



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

**REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511**

August 5, 2019

Mr. John Dent, Jr.
Vice President-Nuclear and CNO
Nebraska Public Power District
Cooper Nuclear Station
72676 648A Avenue
Brownville, NE 68321

**SUBJECT: COOPER NUCLEAR STATION – INTEGRATED INSPECTION REPORT
05000298/2019002**

Dear Mr. Dent, Jr.:

On June 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Cooper Nuclear Station. On July 16, 2019, the NRC inspectors discussed the results of this inspection with Mr. D. Buman, Director of Nuclear Safety Assurance and other members of your staff. The results of this inspection are documented in the enclosed report.

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

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

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

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/

Cale H. Young, Acting Chief
Reactor Project Branch C

Docket No.: 05000298

License No.: DPR-46

Enclosure:

As stated

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COOPER NUCLEAR STATION – INTEGRATED INSPECTION REPORT 05000298/2019002 – DATED AUGUST 5, 2019

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

Docket Number: 05000298

License Number: DPR-46

Report Number: 05000298/2019002

Enterprise Identifier: I-2019-002-0003

Licensee: Nebraska Public Power District

Facility: Cooper Nuclear Station

Location: Brownville, Nebraska

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

Inspectors: J. Cassidy, Senior Health Physicist
P. Elkmann, Senior Emergency Preparedness Inspector
J. Rivera, Health Physicist
M. Stafford, Resident Inspector
P. Vossmar, Senior Resident Inspector

Approved By: Cale H. Young, Acting Chief
Reactor Project Branch C
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 Cooper Nuclear Station 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. An NRC finding, violation, and an additional item are summarized in the tables below.

List of Findings and Violations

| | | | |
|--|---|-----------------------|----------------|
| Failure to Evaluate Operability in Accordance with Procedures for a High Pressure Coolant Injection System Degraded Condition | | | |
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Mitigating Systems | Green NCV 05000298/2019002-01 Open/Closed | [H.7] - Documentation | 71111.15 |
| <p>The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, for the licensee’s failure to evaluate operability of the high pressure coolant injection system in accordance with Procedure 0.5.OPS, “Operations Review of Condition Reports / Operability Determination,” Revision 62. Specifically, on January 25, 2019, when the high pressure coolant injection pump low discharge flow instrument failed to generate the required minimum flow valve closure signal during surveillance testing, the licensee failed to recognize that high pressure coolant injection surveillance requirements for pump flow could not be met. As a result, the instrument was inoperable, and although it was repaired within 5 hours of discovery, the inoperability was not recognized until inspectors challenged the initial determination.</p> | | | |

Additional Tracking Items

| Type | Issue Number | Title | Report Section | Status |
|------|----------------------|---|----------------|--------|
| LER | 05000298/2017-004-01 | Torus to Drywall Vacuum Breaker Failure to Indicate Full Closed Causes Loss of Safety Function. | 71153 | Closed |

PLANT STATUS

Cooper Nuclear Station began the inspection period at rated thermal power. On May 17, 2019, the unit was down powered to 65 percent for a control rod sequence exchange. The plant was returned to rated thermal power on May 18, 2019, and 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

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

The inspectors evaluated summer readiness of offsite and alternate alternating current (AC) power systems on June 20, 2019.

71111.04 - Equipment Alignment

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

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

- (1) Reactor core isolation cooling while high pressure coolant injection out of service on April 18, 2019;
- (2) Residual heat removal B during residual heat removal A work week on May 3, 2019;
- (3) Service water during service water pump D replacement on May 17, 2019;
- (4) Standby gas treatment A during standby gas treatment B maintenance on June 11, 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) Northwest quad 859 feet and 881 feet elevations, Division 1 residual heat removal on April 3, 2019;
- (2) Cable expansion room on April 15, 2019;
- (3) Alternate shutdown panel area on May 1, 2019;
- (4) Southwest quad 859 feet and 881 feet elevations, Division 2 residual heat removal on May 2, 2019;
- (5) Reactor building 976 standby liquid control area on June 10, 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:

Core spray A and reactor core isolation cooling area on June 3, 2019.

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

Residual heat removal A heat exchanger inspection and maintenance on May 2, 2019.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

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

The inspectors observed and evaluated licensed operator performance in the control room during control rod drive exercising, standby gas treatment troubleshooting, and emergency diesel generator 1 service water inservice testing on June 8, 2019.

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

The inspectors observed and evaluated the licensed operator qualification simulator scenario on April 23, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (3 Samples)

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

- (1) Reactor building quad sumps on June 18, 2019;
- (2) Turbine system on June 25, 2019;
- (3) Reactor recirculation system on June 27, 2019.

71111.13 - Maintenance Risk Assessments and Emergent Work Control

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

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

- (1) Emergent reactor feed vent line leak on April 5, 2019;
- (2) Emergency diesel generator 2 jacket water heat exchanger flange service water leak repair on April 12, 2019;
- (3) High pressure coolant injection planned maintenance work week on April 18, 2019;
- (4) Residual heat removal B and residual heat removal service water B work week on April 24, 2019;
- (5) Residual heat removal A planned maintenance work week on May 3, 2019;
- (6) Main generator reactive load verification on June 21, 2019;
- (7) Recirculation motor generator set B potentiometer replacement on June 27, 2019.

71111.15 - Operability Determinations and Functionality Assessments

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

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Reactor equipment cooling C operability on April 25, 2019;
- (2) Condition Report CR-CNS-2018-02061 battery results operability evaluation on April 29, 2019;
- (3) Inadequate station battery technical specification on April 30, 2019;
- (4) FP2 barriers found with combustible sealant on May 1, 2019;
- (5) High pressure coolant injection minimum flow valve instrumentation failed testing and calibration on June 19, 2019.

71111.19 - Post-Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (6 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) High pressure coolant injection control system card replacement post maintenance test on April 19, 2019;
- (2) Residual heat removal pump B post maintenance test following planned system maintenance on April 24, 2019;
- (3) Residual heat removal service water pump B leakage testing following maintenance April 24, 2019;
- (4) Reactor equipment cooling pump C post maintenance test following pump replacement on April 25, 2019;
- (5) Residual heat removal pump A post maintenance test following planned system maintenance on May 3, 2019;
- (6) SGT-AO-271 standby gas treatment B dilution air valve post maintenance test on June 12, 2019.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Inservice Testing (IP Section 03.01) (1 Sample)

Elevated release point sump pump functional test on April 17, 2019.

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

Particulate and iodine sample collection for drywell atmosphere monitor and increased drywell unidentified leakage on April 4, 2019.

Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) Reactor core isolation cooling pump low discharge flow channel calibration on April 10, 2019;
- (2) High pressure coolant injection quarterly pump flow test on April 26, 2019.

71114.02 - Alert and Notification System Testing

Inspection Review (IP Section 02.01-02.04) (1 Sample)

The inspectors evaluated the maintenance and testing of the alert and notification system, including outdoor warning sirens and tone alert radios, for the period July 2017 through

May 2019. The inspectors also observed a silent test of the outdoor emergency warning sirens conducted June 18, 2019.

71114.03 - Emergency Response Organization Staffing and Augmentation System

Inspection Review (IP Section 02.01-02.02) (1 Sample)

The inspectors evaluated the readiness of the Emergency Preparedness Organization for the period July 2017 through May 2019.

71114.04 - Emergency Action Level and Emergency Plan Changes

Inspection Review (IP Section 02.01-02.03) (1 Sample)

The inspectors evaluated Revisions 72 and 73 of the Cooper Nuclear Station Emergency Plan. These evaluations do not constitute NRC approval of the changes made by the licensee.

71114.05 - Maintenance of Emergency Preparedness

Inspection Review (IP Section 02.01 - 02.11) (1 Sample)

The inspectors evaluated the maintenance of the emergency preparedness program for the period July 2017 through May 2019. The inspectors observed a quarterly meeting between licensee staff and state and county offsite emergency response organizations on June 20, 2019, which included a discussion of the quality of interfaces between the licensee and offsite response organizations led by the licensee's Quality Assurance organization.

71114.06 - Drill Evaluation

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

Emergency preparedness drill on May 14, 2019.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Contamination and Radioactive Material Control (IP Section 02.03) (1 Sample)

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material.

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material. The inspectors verified the following sealed sources are accounted for and are intact:

- S741;
- S256.

High Radiation Area and Very High Radiation Area Controls (IP Section 02.05) (1 Sample)

The inspectors evaluated risk-significant high radiation area and very high radiation area controls.

Instructions to Workers (IP Section 02.02) (1 Sample)

The inspectors evaluated instructions to workers including radiation work permits used to access high radiation areas.

Radiation work packages:

- 2018-106; Transverse Incore Probe; Radiation Protection High Risk Activities;
- 2019-100; Reactor Building; LOCKED High Radiation Area Activities;
- 2019-102; High Integrity Container Preparation / Shipments.

Electronic alarming dosimeter alarms:

- no alarms occurred during the period of this inspection.

Labeling of containers:

- Three Main Steam Relief Valves;
- Dry Active Waste Pump;
- Box of Hoses and Fittings in Radioactive Waste Processing Area.

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 02.06) (1 Sample)

The inspectors evaluated radiation worker performance and radiation protection technician proficiency.

Radiological Hazard Assessment (IP Section 02.01) (1 Sample)

The inspectors evaluated radiological hazards assessments and controls. The inspectors reviewed the following:

Radiological surveys:

- Reactor Water Clean-Up Heat Exchanger Room;
- Radwaste Collector Tanks;
- Refuel Floor;
- High Pressure Core Injection Pump Room.

Risk significant radiological work activities:

- Locked High Radiation Area Verification Surveillance;
- Spent Resin Sample Collection;
- Residual Heat Removal Heat Exchanger Inspection and Eddy Current.

Air sample survey records:

- Reactor Head Bolt Cleaning;
- Cavity Decontamination;
- Reactor Water Clean-Up Heat Exchanger Room Decontamination.

Radiological Hazards Control and Work Coverage (IP Section 02.04) (1 Sample)

The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities.

Radiological work package for areas with airborne radioactivity:

- No work packages were available for review during this inspection.

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Engineering Controls (IP Section 02.01) (1 Sample)

The inspectors evaluated airborne controls and radioactive monitoring. The inspectors reviewed the following:

Installed Ventilation Systems

- Control Room Emergency Filter System
- Standby Gas Treatment (SGT) System

Temporary Ventilation System Setups

- None were available during this inspection

Portable or Installed Monitoring Systems

- Continuous air monitor (AMS-4) in the Augmented Radwaste Building
- Continuous air monitor (AMS-4) on the Refuel Floor

Self-Contained Breathing Apparatus (SCBA) for Emergency Use (IP Section 02.03) (1 Sample)

The inspectors evaluated SCBA program implementation. The inspectors reviewed the following:

Status and Surveillance Records for Self-Contained Breathing Apparatus

- SCBA No. IL845597
- SCBA No. IL845658
- SCBA No. IL846625
- SCBA No. IL846876
- SCBA No. IL846907

Self-Contained Breathing Apparatus Fit for On-Shift Operators

- Two senior reactor operators (SROs) and one reactor operator (RO)

Self-Contained Breathing Apparatus Maintenance Check

- Due to the entire fleet of SCBAs (Scott X-3) being newly purchased in June 2018, the time frame for the maintenance checks has not been reached. Therefore, none were available during this inspection.

Use of Respiratory Protection Devices (IP Section 02.02) (1 Sample)

The inspectors evaluated respiratory protection. The inspectors reviewed the following:

Evaluations for the Use of Respiratory Protection

- None were available during this inspection

Respiratory Protection Use During Work Activities

- None were available during this inspection

Medical Fitness for Use of Respiratory Protection Devices

- One nonlicensed operator
- One Maintenance Support individual
- One Electrical Maintenance individual

Observation of Donning, Doffing and Functional Test

- Observed demonstration of donning, doffing, and functional test of an SCBA unit and full face respirator by a radiation protection technician

Respiratory Protection Device Evaluation

- Five Scott AV 30000HT full face respirators
- One Versaflo Powered Air Purifying Respirator (PAPR)
- One Delta Mururoa Delta Suite

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (1 Sample)

April 1, 2018 - March 31, 2019

BI02: RCS Leak Rate Sample (IP Section 02.11) (1 Sample)

April 1, 2018 - March 31, 2019

EP01: Drill/Exercise Performance (IP Section 02.12) (1 Sample)

July 1, 2018 - March 31, 2019

EP02: ERO Drill Participation (IP Section 02.13) (1 Sample)

July 1, 2018 - March 31, 2019

EP03: Alert & Notification System Reliability (IP Section 02.14) (1 Sample)

July 1, 2018 - March 31, 2019

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (1 Sample)

April 1, 2018 - March 31, 2019

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

October 31, 2018 - March 31, 2019

71152 - Problem Identification and Resolution

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:

Post event flooding technical requirements manual changes on June 19, 2019.

71153 - Followup of Events and Notices of Enforcement Discretion

Event Followup (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated the licensee's retraction of Event Notification 53646 regarding main steam isolation valve local leak-rate test values on June 11, 2019;
- (2) The inspectors evaluated the unplanned trip of a reactor recirculation pump and the resulting single loop operations on June 12, 2019.

Event Report (IP Section 03.02) (1 Sample)

The inspectors evaluated the following licensee event reports (LERs):

1. LER 05000298/2017-004-01, Torus to Drywall Vacuum Breaker Failure to Indicate Full Closed Causes Loss of Safety Function (ADAMS Accession No. ML19031B333). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER; therefore, no performance deficiency was identified. The inspectors also concluded that no violation of NRC requirements occurred.

INSPECTION RESULTS

| Failure to Evaluate Operability in Accordance with Procedures for a High Pressure Coolant Injection System Degraded Condition | | | |
|--|---|--------------------------|----------------|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Mitigating Systems | Green NCV 05000298/2019002-01 Open/Closed | [H.7] - Documentation | 71111.15 |
| <p>The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, for the licensee's failure to evaluate operability of the high pressure coolant injection system in accordance with Procedure 0.5.OPS, "Operations Review of Condition Reports / Operability Determination," Revision 62. Specifically, on January 25, 2019, when the high pressure coolant injection pump low discharge flow instrument failed to generate the required minimum flow valve closure signal during surveillance testing, the licensee failed to recognize that high pressure coolant injection surveillance requirements for pump flow could not be met. As a result, the instrument was inoperable, and although it was repaired within 5 hours of discovery, the inoperability was not recognized until inspectors challenged the initial determination.</p> | | | |
| <p><u>Description:</u> On January 25, 2019, during technical specification (TS) surveillance-required functional testing, the licensee discovered that Switch 2 on HPCI-FIS-78, "HPCI pump discharge low flow switch," did not actuate within calibration tolerances. The licensee subsequently performed a calibration of the instrument, and technicians were unable to get the switch to actuate or calibrate. As a result, later that day, maintenance personnel removed the switch cover and inspected the internals and linkages within the instrument, and then adjusted the actuation plunger on Switch 2. These actions restored the instrument's ability to function. Until then, the switch was unable to perform its function for a total of 5 hours. Because there is only one of these instruments, loss of the instrument results in a loss of the function. With the loss of function of Switch 2, the high pressure coolant injection (HPCI) minimum flow valve would open upon pump start, as required, but would fail to close when the pump reached higher flows and approached operating conditions. This failure would cause a diversion of flow through the minimum flow line when all flow should be directed into the reactor vessel during an emergency event. Operations personnel determined that HPCI-FIS-78 was operable for the condition, despite the loss of Switch 2's function. Specifically, operations personnel noted that the successful operation of Switch 2 was not a surveillance procedure acceptance criterion. They also noted that the TS Bases for Limiting Condition for Operation (LCO) 3.3.5.1 – Function 3f, "HPCI Pump Discharge Flow – Low," stated, "The valve is automatically closed if flow is above the minimum flow setpoint. It is not necessary for the minimum flow valve to close to achieve adequate system flow assumed in the accident analysis (Ref. 4)."</p> <p>The inspectors reviewed the licensee's operability evaluation. The inspectors noted that the instrument in question opens and closes the minimum flow valve automatically based on HPCI flow, and both of these functions were covered under LCO 3.3.5.1 – Function 3f. They also noted that the General Electric Standard TS Bases stated for Function 3f, "The HPCI Pump Discharge Flow – Low Function is assumed to be OPERABLE and capable of closing the minimum flow valve to ensure that the emergency core cooling system flow assumed during the transients and accidents analyzed in References 2, 3, and 4 are met." Next, the inspectors reviewed the Ref. 4 cited in Cooper's TS Basis document, Calculation NEDC 97-023, "HPCI Minimum Flow Line Evaluation," Revision 3. The inspectors identified</p> | | | |

that in the section labeled, "Conclusions and Recommendations," the calculation stated, in part, that the HPCI system minimum flow line bypass valve must close for the system to be able to meet an injection flowrate of 4250 gpm at lower reactor pressures. However, closure is not required to ensure that the HPCI minimum injection flow rate assumed in the accident and transient analysis is met. The inspectors observed that TS Surveillance Requirements 3.5.1.7 and 3.5.1.8 for HPCI pump flow require HPCI to develop 4250 gpm of injection flow against reactor pressure when reactor pressure is between 150 psig and 1020 psig. Therefore, with the instrument failed, HPCI would not be able to meet its TS surveillance-required flow rates. The inspectors also observed that Cooper TS Surveillance Requirement 3.0.1 states, "Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO."

The inspectors reviewed the licensee's operability Procedure 0.5.OPS, "Operations Review of Condition Reports / Operability Determination," Revision 62. Section 5 of this procedure describes the requirements for performance of immediate operability determinations. Section 5.1.13.6 states, in part, that when a degraded condition is identified, operability evaluations should include documentation of a reasonable expectation of operability and the basis for that determination. Section 5.1.13.6.a, states, "select and use appropriate references to ensure the scope of the SSC function is identified. Reference to program documents, calculations, alarm cards, or other documents may provide additional insights into SSC performance requirements." The inspectors noted that the operations personnel performing the evaluation in this case had failed to reference the calculation that was listed as the reference for the erroneous TS Basis document statement. Step 5.1.13.6 states, "Ensure all Tech Spec Surveillance Requirements can be met." The inspectors determined that this step was not accomplished in accordance with the procedure, in that with the degraded condition on HPCI-FIS-78, TS Surveillance Requirements 3.5.1.7 and 3.5.1.8 for HPCI pump flow could not be met. The inspectors challenged the licensee's operability determination, and after further review, operations personnel determined that the instrument should have been declared inoperable. As a result, the inspectors concluded that operations personnel had performed an inadequate evaluation of operability for this issue. The inspectors also noted that the TS Basis document lacked clarity and accuracy, and the surveillance procedure for this instrument had incorrectly listed the function in question as not being a TS function.

Corrective Actions: Corrective actions included repair of the degraded instrument; determination that the system was inoperable under LCO 3.3.5.1, Condition E; revision of the surveillance procedure acceptance criteria; and revision of the TS Basis document to more accurately describe the instrument's safety functions.

Corrective Action References: Condition Reports CR-CNS-2019-00757 and CR-CNS-2019-02325

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee's failure to evaluate operability of the high pressure coolant injection (HPCI) system and pump low discharge flow instrument in accordance with Procedure 0.5.OPS was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone. Specifically, the HPCI pump low discharge flow instrument was not

recognized as being inoperable, and if called upon, it would not have generated the signal to close the minimum flow valve when required, allowing for diverted flow and preventing HPCI from generating its TS surveillance-required flow (4250 gpm) at lower reactor pressures.

Significance: The inspectors assessed the significance of the finding using Appendix A, "Significance Determination of Reactor Inspection Findings for At - Power Situations." The inspectors determined this finding was of very low safety significance (Green) because it: was not a design deficiency; did not represent a loss of system and/or function; did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time; and did not result in the loss of a high safety-significant nontechnical specification train. Specifically, although the minimum flow valve would not have automatically closed when required, HPCI would have maintained the ability to generate the amount of flow used in the licensee's accident analysis (3825 gpm). Therefore, the inspectors concluded that from a probabilistic risk assessment perspective, the actual safety function of HPCI was not lost.

Cross-Cutting Aspect: H.7 - Documentation: The organization creates and maintains complete, accurate, and up-to-date documentation. Specifically, the licensee failed to maintain complete and accurate TS basis documents and surveillance procedures to ensure that the function of the HPCI minimum flow valve closure instrumentation was properly described.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Licensee Procedure 0.5.OPS, "Operations Review of Condition Reports / Operability Determination," Revision 62, an Appendix B quality related procedure, was established to control the operability evaluation process for technical specification equipment. Step 5.1.13.6.d. includes operability determination requirements for degraded conditions, and states, "ensure all Tech Spec Surveillance Requirements can be met."

Contrary to the above, on January 25, 2019, operations personnel failed to ensure all technical specification surveillance requirements could be met for a degraded condition. Specifically, when the HPCI pump low discharge flow instrument failed to generate the minimum flow valve closure signal during surveillance testing, the licensee failed to recognize that HPCI surveillance requirements for pump flow could not be met. As a result, the instrument was inoperable, and although it was repaired within 5 hours of discovery, the inoperability was not recognized until inspectors challenged the initial determination.

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

EXIT MEETINGS AND DEBRIEFS

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

- On May 23, 2019, the inspectors presented the radiation protection inspection results to Mr. J. Dent, Jr., Site Vice President, and other members of the licensee staff.

- On June 20, 2019, the inspectors presented the emergency preparedness program inspection results to Mr. J. Dent, Jr., Site Vice President, and other members of the licensee staff.
- On July 16, 2019, the inspectors presented the integrated inspection results to Mr. D. Buman, Director of Nuclear Safety Assurance, and other members of the licensee staff.

DOCUMENTS REVIEWED

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| 71111.01 | Corrective Action Documents | CR-CNS- | 2019-03587 | |
| 71111.01 | Miscellaneous | IOA | Interface Operating Agreement Between NPPD Operations Business Unit and NPPD Nuclear Power Group Business Unit – Transmissions Operations | 10 |
| 71111.01 | Procedures | 5.3GRID | Degraded Grid Voltage | 52 |
| 71111.01 | Work Orders | WO | 5190544, 5222296, 5286529, 5304348 | |
| 71111.04 | Corrective Action Documents | CR-CNS- | 2019-02340, 2019-02751, 2019-02754, 2019-02783, 2019-03125, 2019-03223, 2019-03271 | |
| 71111.04 | Drawings | 2037 | H&V Standby Gas Treatment & Offgas Filters | 71 |
| 71111.04 | Procedures | 2.2.67A | Reactor Core Isolation Cooling System Component Checklist | 23 |
| 71111.04 | Procedures | 2.2.67B | Reactor Core Isolation Cooling System Instrument Valve Checklist | 3 |
| 71111.04 | Procedures | 2.2.71 | Service Water System | 125 |
| 71111.04 | Procedures | 2.2.73 | Standby Gas Treatment System | 56 |
| 71111.04 | Procedures | 2.2A.SGT.DIV1 | Standby Gas Treatment System Component Checklist (DIV 1) | 5 |
| 71111.04 | Procedures | 2.2A.SW.DIV0 | Service Water System Non-Divisional Component Checklist | 9 |
| 71111.04 | Procedures | 2.2A.SW.DIV1 | Service Water System Component Checklist (DIV 1) | 20 |
| 71111.04 | Procedures | 2.4HVAC | Building Ventilation Abnormal | 23 |
| 71111.05Q | Corrective Action Documents | CR-CNS- | 2019-02058, 2019-02516, 2019-02591, 2019-03195 | |
| 71111.05Q | Miscellaneous | CNS-FP-214 | Reactor Building Southwest Quadrant | AD/05 |
| 71111.05Q | Miscellaneous | CNS-FP-215 | Reactor Building First Floor Elevation 903'-6" | AC/06 |
| 71111.05Q | Miscellaneous | CNS-FP-220 | Reactor Building SBLC Area | AC/08 |
| 71111.05Q | Procedures | 0-BARRIER | Barrier Control Process | 28 |
| 71111.05Q | Procedures | 0-BARRIER-MAPS | Barrier Maps | 9 |
| 71111.05Q | Procedures | 0-BARRIER-REACTOR | Reactor Building | 13 |
| 71111.05Q | Procedures | 6.SC.502 | Secondary Containment Penetration Examination | 19 |

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| 71111.05Q | Procedures | CNS-FP-213 | Reactor Building Northwest Quadrant Elevations 881'-9" and 859'-9" | AC/06 |
| 71111.05Q | Procedures | CNS-FP-234 | Office Building Cable Expansion Room Elevation 918' 6" | 4 |
| 71111.06 | Corrective Action Documents | CR-CNS- | 2019-02921, 2019-02931 | |
| 71111.06 | Drawings | 2038 | Reactor Building Floor and Roof Drain System | 55 |
| 71111.06 | Miscellaneous | NEDC 09-102 | Internal Flooding – HELB, MELF, and Feedwater Line Break | 2 |
| 71111.06 | Procedures | 0-BARRIER | Barrier Control Process | 28 |
| 71111.06 | Procedures | 2.3 S-1 | Panel S – Annunciator S-1 | 30 |
| 71111.07A | Corrective Action Documents | CR-CNS- | 2018-00541, 2019-02541 | |
| 71111.07A | Miscellaneous | Generic Letter 89-13 | Program Commitments | 04/30/2019 |
| 71111.07A | Procedures | 13.17.2 | Thermal Performance Test Procedure for Residual Heat Removal Heat Exchangers | 16 |
| 71111.07A | Procedures | 3.10 | Flow Accelerated Corrosion (FAC) and Microbiologically Influenced Corrosion (MIC) Program Implementation | 16 |
| 71111.07A | Procedures | 7.0.5 | CNS Post-Maintenance Testing | 59 |
| 71111.07A | Procedures | 7.2.42.2 | RHR Heat Exchanger Maintenance | 10 |
| 71111.07A | Work Orders | WO | 5164185, 5210951 | |
| 71111.11Q | Corrective Action Documents | CR-CNS- | 2019-03179 | |
| 71111.11Q | Drawings | 2.3_K-2 | Panel K – Annunciator K-2 | 8 |
| 71111.11Q | Drawings | 2.3_M-1 | Panel M – Annunciator M-1 | 20 |
| 71111.11Q | Miscellaneous | 11614584 | Routine Troubleshooting Plan – SGT Train B, Reactor Building HVAC | 0 |
| 71111.11Q | Miscellaneous | SKL 05151363 | Performance Mode #7 | 0 |
| 71111.11Q | Procedures | 2.2.47 | HVAC Reactor Building | |
| 71111.11Q | Procedures | 6.1SW.401 | Diesel Generator Service Water Check Valve and Sump Test (IST) | 3 |
| 71111.11Q | Procedures | 6.CRD.301 | Withdrawn Control Rod Operability IST Test | 32 |
| 71111.11Q | Procedures | Emergency Operating Procedure 1A | EOP Flow Chart 1A | 22 |

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| 71111.11Q | Procedures | Emergency Operating Procedure 5A | EOP Flow Chart 5A | 19 |
| 71111.12 | Corrective Action Documents | CR-CNS- | 2018-07300, 2018-07359, 2018-07893, 2018-07897, 2018-07935, 2018-07996, 2019-03061, 2019-03256, 2019-03289, 2019-03488 | |
| 71111.12 | Miscellaneous | | Maintenance Rule Meeting Package | 06/25/2019 |
| 71111.12 | Miscellaneous | Notifications | 11384819, 11391486, 11391978, 11470097, 11490991, 11506236, 11540654, 11543417, 11546697, 11546699, 11564325, 11564880, 11569172, 11569244, 11569961, 11579431, 11604580, 11611874, 11611930, 11613897, 11616392 | |
| 71111.12 | Miscellaneous | RR-F01 | Maintenance Rule Function Basis for RR-F01 | 3 |
| 71111.12 | Miscellaneous | RRMG-F01 | Maintenance Rule Function Basis for RRMG-F01 | 3 |
| 71111.12 | Miscellaneous | RW-F03 | Maintenance Rule Function Basis for RW-F03 | 5 |
| 71111.12 | Miscellaneous | TG-F01 | Maintenance Rule Function Basis for TG-F01 | 3 |
| 71111.12 | Procedures | 0-CNS-LI-102 | Corrective Action Process | 9 |
| 71111.12 | Procedures | 0.40 | Work Control Program | 94 |
| 71111.13 | Corrective Action Documents | CR-CNS- | 2019-02341, 2019-02450, 2019-02510, 2019-03559, 2019-03561 | |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – SWBP and RHR B Window Week 1917 | 0 |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – HPCI Window Week 1916 | 2 |
| 71111.13 | Miscellaneous | | Critical Evolutions Meeting PowerPoint for WO 5293548, Temporary Leak Repair RF-V-527 Reactor Feed Flushing Line Vent | |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – Week 1918 RHR 'A' Window | 0 |
| 71111.13 | Miscellaneous | | Risk Management Plan – Main Generator MVAR Testing per 15.GEN.602 | 6/18/2019 |
| 71111.13 | Miscellaneous | | Critical Evolutions Meeting Presentation – RRMG B Clamping | |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – DG2 LCO | 04/11/2019 |

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| 71111.13 | Miscellaneous | | Risk Management Plan – Repair Diesel Generator 2 Jacket Water Heat Exchanger Flange Leak | 04/11/2019 |
| 71111.13 | Miscellaneous | SKL051-51-375 | Just-in-time Training – Ops ‘B’ RRMG Scoop Tube Clamp and De-clamp JITT | 0 |
| 71111.13 | Procedures | 0-PROTECT-EQP | Protected Equipment Program | 46 |
| 71111.13 | Procedures | 15.GEN.602 | Main Generator Power Verification | 0 |
| 71111.13 | Procedures | 7.2.85 | Reactor Recirculation Motor | |
| 71111.13 | Procedures | 9.EN-RP-101 | Access Control for Radiologically Controlled Areas | 20 |
| 71111.13 | Procedures | 9.EN-RP-108 | Radiation Protection Posting and Labeling | 15 |
| 71111.13 | Work Orders | WO | 5130544, 5174247, 5210476, 5211716, 5292133, 5293548, 5295757 | |
| 71111.15 | Corrective Action Documents | CR-CNS- | 2005-03329, 2018-04112, 2018-08609, 2018-08614, 2018-08621, 2018-08638, 2018-08657, 2019-00439, 2019-00443, 2019-00702, 2019-00757, 2019-01928, 2019-02061, 2019-02073, 2019-02325, 2019-02449, 2019-02467, 2019-02471 | |
| 71111.15 | Drawings | 2044 | Flow Diagram High Pressure Coolant Injection and Reactor Feedwater Systems | 76 |
| 71111.15 | Miscellaneous | Admin Letter 98-10 | Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety | 12/29/1998 |
| 71111.15 | Miscellaneous | NEDC 10-004 | Fire PRA Plant Boundary Definition and Partitioning | 2 |
| 71111.15 | Miscellaneous | NEDC 10-080 | NFPA 805 Chapter 3 Fundamental Fire Protection Program and Design Elements Review | 4 |
| 71111.15 | Miscellaneous | NEDC 14-043 | Fire Safety Analysis for Entire Power Block | 1 |
| 71111.15 | Miscellaneous | NEDC 97-023 | HPCI Minimum Flow Line Evaluation | 1, 2, 3 |
| 71111.15 | Miscellaneous | Notification | 11583394 | |
| 71111.15 | Procedures | 0-BARRIER | Barrier Control Process | 27 |
| 71111.15 | Procedures | 0.23 | CNS Fire Protection Plan | 79 |
| 71111.15 | Procedures | 0.26 | Surveillance Program | 71 |
| 71111.15 | Procedures | 0.31 | Equipment Status Control | 89 |
| 71111.15 | Procedures | 0.7.1 | Control of Combustibles | 40 |
| 71111.15 | Procedures | 5.3NBPP | No Break Power Failure | 23 |
| 71111.15 | Procedures | 6.1EE.602 | Div 1 125V/250V Station Battery 92 Day Check | 7 |

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| 71111.15 | Procedures | 6.2EE.602 | Div 2 125V/250V Station Battery 92 Day Check | 6 |
| 71111.15 | Procedures | 6.EE.609 | 125V/250V Station Battery Intercell Connection Testing | 19 |
| 71111.15 | Procedures | 6.FP.606 | Fire Barrier/Penetration Seal Visual Examination | 25 |
| 71111.15 | Procedures | 6.HPCI.312 | HPCI Pump Low Discharge Flow Channel Calibration | 10 |
| 71111.15 | Procedures | 6.HPCI.712 | HPCI Pump Low Discharge Flow Channel Functional Test | 4 |
| 71111.15 | Procedures | 7.2.78.2 | Pipe Penetration Seal Installation Using Gasket Placement | 1 |
| 71111.18 | Corrective Action Documents | CR-CNS- | 2016-07742, 2018-07736, 2018-07780, 2018-08411, 2019-00668 | |
| 71111.18 | Miscellaneous | | Maintenance Rule Function MS-F04 Performance Criteria Basis | 4 |
| 71111.18 | Miscellaneous | 5274251 | TCC | |
| 71111.18 | Miscellaneous | DEC-5274251 | MS-AOV-739AV Indicating Lights | 1 |
| 71111.18 | Work Orders | WO | 5274155, 5274250 | |
| 71111.19 | Corrective Action Documents | CR-CNS- | 2019-02154, 2019-02345, 2019-02346, 2019-02462, 2019-02471, 2019-02477, 2019-03230, 2019-03242 | |
| 71111.19 | Drawings | 791E271, Sheet 6 | HPCI System Elementary Diagram | 21 |
| 71111.19 | Miscellaneous | | FMEA for CR-2019-02345; HPCI Speed Indication Issue | 04/19/2019 |
| 71111.19 | Miscellaneous | 11602479 | Routine Troubleshooting Plan – HPCI Speed Indication Issue | 3, 4 |
| 71111.19 | Procedures | 2.2.18.2 | System Operating Procedure 4160V Breaker Operations | 5 |
| 71111.19 | Procedures | 6.1SGT.301 | SGT Operability Test/Offgas Flow Monitor Channel Functional Test IST (Div 1) | 16 |
| 71111.19 | Procedures | 6.2REC.101 | REC Surveillance Operation | 17 |
| 71111.19 | Procedures | 6.2RHR.101 | RHR Test Mode Surveillance Operation (IST) (Div 2) | 38 |
| 71111.19 | Procedures | 6.2SGT.301 | SGT Operability Test/Offgas Flow Monitor Channel Functional (Div 2) | 17 |
| 71111.19 | Procedures | 6.HPCI.103 | HPCI IST and 92 Day Test Mode | 58 |
| 71111.19 | Procedures | 6.HPCI.316 | HPCI Control System Calibration Test | 24 |
| 71111.19 | Procedures | 7.0.1.7 | Troubleshooting Plant Equipment | 15 |
| 71111.19 | Work Orders | WO | 5130544, 5155002, 5155003, 5155004, 5185366, 5187211, 5192542, 5207498, 5210476, 5211419, 5211716 | |
| 71111.22 | Corrective Action Documents | CR-CNS- | 2019-02038, 2019-02222, 2019-02342, 2019-02345, 2019-02346, 2019-02381, 2019-02469 | |

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| 71111.22 | Miscellaneous | GE SIL 336 | Surveillance Testing Recommendations for HPCI and RCIC Systems | 1 |
| 71111.22 | Miscellaneous | GE SIL 351 | HPCI and RCIC Turbine Control System Calibration | 2 |
| 71111.22 | Procedures | 6.HPCI.103 | HPCI IST and 92 Day Test Mode | 58 |
| 71111.22 | Procedures | 6.HPCI.316 | HPCI Control System Calibration Test | 24 |
| 71111.22 | Procedures | 6.RCIC.302 | RCIC Pump Low Discharge Flow Channel Calibration | 11 |
| 71111.22 | Procedures | 6.SUMP.101 | Z Sump and Air Ejector Holdup Line Drain Test | 32 |
| 71111.22 | Procedures | 8.8DWAM | Particulate and Iodine Sample Collection for Drywell Atmosphere Monitor | 8 |
| 71111.22 | Procedures | EN-OP-109 | Drywell Leakage | 2C0 |
| 71111.22 | Work Orders | WO | 5183570, 5185369 | |
| 71114.02 | Corrective Action Documents | CR-CNS- | 2017-04854, 2017-05001, 2018-00160, 2018-00650, 2018-01477, 2018-02873, 2018-03033, 2018-03695, 2018-06852, 2019-00624, 2019-03074 | |
| 71114.02 | Miscellaneous | | Letter, Mr. T. Morgan, Technological Hazards Branch Chief, FEMA Region VII, to Ms. T. Haynes, Emergency Preparedness Coordinator, Cooper Nuclear Station; Subject: Cooper Nuclear Station Alert and Notification System Design Report, Revision 15 | 8/15/2018 |
| 71114.02 | Miscellaneous | | Cooper Nuclear Station Alert and Notification System Design Report, Revision 15 | June 2018 |
| 71114.02 | Miscellaneous | | Letter, Mr. T. Morgan, Technological Hazards Branch Chief, FEMA Region VII, to Ms. T. Haynes, Emergency Preparedness Coordinator, Cooper Nuclear Station; Subject: Evaluation of Cooper Nuclear Station Alert and Notification Design Report Revision and Narrative Summary of Proposed Changes dated 16 April 2019 | 5/21/19 |
| 71114.02 | Miscellaneous | | Cooper Nuclear Station Alert and Notification System Design Report, Revision 16 | April 2019 |
| 71114.02 | Miscellaneous | | WPS 2900 Series High Power Voice and Siren System, Operating and Troubleshooting Manual | 2005 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-2 | Quarterly EAS Newspaper and Radio Advisories | 3/5/2018 |
| 71114.02 | Miscellaneous | EPDG #2, | Quarterly EAS Newspaper and Radio Advisories | 9/6/2018 |

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| | | Attachment C-2 | | |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-2 | Quarterly EAS Newspaper and Radio Advisories | 3/27/2019 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-2 | Quarterly EAS Newspaper and Radio Advisories | 6/17/2019 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-6 | Annual Fixed Siren Maintenance | 7//19/2017 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-6 | Annual Fixed Siren Maintenance | 7/25/2018 |
| | | EPDG #2, Attachment C-6 | Annual Fixed Siren Maintenance | 8 |
| | | EPDG #2, Attachment C-7 | Issuance of NOAA/EAS Radio Receivers | 2 |
| | | EPDG #2, Attachment C-8 | Quarterly Update of NOAA/EAS Radio Receiver Recipient Data Base | 4 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-8 | Quarterly Review/Update of NOAA/EAS Radio Receiver Recipient Data Base | 3/28/2019 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-8 | Quarterly Review/Update of NOAA/EAS Radio Receiver Recipient Data Base | 9/27/2018 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-8 | Quarterly Review/Update of NOAA/EAS Radio Receiver Recipient Data Base | 3/22/2018 |
| 71114.02 | Miscellaneous | EPDG #2, Attachment C-8 | Quarterly Review/Update of NOAA/EAS Radio Receiver Recipient Data Base | 12/20/2017 |
| 71114.02 | Procedures | 5.7.27 | Alert and Notification System, Revisions 19 & 20 | 12/5/2018 |
| 71114.02 | Procedures | 5.7.27.1 | False Activation of the Alert and Notification System, Revision 9 | 12/5/2018 |
| 71114.02 | Procedures | 5.7.27.2 | NOAA/EAS Radio Malfunction, Revisions 10 & 11 | 12/12/17 |
| 71114.03 | Corrective Action Documents | CR-CNS- | 2017-06338, 2017-06676, 2018-00536, 2018-01047, 2018-01119, 2018-02836, 2018-03795, 2018-03810, 2018-04574, 2018-08060, 2018-08524, 2018-08663, 2019-01594, 2019-02750 | |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 8/1/2017 |
| 71114.03 | Miscellaneous | EPDG #2, | Bi-Monthly ERO Call-In Test | 8/22/2017 |

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| | | Attachment E-3 | | |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 10/26/2017 |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 12/18/2017 |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 2/25/2018 |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 4/26/2018 |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 6/20/18 |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 11/27/2018 |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 12/10/2018 |
| 71114.03 | Miscellaneous | EPDG #2, Attachment E-3 | Bi-Monthly ERO Call-In Test | 3/1/2019 |
| | | EPDG #2, Attachment E-3 | Quarterly ERO Call-In Test | 20 |
| | | EPDG #2, Attachment E-4 | Weekly Pager Test | 1 |
| 71114.03 | Procedures | 5.7.6 | Notification, Revision 74 | 7/18/2018 |
| 71114.03 | Work Orders | WT-2018-0024-072 | | |
| 71114.05 | Corrective Action Documents | CR-CNS- | 2017-04238, 2017-04422, 2017-04466, 2017-04696, 2017-04812, 2017-04854, 2017-05001, 2017-06271, 2018-00524, 2018-00534, 2018-02306, 2018-03069, 2018-03075, 2018-03080, 2018-03100, 2018-03157, 2018-03445, 2018-03810, 2018-03876, 2018-04581, 2018-04582, 2018-04628, 2018-04671, 2018-04705, 2018-04859, 2018-05600, 2018-06852, 2018-07340, 2018-08150, 2018-08615, 2018-08638, 2018-08647, 2018-08657, 2018-08663, 2019-00171, 2019-01118, 2019-01387, 2019-01467, 2019-02739, 2019-02756, 2019-02791, 2019-02842, 2019-02875 | |

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| 71114.05 | Miscellaneous | | Cooper Nuclear Station Emergency Plan | 71, 72, 73 |
| 71114.05 | Miscellaneous | | After-Action Report: December 29, 2018, NOUE on HU3.1 | 1/8/2019 |
| 71114.05 | Miscellaneous | | After-Action Report: March 15, 2019, NOUE on HU1.5 River Level | 4/15/2019 |
| 71114.05 | Miscellaneous | | Media Communication Letter | 12/22/2017 |
| 71114.05 | Miscellaneous | | Evaluation Report for the July 31, 2018, Biennial NRC-Graded Exercise Summary Report | 8/10/2018 |
| 71114.05 | Miscellaneous | | Evaluation Report for the August and September 2018 Mini-Drills | 9/21/2018 |
| 71114.05 | Miscellaneous | | Evaluation Report for the September 12, 2018, Medical Drill | 9/26/2018 |
| 71114.05 | Miscellaneous | | Evaluation Report for the September 13, 2018, Qualification Drill | 10/1/2018 |
| 71114.05 | Miscellaneous | | Evaluation Report for the December 26, 2018, Radiological Protection Drill | 12/26/2018 |
| 71114.05 | Miscellaneous | | Evaluation Report for the December 18, 2018, Full Team Drill | 12/26/2018 |
| 71114.05 | Miscellaneous | | Evaluation Report for the February 26, 2019, Full Team Drill | 3/12/2019 |
| 71114.05 | Miscellaneous | | Evaluation Report for the May 14, 2019, Full Team Drill | 5/21/2019 |
| 71114.05 | Miscellaneous | | Evaluation Report for the January 30, 2018, Full Team Drill, Radiological Monitoring and Protection Drill | 2/14/2018 |
| 71114.05 | Miscellaneous | | Evaluation Report for the February and March 2018 Mini-Drills Critique | 6/15/2018 |
| 71114.05 | Miscellaneous | 2016-0183 | 2017 Emergency Preparedness Pre-NRC Focused Self-Assessment Report | 2/10/2017 |
| 71114.05 | Miscellaneous | 2017-048 | Emergency Preparedness Regulatory Review: Training Qualification Documents, Courses ERO0010105Q and ERO0010105/CT66103 | 8/24/2017 |
| 71114.05 | Miscellaneous | 2017-054 | Emergency Preparedness Regulatory Review: CNS Emergency Plan Revision 70 | 8/24/2017 |
| 71114.05 | Miscellaneous | 2017-08 | Emergency Preparedness Regulatory Review: Procedure 5.7.6, Notification, Revision 73 | 12/14/2017 |
| 71114.05 | Miscellaneous | 2017-084 | Emergency Preparedness Regulatory Review: Commercial Change CC-5229779, MET Alarm Remediation | 1/3/2018 |
| 71114.05 | Miscellaneous | 2018-077 | Emergency Preparedness Regulatory Review: Procedure | 11/11/2018 |

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| | | | 8.11.1 Effects Program, Revision 21 | |
| 71114.05 | Miscellaneous | 2018-086 | Emergency Preparedness Regulatory Review: Procedure 5.7.20, Protective Action Recommendations, Revision 31 | 12/10/2018 |
| 71114.05 | Miscellaneous | 2018-088 | Emergency Preparedness Regulatory Review: Training Qualification Document 0675, ERO Designated Spokesperson, Revision 4 | 3/4/2019 |
| 71114.05 | Miscellaneous | 2019-003 | Emergency Preparedness Regulatory Review: Procedure 5.7.25, Recovery Operations, Revision 23 | 1/21/2019 |
| 71114.05 | Miscellaneous | 2019-011 | Emergency Preparedness Regulatory Review: Procedure 5.7.10, Personnel Assembly and Accountability, Revision 42 | 2/22/2019 |
| 71114.05 | Miscellaneous | 2019-023 | Emergency Preparedness Regulatory Review: Position Instruction Manual EOF17, Field Team Driver, Revision 0 | 4/16/2019 |
| 71114.05 | Miscellaneous | EPDG #2 E-2 | Attachment Monthly and Post-Drill Emergency Response Facility Walkdowns and Testing of Facility Equipment | 6/28/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-1 | Monthly State Notification Telephone System Testing | 2/5/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-1 | Monthly State Notification Telephone System Testing | 6/5/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-1 | Monthly State Notification Telephone System Testing | 11/6/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-1 | Monthly State Notification Telephone System Testing | 12/5/2017 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-3 | Monthly Testing of Cell Phones and Headsets | 12/18/2017 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-3 | Monthly Testing of Cell Phones and Headsets | 11/6/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-3 | Monthly Testing of Cell Phones and Headsets | 6/27/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-3 | Monthly Testing of Cell Phones and Headsets | 2/19/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-4 | Monthly Testing of Alternate Intercom | 2/19/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-4 | Monthly Testing of Alternate Intercoms | 6/27/2018 |

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| 71114.05 | Miscellaneous | EPDG #2, Attachment B-4 | Monthly Testing of Alternate Intercom | 11/6/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-4 | Monthly Testing of Alternate Intercom | 12/15/2017 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-5 | Monthly Testing 2-Way Radios | 12/19/2017 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-5 | Monthly Testing of 2-Way Radios | 11/6/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-5 | Monthly Testing of 2-Way Radios | 6/27/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-8 | Quarterly Satellite Phone Test and Battery Swap | 3/27/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment B-8 | Quarterly Satellite Phone Test and Battery Swap | 3/25/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment C-4 | Semi-Annual Alert and Notification System Sig and Evacuation Map Verification | 5/31/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment C-4 | Semi-Annual Alert and Notification System Sig and Evacuation Map Verification | 11/13/18 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment E-1 | Weekly/Monthly/Semi-Annual Emergency Vehicle Maintenance | 11/20/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment E-1 | Weekly/Monthly/Semi-Annual Emergency Vehicle Maintenance | 6/29/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment E-1 | Weekly/Monthly/Semi-Annual Emergency Vehicle Maintenance | 12/20/2017 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment E-1 | Weekly/Monthly/Semi-Annual Emergency Vehicle Maintenance | 2/28/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment E-2 | Monthly and Post-Drill Emergency Response Facility Walkdowns and Testing of Facility Equipment | 2/27/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment E-2 | Monthly and Post-Drill Emergency Response Facility Walkdowns and Testing of Facility Equipment | 12/20/2017 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment E-2 | Monthly and Post-Drill Emergency Response Facility Walkdowns and Testing of Facility Equipment | 11/6/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment F-1 | Quarterly Emergency Telephone Directory Revisions | 1/31/2018 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
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| 71114.05 | Miscellaneous | EPDG #2, Attachment F-1 | Quarterly Emergency Telephone Directory Revisions | 7/31/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment F-1 | Quarterly Emergency Telephone Directory Revisions | 1/31/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment F-1 | Quarterly Emergency Telephone Directory Revisions | 4/13/2019 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment I-1 | Monthly EOF Diesel Generator Run | 6/27/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment I-1 | Monthly EOF Diesel Generator Run | 11/13/2018 |
| 71114.05 | Miscellaneous | EPDG #2, Attachment I-1 | Monthly EOF Diesel Generator Run | 12/29/2017 |
| 71114.05 | Miscellaneous | EPO001-01-01 | Lesson Plan: Drill Exercise Controller Training | 7 |
| 71114.05 | Miscellaneous | KLD TR-1023 | Cooper Nuclear Station 2018 Population Update Analysis | 9/22/2018 |
| 71114.05 | Miscellaneous | KLD TR-939 | Cooper Nuclear Station 2017 Population Update Analysis | 9/23/2017 |
| 71114.05 | Miscellaneous | LO2016-0183 | 2017 Emergency Preparedness Pre-NRC Focused Self-Assessment Report | 2/10/2017 |
| 71114.05 | Miscellaneous | LO2018-0074 | Pre-NRC Evaluated Exercise Assessment | 6/21/2018 |
| 71114.05 | Miscellaneous | LO2018-0080 | 2018 Emergency Preparedness 50.54(Q) Focused Self-Assessment | 3/21/2018 |
| 71114.05 | Miscellaneous | Notifications | 11280194, 11567855, 11590153 | |
| 71114.05 | Miscellaneous | OTH004-04-03 | Lesson Plan: Classification, Notification, and PARs | 0 |
| 71114.05 | Miscellaneous | OTH004-04-03/70926 | Training Lesson Plan: Classification, Notifications, and PARs, Revision 0 | 2/7/2019 |
| 71114.05 | Miscellaneous | QAD 2017-0029 | QA Audit 17-06, Emergency Preparedness | 9/25/2017 |
| 71114.05 | Miscellaneous | QAD 2018-0023 | QA Audit 18-06, Emergency Preparedness | 9/27/2018 |
| 71114.05 | Procedures | | Evaluation Report for the December 12, 2018, Post-Accident Sampling Drill | |
| 71114.05 | Procedures | | Evaluation Report for the May 22, 2018, Team 3B Dress Rehearsal | 6/6/2018 |
| 71114.05 | Procedures | 5.7.21 | Maintaining Emergency Preparedness, Emergency Exercises, Drills, Tests, and Evaluations, Revision 58 | 10/26/2018 |
| 71114.05 | Procedures | 5.7.28 | Administration of the Positional Instruction Manuals, Revision 9 | 7/5/2016 |

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| 71114.05 | Procedures | 5.7COMMUN | Communications, Revisions 29 & 30 | 1/19/2019 |
| 71114.05 | Procedures | EPDG #2, Attachment B-1 | Monthly State Notification Telephone System Testing | 13 |
| 71114.05 | Procedures | EPDG #2, Attachment B-2 | Monthly Testing of FTS-2001 System Telephones | 14 |
| 71114.05 | Procedures | EPDG #2, Attachment B-3 | Monthly Testing of Cell Phones and Headsets | 15 |
| 71114.05 | Procedures | EPDG #2, Attachment B-5 | Monthly Testing of Two-Way Radios | 13 |
| 71114.05 | Procedures | EPDG #2, Attachment C-2 | Quarterly EAS Newspaper and Radio Advisories | 10 |
| 71114.05 | Procedures | EPDG #2, Attachment C-3 | Semi-Annual Dissemination of Emergency Public Information/Transient Population Information | 10 |
| 71114.05 | Procedures | EPDG #2, Attachment C-4 | Semi-Annual Alert and Notification System Sign and Evacuation Map Verification | 10 |
| 71114.05 | Procedures | EPDG #2, Attachment D-1 | Annual Nemaha County Hospital Training | 8 |
| 71114.05 | Procedures | EPDG #2, Attachment D-2 | Annual Emergency Plan Training for Law Enforcement Agencies | 10 |
| 71114.05 | Procedures | EPDG #2, Attachment D-3 | Annual Auburn Rescue Squad and Midwest Medical Transport Training | 10 |
| 71114.05 | Procedures | EPDG #2, Attachment D-4 | Annual Volunteer Fire Department Training | 9 |
| 71114.05 | Procedures | EPDG #2, Attachment D-5 | Annual News Media Orientation/Training | 9 |
| 71114.05 | Procedures | EPDG #2, Attachment D-6 | Annual Emergency Plan Training for Local Emergency Management Agencies | 0 |
| 71114.05 | Procedures | EPDG #2, Attachment E-2 | Monthly and Post-Drill Emergency Response Facility Walkdowns and Testing of Facility Equipment | 30 |
| 71114.05 | Procedures | EPDG #2, Attachment F-2 | Annual EAL Review | 9 |
| 71114.05 | Procedures | EPDG #2, Attachment F-3 | Maintenance of Emergency Plan Letters of Agreement | 14 |
| 71114.05 | Procedures | EPDG #2, | Annual CNS Emergency Plan Review | 1 |

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| | | Attachment F-7 | | |
| 71114.05 | Procedures | EPDG #2, Attachment H-2 | Drill and Exercise Guide, Scenario Development | 11 |
| 71114.05 | Procedures | EPDG #2, Attachment I-1 | Monthly EOF Diesel Generator Run | 5 |
| 71114.05 | Work Orders | WO | 5121615, 5146472, 5148893, 5166231, 5167152, 5167449, 5169963, 5192375, 5197886, 5255090, 5273942, WT-2017-0040-041 | |
| 71114.06 | Corrective Action Documents | CR-CNS- | 2019-02739, 2019-02756, 2019-02779, 2019-02791, 2019-02805 | |
| 71114.06 | Miscellaneous | | Drill Scenario Guide | 5/14/2019 |
| 71124.01 | Corrective Action Documents | CR-CNS- | 2018-06530, 2018-06811, 2018-07755, 2018-07999, 2019-00434, 2019-02361 | |
| 71124.01 | Corrective Action Documents Resulting from Inspection | CR-CNS- | 2019-02870 | |
| 71124.01 | Miscellaneous | CNS-RP-138 | Source Report - Leak Test Results | 06/27/2018 |
| 71124.01 | Miscellaneous | CNS-RP-138 | Source Report - Leak Test Results | 12/14/2018 |
| 71124.01 | Procedures | 9.EN-RP-141 | Job Coverage | 19 |
| 71124.01 | Procedures | 9.RADOP.5 | Airborne Radioactivity Sampling | 32 |
| 71124.01 | Radiation Surveys | CNS-1811-0063 | Reactor Water Clean-Up Heat Exchanger Room | 11/13/2018 |
| 71124.01 | Radiation Surveys | CNS-1811-0066 | Reactor Water Clean-Up Heat Exchanger Room | 11/14/2018 |
| 71124.01 | Radiation Surveys | CNS-1811-0069 | Reactor Water Clean-Up Heat Exchanger Room | 11/14/2018 |
| 71124.01 | Radiation Surveys | CNS-1812-0036 | Refuel Floor | 12/20/2018 |
| 71124.01 | Radiation Surveys | CNS-1902-0026 | Waste Collector Tanks | 02/21/2019 |
| 71124.01 | Radiation Surveys | CNS-1902-0027 | Waste Collector Tanks | 02/21/2019 |
| 71124.01 | Radiation | CNS-1903-0013 | Residual Heat Removal Heat Exchanger | 03/20/2019 |

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| | Surveys | | | |
| 71124.01 | Radiation Surveys | CNS-1903-0020 | Refuel Floor | 03/27/2019 |
| 71124.01 | Radiation Surveys | CNS-1904-0020 | Residual Heat Removal Heat Exchanger | 04/20/2019 |
| 71124.01 | Radiation Work Permits (RWPs) | 2018-106 | TIP - RP HIGH RISK - Activities | 02 |
| 71124.01 | Radiation Work Permits (RWPs) | 2019-100 | REACTOR BLD - LOCKED HRA Activities | 00 |
| 71124.01 | Radiation Work Permits (RWPs) | 2019-102 | HIC Prep / Shipments | 00 |
| 71124.01 | Self-Assessments | LO 2018-0185 | Pre-NRC Assessment for Radiological Hazard Assessment and Exposure Controls-IP 71124.01 and In-Plant Airborne Radioactivity Control and Mitigation-IP 71124.03 | 01/21/2019 |
| 71124.03 | Corrective Action Documents | CR-CNS- | 2017-04470, 2017-06407, 2017-07491, 2018-01888, 2018-05697, 2019-02485 | 07/24/2017 |
| 71124.03 | Corrective Action Documents Resulting from Inspection | CR-CNS- | 2019-02877 | |
| 71124.03 | Miscellaneous | CNS RP-402 | SCBA Functionals | 03/18/2019 |
| 71124.03 | Miscellaneous | CNS RP-402 | SCBA Functionals | 04/02/2019 |
| 71124.03 | Miscellaneous | CNS RP-403 | Annual Respirator Inspection | 10/12/2017 |
| 71124.03 | Miscellaneous | CNS RP-403 | Annual Respirator Inspection | 05/23/2019 |
| 71124.03 | Miscellaneous | CNS RP-411 | Plant Service Air, Air Quality Data Sheet | 07/30/2018 |
| 71124.03 | Miscellaneous | CNS RP-411 | Plant Service Air, Air Quality Data Sheet | 08/28/2017 |
| 71124.03 | Miscellaneous | CNS RP-415 | Bauer Air Quality Review | 01/22/2019 |
| 71124.03 | Miscellaneous | CNS RP-415 | Bauer Air Quality Review | 03/28/2019 |
| 71124.03 | Miscellaneous | GEN002-01-13 (CT#47231) | Respiratory Protection SCBA Refresher | Rev. 01 |
| 71124.03 | Miscellaneous | Surveillance 5078037 | Control Room Emergency Filter System Flow Test, Charcoal and HEPA Filter Leak Test, Filter DP Test, and Charcoal Sample Analysis | 05/22/2017 |
| 71124.03 | Miscellaneous | Surveillance | SGT B Carbon Sample, Carbon Adsorber and HEPA Filter | 05/18/2018 |

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| | | 5132845 | In-Place Leak Test, and Components Leak Test | |
| 71124.03 | Procedures | 9.EN-RP-122 | Alpha Monitoring | Rev. 4 |
| 71124.03 | Procedures | 9.RESP.1 | Respiratory Protection Program | Rev. 16 |
| 71124.03 | Procedures | 9.RESP.2 | Self-Contained Breathing Apparatus | Rev. 26 |
| 71124.03 | Self-Assessments | LO 2018-0185 | Pre-NRC Assessment for Radiological Hazard Assessment and Exposure Controls-IP 71124.01 and In-Plant Airborne Radioactivity Control and Mitigation-IP 71124.03 | 01/21/2019 |
| 71151 | Corrective Action Documents | CR-CNS- | 2018-02306, 2018-04184, 2018-04315, 2018-05838, 2018-05839, 2018-06236, 2018-06546, 2018-06852, 2018-07394, 2019-00111, 2019-00242, 2019-00243, 2019-00352, 2019-00353, 2019-00623, 2019-01274, 2019-01467, 2019-02752, 2019-02755, 2019-02791, 2019-02841 | |
| 71151 | Miscellaneous | | Memorandum, Subject: 2018 Drill and Exercise Opportunities | 6/11/2018 |
| 71151 | Miscellaneous | | Memorandum, Subject: 2019 Drill and Exercise Opportunities, Revision 3 | 5/9/2019 |
| 71151 | Miscellaneous | | 2Q18 thru 1Q19 PI Verification Package | |
| 71151 | Miscellaneous | 0-EN-LI-114; Attachment 9.3 | PI Documentation and Data Review Form; Performance Indicator - Occupational Exposure Effectiveness | 10/01/2018 through 03/31/2019 |
| 71151 | Procedures | 5.7.1 | Emergency Classification, Revisions 61 & 62 | 2/6/2019 |
| 71151 | Procedures | 5.7.2 | Emergency Director EPIP, Revision 36 | 2/28/2018 |
| 71151 | Procedures | 5.7.20 | Protective Action Recommendations, Revisions 30 & 31 | 12/13/2018 |
| 71151 | Procedures | 5.7.27 | Alert and Notification System, Revisions 19 & 20 | 12/5/2018 |
| 71151 | Procedures | 5.7.6 | Notification, Revision 74 | 7/18/2018 |
| 71151 | Procedures | EPDG #.2, Attachment C-1 | Semi-Monthly Alert and Notification System Siren Testing | 17 |
| 71151 | Procedures | EPDG #2, Attachment C-5 | Annual Full-Cycle Sounding of the Alert and Notification System Sirens | 14 |
| 71151 | Procedures | EPDG #2, Attachment G-1 | Emergency Preparedness Performance Indicator Guide | 25 |
| 71151 | Procedures | EPDG #2, Attachment H-3 | Drill and Exercise Manual, EP DEP Evaluation Process for Limited Scope Simulator Drills | 11 |
| 71151 | Work Orders | WO | 5255284, 5267418, 5267419, 5273175, 5284182, 5284775, | |

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| | | | 5285025, 5290430 | |
| 71152 | Corrective Action Documents | CR-CNS- | 2018-07934, 2018-07935, 2018-07996, 2018-08127, 2019-01754, 2019-01757, 2019-01765, 2019-02773, 2019-03367 | |
| 71152 | Drawings | 44D209845 | Voltage Regulator | N04 |
| 71152 | Drawings | 44D209846 | Static Exciter & Voltage Regulator | N03 |
| 71152 | Miscellaneous | LBDCR 2007-018 | TRM 3.7.1 and Bases River Level Change | 06/12/2007 |
| 71152 | Miscellaneous | LBDCR 2019-007 | TRM 3.7.1, River Level Including Bases | 4/18/2019 |
| 71152 | Procedures | 5.1FLOOD | Flood | 25, 26, 27 |
| 71152 | Procedures | 7.3.30.2 | RRMG Set Voltage Regulator Tuning | 8 |
| 71152 | Work Orders | WO | 5057910, 5179313 | |
| 71153 | Corrective Action Documents | CR-CNS- | 2017-03721, 2017-05081, 2018-05904, 2018-05907 | |
| 71153 | Miscellaneous | ANSI/ANS-56.8 | Containment System Leakage Testing Requirements | 1994 |
| 71153 | Miscellaneous | Engineering Report 2018-034 | RE30 Past Operability of MSIVs and MS Pathway | 0 |
| 71153 | Procedures | 6.PC.207 | Torus to Drywell Vacuum Breaker Operation | 10 |
| 71153 | Work Orders | WO | 5054353, 5080846, 5094244, 5096873, 5102515, 5195069 | |