p>Another identified trend was in the area of post-maintenance testing (PMT). During the refueling outage on Unit 2, both the NRC and the licensee identified instances of improper PMT's being scheduled for safety-related equipment. Inspectors identified work on an EDG fuel oil transfer pump that did not have an in-service test (IST) scheduled. The licensee identified the lack of a time response test following a motor-driven AFW pump motor replacement, was a repeat issue from the previous outage. The licensee also identified the lack of an IST following a seal replacement on a CCW pump. In each case, the issues were discovered and corrected before equipment was restored to fully operable status. In response to the trend, the licensee reviewed other work on safety-related equipment for the outage to confirm the proper PMT's would be done. No other issues were identified.</p> <p>Finally, early in the observation period, the inspectors noted a trend in procedure quality for maintenance activities on safety-related equipment. There were instances regarding Turbine-Driven Auxiliary Feedwater (TDAFW) pump linkages where better procedure direction could have precluded binding and governor-valve travel issues. Additionally, while replacing a TDAFW governor, a snap ring was inadvertently left out of a coupling due to insufficient procedure detail. Regarding the EDGs, the licensee discovered instructions for assembly of air start check valves did not contain the torque guidance that the vendor drawings stipulated. In response to this trend, the licensee started to perform deliberate reviews of OE before maintenance on some safety-related equipment, to verify maintenance instructions had up-to-date guidance before starting work.</p> <p>No violations or findings were identified by the inspectors.</p>	

Licensee management acknowledged the issues discussed by the inspectors.

Observation—Annual Follow-Up of Selected Issues	71152
<p>The inspectors’ review of the quadrant power tilt on Unit 2 concluded that the condition did not challenge plant safety and that licensee actions were consistent with the design basis.</p> <p>The inspectors’ review of the human performance errors did not identify any additional concerns.</p>	

71153—Follow-Up of Events and Notices of Enforcement Discretion

Minor Violation—Closure of licensee event report (LER) 316/2018–001–00, Valid Actuation of the Unit 2 CD Emergency Diesel Generator During Testing.	71153
<p>Minor Violation: Technical Specification (TS) 5.4, “Procedures,” requires that the applicable procedures recommended in Regulatory Guide 1.33 be established, implemented, and maintained. Regulatory Guide 1.33 states that maintenance that could affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with procedures appropriate to the circumstances. Contrary to this requirement, procedure 12–EHP–4030–056–218, “Automatic Operation of Auxiliary Feedwater Pumps,” was not performed as written in the procedure. Specifically, pages were skipped which resulted in the 2CD EDG inadvertently starting during the surveillance.</p> <p>Screening: The issue resulted in momentary loss of the T–21C and T–21D vital busses until the 2CD EDG reached rated speed and connected to the busses. The reactor was defueled at the time. One train of spent fuel pool cooling was lost for several minutes, but the other train stayed in service and there was no apparent change in spent fuel pool temperature. The issue screened as minor based on the guidance in IMC 0612 Appendix E because there were no safety consequences and there was no transient of any significance.</p> <p>Violation: This failure to comply with TS 5.4 constitutes a minor violation that is not subject to enforcement action in accordance with the NRC’s Enforcement Policy.</p>	

**EXIT MEETINGS AND DEBRIEFS**

The inspectors confirmed that proprietary information was controlled to protect it from public disclosure. No proprietary information was documented in this report.

- On July 2, 2018, the inspectors presented the quarterly integrated inspection results to Senior Vice President and Chief Nuclear Officer, Mr. J. Gebbie, and other members of the licensee staff;
- On April 12, 2018, the inspectors presented the in-service inspection results to Senior Vice President and Chief Nuclear Officer, Mr. J. Gebbie, and other members of the licensee staff; and
- On June 21, 2018, the inspectors presented the environmental monitoring program and radioactive gaseous and liquid treatment and monitoring system inspection results to Mr. S. Lies, Site Vice President, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

71111.01—Adverse Weather Protection

- PMP-3100-IOA-001, Inter-Organizational Agreement Between the AEP Transmission and the AEP Nuclear Generation Group for Assistance to Cook Nuclear Plant, Revision 13
- WO 55447573, 2-TR201AB Cooling Pump Fan Power Cable Insulation Damaged
- WO 55450581, Digital Readout for Dissolved H2 not Working on 2-TR201CD
- WO 55487821, Degraded Outer Cable Insulation on 2-TR201CD Cooling Fan

#### 71111.04—Equipment Alignment

- OP-2-5151C-52; Flow Diagram Emergency Diesel Generator “CD” Unit No. 2; 01/02/2018
- OP-2-5151D-67; Flow Diagram Emergency Diesel Generator “CD” Unit No. 2; 02/15/2017

#### 71111.05AQ—Fire Protection Annual/Quarterly

- Fire Pre-Plans Volume 1, Revision 31

#### 71111.07—Heat Sink Performance

- 2-OHP-5030-019-002E; East Essential Service Water System Flush and Flow Test; Revision 10
- 2-OHP-5030-019-002W; West Essential Service Water System Flush and Flow Test; Revision 10
- DIT-B-02317-10; ESW Flow Verification Test Target Flows for 1-OHP-4030—119-022FV & 2-OHP-04030-219-022FV; 03/11/2015
- MD-12-ESW-078-N; EDG Cooler Tube Plugging Allowance; Revision 1
- MDS-607; Heat Exchanger Tube Plugging/ Revision 27
- 12-EHP-8913-001-002; Heat Exchanger Inspection; 2-QT-110-CD, CD Emergency Diesel Lube Oil Cooler on 03/26/2018; Revision 11
- 12-EHP-8913-002-002; Heat Exchanger Inspection; 2-QT-110-CD, CD Emergency Diesel Lube Oil Cooler on 10/30/2016; Revision 11
- EPRI NP-7552, Final Report December 1991, Heat Exchanger Performance Monitoring Guidelines
- 2-OHP-4030-232-027CD, CD EDG Operability Test, Train A, Revision 48
- Flow Diagram, Essential Service Water, OP-2-5113A-9
- 1-OHP-4030-119-022E; East Essential Service Water System Test; Revision 33

#### 71111.08—In-Service Inspection Activities

- Appendix D, Underwater Video System Resolution Demonstration Data Sheet; 03/16/2018
- Appendix D, Underwater Video System Resolution Demonstration Checkout Data Sheet; 03/23/2016
- Appendix D, Underwater Video System Resolution Demonstration Checkout Data Sheet; 03/24/2016
- Appendix D, Underwater Video System Resolution Demonstration Checkout Data Sheet; 03/26/2016
- AR 2018-2887; Contractor NDE Procedures not Reviewed iaw PMI-5050; 03/14/2018
- AR 2018-2300; Engineering Specifications Clarification for Impact Testing; 03/03/2018
- AR 2018-1991; Four Welds in Feedwater System not in ISI Program; 02/26/2018
- AR 2017-8884; Record Requires Correction/Supplement; September 15, 2017
- AR 2016-12216; U2C23 Baffle-Former Bolt UT Inspection Results; 10/23/2016
- AR 2016-12205; SG 22 Volumetric Indications Identified During ECT; 10/23/2016
- AR 2016-11021; Unit 2 RCP #4 Flange Boric Acid; 10/05/2016



- Certification of Qualification; Patrick Minogue; 05/05/2018
- Certification of Qualification; Clayton Shaw; 11/12/2018
- Certification of Qualification; Jesse Radakovich; 01/19/2019
- Computed Radiography Examination Report; 2-HE-18E Outlet; 10/31/2016
- Computed Radiography Examination Report; 2-HE-18E Inlet; 10/31/2016
- Data Sheet 2 & 3; Visual Inspection of Safety Related ISI and Grinnel Snubbers–2-GRC-S-626; 03/22/2018
- Data Sheet 2 & 3; Visual Inspection of Safety Related ISI and Grinnel Snubbers–2-GRC-S-609; 03/26/2018
- DIT-B-02678-05; Acceptance Criteria for the Measured Snubber Piston Settings; 03/15/2012
- EC 0000055458; Unit 2 Upflow Conversion; Revision 0
- GT 2017-9226; Conduct Pre-NRC Inspection Gap Analysis – U2 ISI; 09/21/2017
- Letter from AEP to NRC; Donald C. Cook Nuclear Plant Unit 2 Form OAR-1, Owners Activity Report; 04/03/2017
- ODE AR 2016-12216-19; Potential Baffle Former Bolt Degradation; 12/19/2016
- Personnel Certification Statement; T. Blechinger; 01/31/2018
- Personnel Certification Statement; R. Leidenfrost; 01/31/2018
- Personnel Certification Statement; L. Mclain; 01/31/2018
- Personnel Certification Statement; C. Meyer; 01/31/2018
- Personnel Certification Statement; H. Nicholas; 01/31/2018
- Personnel Certification Statement; M. Smith; 01/31/2018
- Personnel Certification Statement; C. Van Ruler; 02/02/2018
- Procedure 12-QHP-5050-NDE-010; Radiographic Examination of Welds; Revision 7
- Procedure 12-QHP-5050-NDE-027; Visual Examination for Boric Acid and Condition of Component Surface; Revision 4
- Procedure 12-QHP-5050-NDE-001; Liquid Penetrant Examination; Revision 10
- Procedure LMT-10-PAUT-02; Manual Phased Array Ultrasonic Examination of Austenitic and Ferritic Piping Welds; Revision 0
- Procedure LMT-08-PDI-UT-2; Ultrasonic Examination of Austenitic Piping; Revision 0
- Procedure LMT-08-PDI-UT-4; Ultrasonic Examination of Vessel Welds and Adjacent Base Metal > 2" in Thickness; Revision 1
- Procedure PMP-5030-001-001; Boric Acid Corrosion Control; Revision 21
- Procedure PMP-5070; In-Service Inspection; Revision 23
- Procedure PMP-5070-ISI-002; In-Service Inspection Program Implementation; Revision 14
- Procedure DTG-ENG-FLAW; Desktop Guide for ASME Section XI Flaw Evaluations; Revision 0
- Procedure 12-QHP-5050-NDE-027, Visual Examination for Boric Acid and Condition of Component Surface, Revision 4
- Procedure GBRA176713; Bolt Removal Plan D.C. Cook 2-2018; 02/22/2018
- Procedure GBRA104652; Work Instruction Bolt Installation; Revision H
- Procedure GBRA104651; Work Instruction Groove Milling; Revision C
- Procedure GBRA104647; Field Service Procedure for Baffle Former Bolt Replacement at NPP D.C. Cook; Revision B
- Procedure GBRA108393; Repair and Inspection Sequence Plan for Baffle Former Bolt Replacement; Revision B
- PDQS 755; 09/12/2013
- PDQS 882; 10/05/2017
- PQR 136; 02/10/1976
- PQR 219; 01/16/1990
- PQR 256; 08/07/1989
- PQR 258; 08/07/1989

- Report U2-VE-18-012; Ultrasonic Examination 2-FW-78-10S; 03/09/2018
- Report U2-VE-18-011; Ultrasonic Examination 2-FW-78-09F; 03/09/2018
- Report U2-VE-18-018; Ultrasonic Examination 2-RC-29-03; 03/13/2018
- Report U2-VE-18-019; Ultrasonic Examination 2-RC-29-04; 03/13/2018
- Report U2-VE-18-020; Ultrasonic Examination 2-RC-29-05; 03/13/2018
- Report U2-VE-18-021; Ultrasonic Examination 2-RC-29-06; 03/13/2018
- Specification ES-BAFFLE-0100QCN; Baffle-Former Bolt Replacement; Revision 4
- WCAP-18282-P; Reactor Internals Upflow Conversion Program Engineering
- Report For Donald C. Cook Nuclear Generating Station Unit 2; Revision 1
- WDI-STD-088; Underwater Remote Visual Examination of Reactor Vessel Internals; Revision 14
- WDI-STD-1073; Ultrasonic Test Procedure for the Inspection of Internal Hex Head Baffle Former Bolts with Welded Lock Bars; Revision 6
- WDI-STD-1154; Ultrasonic Test Procedure for the Inspection of 1.5 Inch Long Westinghouse Replacement Baffle Former Bolts; Revision 2
- WDI-TJ-1062; Technical Justification for the Ultrasonic Inspection of Internal Hex Head Baffle-Former Bolts with Welded Lockbars; Revision 3
- WDI-TJ-1103; Technical Justification for the Ultrasonic Inspection of 1.5 Inch Long Westinghouse Replacement Baffle-Former Bolts; Revision 3
- WDI-PJF-1320602-EPP-001; Donald C. Cook Nuclear Plant MRP-227A, Reactor Vessel Internals Examination Program Plan; Revision 0
- Work Order 55399398-94; Visual VT-2 Examination East CTS HX Welds Piping and Components; 11/19/2016
- Work Order 55399398-55; Safety Related Weld Data Block - East CTS HX Outlet - Welds Piping and Components; 11/02/2016
- Work Order 55399398-66; Safety Related Weld Data Block - East CTS HX Inlet - Welds Piping and Components; 11/02/2016
- Work Sheet of Bolt Replacements – U2 Replacement BFBs; 3/28/2018 through 4/8/2018
- WPS 8.1TS; Revision 6

#### 71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

- June 5, 2018 Licensed Operator Requalification As-Found Scenario Drill Guide
- 2-OHP-4021-001-002, Reactor Startup, Revision 62
- 2-OHP-4021-001-001, Plant Heatup from Cold Shutdown to Hot Standby, Revision 92

#### 71111.12—Maintenance Effectiveness

- AR 2017-0792; NFPA 805 Unavailability Performance Monitoring Weakness; 01/20/2017
- AR 2017-4410; 1-RU-34 Failed to Develop a Demand Signal During Dilution; 04/29/2017
- AR 2017-8716; 1-SV-51 Leakrate of 12.2 gpm After Unit 1 Reactor Trip; 09/13/2017
- AR 2017-8794; Wiring Inside 1-EPT-301 Affected Transducer Output; 09/13/2017
- AR 2017-9847; 1-EPT-412 Out of Tolerance; 10/02/2017
- AR 2018-2863; 2-CS-534 Fails to Open Using the Reachrod; 03/14/2018
- Chemical Volume Control System; Maintenance Rule Scoping Document; Revision 6
- EC-0000055458; D.C. Cook Unit 2 Up-Flow Conversion; Revision 0
- Emergency Core Cooling and Residual Heat Removal; Maintenance Rule Scoping; Revision 5
- MRS-SSP-3440; D.C. Cook Unit 2 (AMP) Upflow Conversion – Gauging and Plugging; Revision 0
- System Health Report, Ice Condenser System Unit 1; Q4, 2017
- System Health Report, Ice Condenser System Unit 2; Q4, 2017
- System Health Report; Unit 1 CVCS – Chemical Volume and Control; Q2-2017

- WO 55483431; 1-CS379 Possible Leak By
- Unit 2 Radiation Monitoring System Health Report, Second Quarter 2017
- AR-2017-4134, Unexpected Alarms on Annunciator 111 Drops 48 and 49, April 21, 2017
- AR-2017-4269, Loss of Communications to Multiple RMS Monitors, April 26, 2017
- AR-2017-4132, 2-RMS-MON Screen not Functioning, April 21, 2017
- Maintenance Rule Scoping Document – Radiation Monitoring System, Revision 11
- 12-THP-6010-RPI-802, Lower Containment SPING Filter Change and Grab Sampling, Revision 31
- AR-2018-1732, Potential Leakby/Dilution on RMS Equipment, February 20, 2018

#### 71111.13—Maintenance Risk Assessments and Emergent Work Control

- -PMP-4100-SDR-002, Outage Risk Assessment and Management, Revision 11
- AR-2018-5348, Lost Power to 2-VCC-TBV, May 14, 2018
- WO 55518229, Unexpected Alarm 221 drop 11
- OP-2-98028-21, Excitation and Regulation Sheet No. 1 Elementary Diagram
- PS-2-91417-5, Generator Field Rectifier Pan. RC-5 (Front) Wiring Diagram
- 2-OHP-4024-221, Annunciator 221 Response: Generator, Revision 63
- AR-2018-3665, 2-MDAB-3, Valve Control Center TBV Supply Switch Faulty, March 31, 2018
- OP-2-12003-36, 250VDC Main One-Line Diagram Engineered Safety System (Train A, B, N, and BOP)
- OP-2-12062-18, DC AUX One-Line 250VDC Bus AB Engineered Safety System (Train B)
- Unit 1 E ESW Motor Vibration Data; 10/23/2013 to 04/15/2018
- Work Schedule Emergent ESW Motor Replacement
- Plant Status Report, Unit 2; 04/06/2018

#### 71111.15—Operability Determinations and Functionality Assessments

- 02-OHL-5030-SOM-007; Unit 2 Tours – Unit 2 Auxiliary Tour; Revision 35
- 12-MHP-5021-EMP-003; Silicone Fire Barrier Penetration Seals Installation and Repair; Revision 13
- 12-TM-15-17-R0, Temporary Equipment and Power Supplies for Dry Cask Storage, Revision 0
- 2018-0146-00; 50.59 Screen; Compensatory Action for ODE on Particulate in CCW Affecting Flowrate to RHR Pump Seal Heat Exchanger; Revision 00
- 2-OHP-402' 1-082-039; De-Energizing and Energizing Reserve Auxiliary Transformers 2-TR201AB and 2-TR201CD; Revision 31-OHP-4024-121; Annunciator #121 Response: Generator; RCP Bus Voltage Unbalance; Drop 82
- 2-OHP-4021-082-039; De-Energizing and Energizing Reserve Auxiliary Transformers 2-TR201AB and 2-TR201CD; Revision 3
- 2-OHP-4024-221; Annunciator #221 Response: Generator, RCP Voltage Unbalance; Drop 23
- AEP-97-175; Westinghouse Electric Corporation Letter; Maximum CCW Flow Rates; 10/20/1997
- AR 2018-1208; Control Room Fire Penetration Seals; 02/06/2018
- AR 2018-2160; Degraded Fire Seal W9999; 03/01/2018
- AR 2018-3960; Unexpected Alarm While Performing 2-OHP-4021-082-001 Att 10; 04/10/2018
- AR 2018-4030; Low CCW Flow to RHR Mechanical Seals; 04/22/2018
- AR 2018-4115; Low CCW Flow to the RHR Pump Mechanical Seal Coolers/ 04/13/2018
- AR 2018-4211; CCW Cooling Flow to East CCP Below eSoms Limit; 04/16/2018
- AR 2018-4211; CCW Cooling Flow to East CCP Below eSoms Limit; 04/16/2018
- AR 2018-5712; Replaceable Element Type Fuses Found in 2-2D3; 05/24/2018
- AR 2018-5839; WO/WR to Potentially Modify Fire Seal; 05/30/2018

- AR 2943, Aggregate ODE for U2C24
- AR-2018-4115; Troubleshooting Control Form Plan Documentation Sheet; 05/02/2018
- EC-0000054992, D.C. Cook Dry Cask Storage Implementation of Hi-Storm 100 CoC Amendment 9, Revision 1 and FSAR, Revision 13
- EC-55035; Installation of Open Phase Detection Relays for Transformers 2-TR201AB/2-TR201CD (RATs) and Replacement of ION Meters for 2-TR-MAIN-1, -2, -3 (GSU) Open Phase Detection, Unit 2; Revisions 0
- HI-2177676, 10- CFR-7248 Review of Thermal Evaluation of Shielding Package Around the Hi-Trac at D.C. Cook, Revision 01
- NFPPM – Attachment 1; American Electric Power D.C. Cook Nuclear Plant, NFPA 805 Fire Protection Program Management; Revision 2
- OP-2-12002-45; Main Auxiliary One-Line Diagram Bus “C” & “D” Engineered Safety System (Train “A”); 03/30/2018
- OP-2-5135A-42; Flow Diagram CCW Safety Related Loads/ 02/09/2018
- OP-2-98042-39; 4 Kv Auxiliary Transformers 2CD & 201CD Elementary Diagram; 04/05/2018
- OP-2-98042A-0; Transformer TR201CD Open Phase Detection; 03/20/2018
- OP-2-98052-14; Synchronizing Diagram, Unit #2; 03/30/2018
- PS-2-93107-12; 4Kv Auxiliary Bus 2B ACB’s 2B3 & 2B4 Unit Number 2 C1A 42373 Wiring Diagram; 03/12/2018
- AR-2018-5147, Unable to Control Loading on 2EDGCD from Control Room

#### 71111.18—Plant Modifications

- 12-MHP-4030-046-002; Upper and Lower Containment Compartments Seal Material Inspection; Revision 7
- 12-TM-13-30-R1; Proceduralized Temporary Modification Written to Authorize Certain Temporary Cooling; Revision 1
- 12-TM-13-35-R1; Temporary Modification Written to Provide Ventilation/Cooling to the Annunciator/PPC Servers Located in a Portion of the Old Operations Briefing Room; Revision 1
- 2017-0411-00; 50.59 Screen for EC-0000055458; Revisions 0 and 1
- 2-3186R-4; Unit No 2 Containment Building Removable Bulkhead Plan, Sects & Dets Sh. 1 of 2; 07/25/2012
- 2-3186X-3; Unit #2 Containment Building Seal Strips for Bulkhead Elevation & Details
- AR 2018-0952; Portable AC Unit Installed in Shift Manager’s Office; 01/29/2018
- AR 2018-1104; TSC Doors not Fully Identified as Ventilation Boundaries; 02/02/2018
- AR 2018-1106; 12-TM-13-35 did not Evaluate TSC Envelope Pressurization; 02/02/2018
- AR 2018-4024; Unable to Purchase Rx Missile Block Silicone Sponge; 04/11/2018
- EC-0000055458; D. C. Cook Unit 2 Upflow Conversion; Revision 0
- EC-56307; There is Insufficient Stock of Missile Block Sponge Seals to Support Outage U2C24; Revision 0
- MRS-SSp-3440, D.C. Cook Unit 2 (AMP) Upflow Conversion - Gauging and Plugging, Revision 0
- NUREG-0737; Clarification of TMI Action Plan Requirements; Supplement 1
- OP-12-5148E-13; Flow Diagram Technical Support Center (TSC) Ventilation System Units No. 1 & 2
- PMP-5055-001-001; Winterization/Summarization; Revision 29
- Upflow Conversion White Paper; No Other Identifying Information Provided
- WCAP-18282-P; Reactor Internals Upflow Conversion Program Engineering Report for Donald C. Cook Nuclear Generating Station Unit 2; March 2018
- WO 55494133-01; Replace RX Missile Block Silicone Sponge

- WO 55494133-02; EC-56307 RMV RX Missile Block Sponge Seals
- DS-RES-17-1; Design Specification Addendum for D.C. Cook Unit 1 and Unit 2 Reactor Coolant Pumps (Addendum to 676588, Rev 2); Revision A
- Calculation DC-D-3195-368-SC; Structural Analysis of Reactor Coolant Loop Piping for Replacement of Steam Generators on D.C. Cook Units 1 and 2; Revision 4
- Action Request 2017-7865; Westinghouse Bulletin NSAL-17-3, 93A RCP Casing and Support; 08/15/2017

#### 71111.19—Post Maintenance Testing

- OHI-6080; Emergency Diesel Generator Logs; 05/19,/2018
- 2-OHP-4030-232-027CD; D.C. Diesel Generator Operability Test; 05/10/2018
- AR 2018-5405; Work Order 55488060 did not Include Quality Control Check for Bend Radius; 04/19/2018
- WO 55488060 – 52; TPG, OPC, Train ‘B’: Investigate Phase Issue (2-2B4/2-2B5)
- 12-IHP-5021-EMP-021; Cable Termination and Splicing; Revision25
- AR 2018-4120; Troubleshooting 201AB Open Phase Condition; 04/13/2018
- AR 2018-3944; Unexpected Annunciator 221 Drop 23; 04/09/2018
- EC-0000052454-TP-005D; Unit 2 Reactor Controls & Instrumentation (RCI) Calibration Testing of I/Os for Control Group 4; Attachment 1; Steam Generator #4 Level Control System; Revision 2
- OP-2-98513-E052454; Logic Diagram; 03/21/2018
- OP-2-E052454; Rod Control Functional Diagram/ 03/21/2018
- EC-0000052454-TP-005D; Unit 2 Reactor Controls & Instrumentation (RCI), Calibration Testing of I/Os for Control Group 4; Attachment 5; Rod Control Bank !-D Insertion Limits Functional Check; Revision 1
- EC-0000052454-TP-005D; Unit 2 Reactor Controls & Instrumentation (RCI), Calibration Testing of I/Os for Control Group 4; Attachment 6; Reactor Protection System to Reactor Controls and Instrumentation System CG4 Overlap Tests; Revision 1
- OP-2-5120S-15; Control Air System Auxiliary Building Tapoffs Unit #2; 04/13/2018
- AR 2018-3959; Transmitter 2-PPA-311 Found out of Tolerance; 04/10”2018
- EC-0000052454-TP-005B; Unit 2 Reactor Controls & Instrumentation (RCI) Calibration Testing of I/Os for Control Group 2; TER Number 004
- OP-2-98507-E052454; Steam Generator Logic Diagram Sheet 2 of 3, AMSAC Logic Diagram 03/12/2018
- OP-2-99016-E052454; Steam Generator 1 Level Control System Functional Diagram; 11/12/2015
- OP-2-99016B-E052454; Steam Generator 3 Level Control System Functional Diagram; 08/25/2015
- OP-2-99013-4; Steam Generator 2 & 4 Mismatch Channel 2 Functional Diagram; 10/26/2010
- AR 2018-4263; Unit 2 Rod Indicator Needs Calibration; 04/18/2018
- EC-0000052454-TP-005D; Unit 2 Reactor Controls & Instrumentation (RCI), Calibration Testing of I/Os for Control Group 4;TER Number 08; Revision 2
- EC-0000052454-TP-005D; Unit 2 Reactor Controls & Instrumentation (RCI), Calibration Testing of I/Os for Control Group 4; TER Number 9; Revision 2
- AR 2018-4130; Steam Generator 3 Steam Flow V/I Converter not Working/ 04/13/0218
- OP-2-99007-3; Rod Control Functional Diagram; 04/13/2-018
- EC-0000052454-TP-005D; Unit 2 Reactor Controls & Instrumentation (RCI), Calibration Testing of I/Os for Control Group 4; TER Number 11; Revision 2
- AR 2018-4196, Missed PMT Impact for Unit 2 East MDAFP Motor Replacement
- 2-OHP-4030-256-017R, Attachment 1, Auxiliary Feedwater Pump Response Time, 05/03/2018

- AR-2018-4119, CTS Check Valve Testing is not Well Coordinated with Appendix J, April 13, 2018
- Calculation MD-12-CTS-144-N, Regarding IST Leak Rate Acceptance Criteria for CTS Check Valves, Revision 0
- 2-IHP-4030-209-005, 2-CTS-131W, West Containment Spray to Upper Compartment Ring Header Containment Isolation Check Valve, Leak Rate Test, Revision 0
- DIT-B-01124-01, Seat Leakage Rates for CTS and RH Spray Check Valves
- AR-2018-4058, 50.59 Change to CTS Check Valve Acceptance Criteria, April 12, 2018
- Flow Diagram, Containment Spray, Unit 2, OP-2-5144-61
- 12-EHP-4030-001-001, Check Valve Examination Surveillance, Revision 12

#### 71111.20—Refueling and Other Outage Activities

- AR 2018-2133; 2-RC-114-L4; Significant Boric Acid Build-Up
- CNP U2C24 Management Human Performance Stand Down Presentation; 04/16/2018
- 2-OHP-4021-001-002; Reactor Start-Up; Revision 62
- R-CW-CIRC-0014; Circulating Water Clearance; 05/20/2018
- Unit 2 5/7/2018 Post Trip Review Report
- 12-EHP-4030-002-356, Low Power Physics Tests with Dynamic Rod Worth Measurement, Revision 16
- AR-2018-4982, NRC Upper Containment Material Condition Walkdown Items
- 2-OHP-4021-002-005, RCS Draining, Revision 49
- 2-OHP-OHP-4021-018-005, Operation of Refueling Cavity and Support System, Revision 63
- PMP-4100-SDR-002, Outage Risk Assessment and Management, Revision 11
- AR-2018-5260, Steam Dump Output Dropped to Zero While Tuning
- Various Timesheets, Unit 2 Spring 2018 Refueling Outage
- PMP-2060-FFD-002, Performance of Fatigue Assessments, Revision 10
- AR-2017-11582, Fix Discrepancy Between Chemistry and Operations Procedures, November 14, 2017
- AR-2018-5043, U2 Shutdown Bank B Abnormal Demand Indication, May 4, 2018
- AR-2018-5044, 2-MRV-222 Indicates Intermediate in the Control Room, May 4, 2018
- 2-IHP-4030-202-024, RTD Cross-Calibration, Revision 18
- AR-2018-5011, U2 PPC Digital Reactivity Program not Working Correctly, May 4, 2018
- 2-OHP-4021-001-001, Plant Heatup from Cold Shutdown to Hot Standby, Revision 92
- AR-2018-3472, CRID Failure, March 26, 2018
- WO 55516263, 2-NRV-163-ACT, Repair Actuator Leak
- AR-2018-3918, 2-NRV-163 Air Leak, April 9, 2018
- AR-2018-3178, Validate Insulation Thickness in Calculation SD-050209-001, March 20, 2018
- WO 55514936, 2-NRI-31 Replace Connectors Outside Containment
- 2-OHP-4030-227-041, Refueling Integrity, Revision 38

#### 71124.06—Radioactive Gaseous and Liquid Effluent Treatment

- 12-THP-4030-814; Eberline Radiation Monitoring System Liquid Channel Calibration; Revision 1
- 12-THP-4030-817; Eberline Radiation Monitoring System Mid and High Range Noble Gas Calibration; Revision 0
- 12-THP-4030-RPC-813; Eberline Radiation Monitoring System Iodine Channel Calibration; Revision 2
- 12-THP-6010-RPP-001; Preparation of the Annual Radioactive Effluent Release Report; Revision 10

- 2016 Annual Radioactive Effluent Release Report; Donald C. Cook Nuclear Plants Units 1 and 2; 04/26/2017
- 2017 Annual Radioactive Effluent Release Report; Donald C. Cook Nuclear Plants Units 1 and 2; 04/30/2018
- 2-OHP-4021-028-004; Data Sheet 1; Containment Pressure Relief Data; 06/20/2018
- 2-OHP-4021-028-004; Operation of the Containment Pressure Relief System; Revision 25
- AR 2016-11334; VRS-2505 Alarm While Filling the U2 Refueling Cavity; 10/09/2016
- AR 2016-11338; Alert Alarm VRS-2505; 10/09/2016
- AR 2016-8112; 2-SRA-2900 Cannot be Turned to Operations Desired Flowrate; 07/12/2016
- AR 2016-8332; Unit 2 Unexpected Annunciator 211, Drops 48 and 49; 07/19/2016
- AR 2016-8659; Unit 2 Unexpected Annunciator, Drops 48 and 49; 07/26/2016
- AR 2017-4835; Issue with High Level Tritium Analysis; 05/11/2017
- Audit Number NOS 17-02; REMP/ODCM; 02/22/2017
- GT 2017-10260-4; Quick Hit Self-Assessment; 2018 RETS Inspection (Inspection Procedure 71124.06); 05/17/2018
- PMP-6010-OSD-001; Off-Site Dose Calculation Manual; Revision 25
- Work Order 55432457 01; Complete Unit 2 Containment Pressure Relief System Performance Test; 04/09/2015
- Work Order 55453854 01; Complete Unit 1 Containment Pressure Relief System Performance Test; 03/27/2016
- Work Order 55509108 01; Radioactive Liquid Waste Effluent Discharge Header Channel Operation; 01/24/2018
- Work Order 55511313 01; Turbine Gland Steam Exhaust Gaseous Effluent Channel Operation Test; 02/02/2018
- Work Order 55511641 01; Auxiliary Building Ventilation Gaseous Effluent Flow Functional Test; 03/20/2018
- Work Order 55512862 01; Radioactive Liquid Waste Effluent Discharge Header Channel Operation Test; 05/19/2018

71124.07—Radiological Environmental Monitoring Program

- 12-IHP-4030-036-001; Meteorological Instrumentation – Primary and Backup Towers Channel Calibration; Revision 7; Calibration Date 03/08/2018
- 12-THP-6010-RPP-630; Collection of REMP Surface Water Samples; Revision 8
- 12-THP-6010-RPP-632; Collection of Environmental Air Samples; Revision 12
- 12-THP-6010-RPP-633; Collection of Environmental Radiation Dosimeters; Revision 7
- 12-THP-6010-RPP-634; Collection of REMP Groundwater Samples; Revision 15
- 12-THP-6010-RPP-637; Collection of REMP Lake Sediment and Soil Samples; revision 9
- 12-THP-6010-RPP-638; Collection of Food Products and Broadleaf Samples; Revision 11
- 12-THP-6010-RPP-643; Quarterly Review of Radiological Environmental Monitoring Program Data; Revision 12
- 2016 Annual Radiological Environmental Operating Report ; Donald C. Cook Nuclear Plants Unit 1 and 2; May 8, 2017
- 2017 Annual Radioactive Effluent Release Report; Donald C. Cook Nuclear Plants Units 1 and 2; April 30, 2018
- 2017 Annual Radiological Environmental Operating Report ; Donald C. Cook Nuclear Plants Unit 1 and 2; May 15, 2018
- AR 2016-13418; No Salmon Fish for REMP Sample Program in 2016 due to Population Fluctuation; 11/21/2016
- AR 2016-9936; Coloma REMP Air Station Loss Power; 08/17/2016
- AR 2017-13142; Trace Amounts of Cs-137 in REMP Fish Samples; 12/18/2017

- AR 2017-13176; Trace of Cs-137 in Broadleaf Sample; 11/29/2017
- AR 2017-4707; Interpretation of ISFSI Environmental DLR TLD Results; 05/08/2017
- AR 2018-0405; Broadleaf Sampling Procedural Non Compliance; 01/12/2018
- AR 2018-6509; NRC Inspector Noted REMP Air Station ONS-6 not Serving its Purpose of Collecting a Representative Sample; 06/21/2018
- Data Record of Tritium System and Components (SSC)
- GT 2017-10263-4; Self-Assessment Report
- Nuclear Oversight Audit NOS-18-01, Radiological Environmental Monitoring Program and Process Control Program; February 15, 2018

#### 71152—Problem Identification and Resolution

- 2-EHP-4030-213-363, One Point Incore-Excore Detector Calibration, Revision 11
- AR 2017-0394; Chemistry Action Level Entry Reported Erroneously; 01/11/2017
- AR 2017-10873; Operations Degraded Performance for the 3<sup>rd</sup> Quarter 2017; 10/26/2017
- AR 2017-5885; Inadequate HU Tool Use Results in Missed Steps in Procedure; 06/13/2017
- AR 2017-6604; Incorrect Valve Operated on HDP Placing on Warming; 07/08/2017
- AR 2017-6825; Clearance Error; 07/14/2017
- AR 2017-6869; LHRA Access Point Found Unsecured; 07/07/2017
- AR 2017-6996; Common Cause of Recent Station Human Performance Events; 07/21/2017
- AR 2017-8509; Clearance Tag on Wrong Equipment; 09/06/2017
- AR 2017-8906; N. Debocator was not in Service During Cleanup; 09/16/2017
- AR 2018-0312; Unattended Security Equipment; 01/10/2018
- AR 2018-2012, Unit 2 QPTR Exceeded 1.02 on Downpower, 02/26/2018
- AR 2018-2981; Clearance did not Identify all Wires in Conduit; 03/10/2018
- PMP-7030-CAP-001; Action Initiation; Revision 37
- PMP-7030-CAP-002; Condition Action and Closure; Revision 36
- PMP-7030-CAP-003; Conduct of Condition Evaluations; Revision 13
- Station ALARA Committee Meeting Minutes; 09/20/2017
- AR 5336; Valve Found in the Wrong Position; 05/14/2018
- WCAp-8648-A, Excore Detector Recalibration Using Quarter-Core Flux Maps, February 1979
- Westinghouse Position Statement on Core Tilt, Revision 4; 01/15/1992
- AR 2018-5346; Unit 2 Heater 4A and 4B Test Valve Closure not Tested; 05/14/2018
- AR 2018-5365; Two NEWS Valves Found Closed when Thought to be Open; 05/14/2018
- AR 2017-11567; Work Instruction Adherence Issue; 11/14/2017
- AR 2017-11617; 50.59 Review not Performed on Procedure Revision; 11/14/2017
- AR 2018-4022; East CCW Pump Surveillance not Scheduled; 04/11/2018
- AR 2018-4086; PMT Task for U2 East CCW Pump Referenced Incorrect Procedure; 04/12/2018
- AR 2018-4196; Missed PMT Impact for Unit 2 East MDAFP Motor Replacement; 04/16/2018
- AR 2018-4214; Loss of Power VBS4 – Improper Shutdown of Diesel; 04/16/2018
- AR 2018-5045; 2-QFI-301 is Indicating 4 gpm Higher than Actual 05/04/2018
- AR 2018-5153; Alarms and Events not Logged by Control Room Team; 05/05/2018
- AR 2018-5366; 12-THP-6020-CHM-313 Chlorination Needs Revised; 05/14/2018
- AR 2018-5848; Unexpected Control Room Alarm not Logged or Entered into CAP; 05/30/2018

#### 71153—Follow-Up of Events and Notices of Enforcement Discretion

- AR 2018-4126; Unexpected Start of 2-DGCD during 12-EHP-4030-056-218; 04/13/2018
- LER 05000316/2018-001-00; Valid Actuation of the Unit 2 CD Emergency Diesel Generator During Testing; 06/04/2018





- OP-2-12002-46; Main Auxiliary One-Line Diagram Bus 'C' & 'D' Engineered Safety System (Train 'A'); 04/26/2018
- AR 2018-5113, Unit Two Manual Trip Initiated, May 7, 2018