**UNITED STATES**
**NUCLEAR REGULATORY COMMISSION**
**REGION IV**
**1600 EAST LAMAR BOULEVARD**
**ARLINGTON, TEXAS 76011-4511**

October 30, 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 05000298/2019003

Dear Mr. Dent:

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Cooper Nuclear Station. On October 17, 2019, the NRC inspectors discussed the results of this inspection with Mr. J. Sullivan, General Manager Plant Operations, and other members of your staff. The results of this inspection are documented in the enclosed report.

Two findings of very low safety significance (Green) are documented in this report. These findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance of the violations 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/***

Christopher W. Newport, Acting Chief
Reactor Projects Branch C
Division of Reactor Projects

Docket No. 05000298
License No. DPR-46

Enclosure:
As stated

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SUBJECT: COOPER NUCLEAR STATION – INTEGRATED INSPECTION REPORT 05000298/2019003 – October 30, 2019

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| OFFICE | SRI:DRP/C | RI:DRP/C | ARI:DRP/C | C:DRS/EB1 | C:DRS/EB2 |
| NAME | PVossmar | MStafford MHS | LFlores LRF | VGaddy | NTaylor NHT |
| DATE | 10/28 PJV | 10/28/19 | 10/28/19 | 10/23/19 | 10/25/2019 |
| OFFICE | C:DRS/OB | ATL:DRS/IPAT | C:DRS/RCB | C:DNMS/RxIB | SPE:DRP/C |
| NAME | GWerner *GEW* | RAzua *RVA* | MHaire*MSH* | GWarnick*GAW* | DProulx;*DLP* |
| DATE | 10/23/2019 | 10/24/2019 | 10/222/2019 | 10/23/19 | 10/22/19 |
| OFFICE | ABC:DRP/C | | | | |
| NAME | CNewport | | | | |
| DATE | 10/30/2019 | | | | |

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

| | |
|---|---|
| Docket Number: | 05000298 |
| License Number: | DPR-46 |
| Report Number: | 05000298/2019003 |
| Enterprise Identifier: | I-2019-003-0003 |
| Licensee: | Nebraska Public Power District |
| Facility: | Cooper Nuclear Station |
| Location: | Brownville, NE |
| Inspection Dates: | July 1, 2019 to September 30, 2019 |
| Inspectors: | B. Baca, Health Physicist<br>L. Carson, Senior Health Physicist<br>L. Flores, Project Engineer<br>N. Greene, Senior Health Physicist<br>J. O'Donnell, Health Physicist<br>N. Okonkwo, Reactor Inspector<br>D. Proulx, Senior Project Engineer<br>W. Sifre, Senior Reactor Inspector<br>M. Stafford, Senior Resident Inspector<br>C. Stott, Reactor Inspector<br>P. Vossmar, Senior Resident Inspector |
| Approved By: | Christopher W. Newport, Acting Chief<br>Reactor Projects Branch C<br>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.

## List of Findings and Violations

| Failure to Implement Fire Protection Program Surveillance Requirements for a Fire Barrier Seal | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Mitigating Systems | Green<br>NCV 05000298/2019003-01<br>Open/Closed | [P.1] - Identification | 71111.05Q |
| The inspectors identified a Green, non-cited violation of License Condition 2.C(4), "Fire Protection," for the failure to implement all provisions of the approved fire protection program. Specifically, prior to July 2, 2019, the licensee failed to implement Surveillance Procedure 6.FP.606, "Fire Barrier/Penetration Seal Visual Examination," Revision 25, for visual inspection of the cable expansion room west wall fire barrier and its associated MN 46 penetration to ensure that an unsealed penetration opening was identified. As a result, the licensee failed to identify that the conduit seal was degraded until it was discovered by the inspectors on July 2, 2019, and subsequently declared nonfunctional by operations personnel. | | | |

| Failure to Take Required Actions of Technical Specification 3.5.2 for Reactor Pressure Vessel Water Inventory Control During Secondary Containment Work | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Barrier Integrity | Green<br>NCV 05000298/2019003-02<br>Open/Closed | [H.5] - Work Management | 71153 |
| The inspectors documented a self-revealed, Green, non-cited violation of Technical Specification 3.5.2, "Reactor Pressure Vessel Water Inventory Control," for the licensee's failure to take technical specification required actions during a reactor pressure vessel water inventory control activity. Specifically, on October 10, 2018, during a planned water inventory control activity, the licensee failed to meet Technical Specification 3.5.2, Condition C, when an unplanned and unrecognized breach of secondary containment occurred, and the licensee did not verify secondary containment could be closed as required until the breach was discovered several hours later. In particular, during residual heat removal service water piping work, the penetration of the same residual heat removal service water piping on both the control building and reactor building sides of the secondary containment boundary was not recognized, and as a result, a containment closure plan was not in place. | | | |

## Additional Tracking Items

| Type | Issue Number | Title | Report Section | Status |
|---|---|---|---|---|
| LER | 05000298/2018-002-00 | Lack of Procedural Guidance Results in Work Scheduling Error Causing Breach of Secondary Containment and Condition Prohibited by Technical Specifications | 71153 | Closed |

## PLANT STATUS

Cooper Nuclear Station began the inspection period at rated thermal power. On August 23, 2019, the unit was down powered to 70 percent for a control rod sequence exchange. The plant was returned to rated thermal power on August 24, 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

71111.04Q - Equipment Alignment

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

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

(1) Standby liquid control B on July 8, 2019
(2) Service water booster pump A subsystem on July 16, 2019
(3) Reactor core isolation cooling on September 13, 2019
(4) Core spray B on September 26, 2019

71111.04S - Equipment Alignment

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated system configurations during a complete walkdown of the hardened containment vent system installed in accordance with NRC Order EA-13-109 on August 27, 2019. [Completion of this sample was in accordance with the guidance in Temporary Instruction 2515/193, with credit taken in IP 71111.04 - further details are documented in Inspection Report 05000298/2019012, ADAMS Accession No. ML19266A571.]

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) Cable expansion room on July 3, 2019
(2) Reactor building suppression pool 859 feet elevation on July 22, 2019
(3) Southeast quad 859 feet and 881 feet elevations on August 21, 2019
(4) Control cable spreading room on September 17, 2019
(5) Critical switchgear rooms 1F and 1G on September 18, 2019

71111.06 - Flood Protection Measures

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

The inspectors evaluated internal flooding mitigation protections in the:

(1) Reactor building 931 feet elevation on September 30, 2019

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

The inspectors evaluated cable submergence protection in:

(1) Sump W during sump pump failure and elevated river levels on September 27, 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)

(1) The inspectors observed and evaluated licensed operator performance in the control room during a planned quarterly downpower on August 24, 2019.

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

(1) The inspectors observed and evaluated a licensed operator training drill performed as a corrective action for a declining emergency response performance trend on July 30, 2019.

71111.12 - Maintenance Effectiveness

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

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

(1) Reactor building essential ventilation units on September 30, 2019

Quality Control (IP Section 02.02) (1 Sample)

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

(1) Reactor core isolation cooling commercially dedicated signal conditioner failure on September 24, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

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

(1) Standby liquid control A pump planned maintenance on July 8, 2019
(2) Unplanned reactor core isolation cooling unavailability on July 24, 2019
(3) Core spray B planned work window on August 13, 2019
(4) Emergency station service transformer planned work window on August 21, 2019
(5) Emergent RF-MO-29 valve packing injection on August 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) Part 21 for reactor core isolation cooling positioner defect on July 3, 2019
(2) Residual heat removal to radwaste primary containment isolation valve classification/operability on August 15, 2019
(3) Service water check valve 37 past operability on August 19, 2019
(4) Southeast quad fan coil unit failed to meet surveillance acceptance criteria on August 16, 2019
(5) Questionable results during containment isolation valve local leak-rate test on September 19, 2019

71111.17T - Evaluations of Changes, Tests, and Experiments

Sample Selection (IP Section 02.01) (33 Samples)

The inspectors reviewed the following evaluations, screenings, and/or applicability determinations for 10 CFR 50.59 from September 20, 2013, to September 20, 2019:

(1) Evaluation 2013-3, Revision 2, Remove heater bay steam leak detection temperature switches
(2) Evaluation 2015-2, Revision 0, Startup transformer replacement
(3) Evaluation 2015-4, Revision 1, Time critical operator action for suppression pool cooling
(4) Evaluation 2015-5, Revision 1, Reactor containment isolation cooling turbine governor control system replacement
(5) Evaluation 2018-1, Revision 0, Engineering Change (EC) 6038060, Open phase protection system
(6) Evaluation 2018-2, Revision 0, Engineering Evaluation (EE) 18-012, Extending inspection duration of underwater torus region
(7) Evaluation 2019-2, Revision 0, Technical Requirements Manual 3.7.1, flooding forecast removed
(8) Screen 71719, 161 kV low voltage limit
(9) Screen 71720, CR-CNS-2016-02270, Standing Order 2016-005
(10) Screen 81728, R3402, sudden pressure relay replacement

(11) Screen 81739, Service water surveillance operation, Division 2
(12) Screen 81731, Use of NSF fuel channels
(13) Screen 81734, Control room air conditioning temporary compressor breaker
(14) Screen 91748, Procedure 6.1EE.306, 4160 V, bus 1F, undervoltage relay channel functional test
(15) Screen 91758, 4160 V, bus 1G, undervoltage relay channel functional test (Division 2)
(16) Screen 91770, Reactor equipment cooling sequential load time delay relay relocation
(17) Screen 91778, Code Case N-513-3 compensatory actions
(18) Screen 91795, Operability Evaluation CR-CNS-2016-05558
(19) Screen 91793, Reclassify MCC-L and MCC-T as nonessential motor control centers
(20) Screen 101794, CR-CNS-2016-05628, CA-001
(21) Screen 111827, High pressure core injection turbine overspeed functional test
(22) Screen 121884, Asea Brown Bovari breaker 145PMB40 BLK limit switch upgrade (1602)
(23) Screen 121895, Service water booster pump oil sight glasses and reservoir
(24) Screen 121898, T2 transformer sudden pressure and seal-in relay replacement
(25) Screen 121948, Replace high pressure core injection flow controller (analog to digital)
(26) Screen 121953, Main generator underfrequency relay replacement
(27) Screen 122011, Residual heat removal service water booster pump system
(28) Screen 122025, Emergency diesel generator indicating light isolation
(29) Screen 122038, Reclassify relays HV-REL-1CFX and HV-REL-1DFX to nonessential
(30) Screen 122067, Various motor operated valve packing load adjustment calculation revisions
(31) Screen 122093, High pressure core injection loss of coolant heat exchanger thermal performance and tube plugging margin
(32) Screen 122143, Residual heat removal and high pressure core injection net positive suction head margins for an anticipated transient without SCRAM event
(33) Screen 142229, Reactor equipment cooling heat exchanger allowable tube plugging increase

71111.18 - Plant Modifications

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

The inspectors evaluated the following temporary or permanent modifications:

(1) Hardened containment vent system installed in accordance with NRC Order EA-13-109 on August 29, 2019. [Completion of this permanent modification sample was in accordance with the guidance in Temporary Instruction 2515/193, with credit taken in Inspection Procedure 71111.18 - further details are documented in Inspection Report 05000298/2019012, ADAMS Accession No. ML19266A571.]

71111.19 - Post-Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Service water check valve 37 leakage post maintenance testing on July 23, 2019

(2) Reactor building outer railroad airlock door seal post maintenance testing on July 25, 2019
(3) Scram discharge volume check valve replacement on August 6, 2019
(4) Core spray B planned work window on August 16, 2019
(5) Southeast quad fan coil unit flow test following coil cleaning on September 5, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

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

(1) Emergency diesel generator 2 monthly operability test on July 15, 2019
(2) Control room emergency filtration system flow test on July 19, 2019

Inservice Testing (IP Section 03.01) (1 Sample)

(1) Reactor equipment cooling motor operated valve operability inservice test on July 31, 2019

FLEX Testing (IP Section 03.02) (1 Sample)

(1) Spent fuel pool secondary level instrument functional testing on August 7, 2019

**RADIATION SAFETY**

71124.05 - Radiation Monitoring Instrumentation

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

The inspectors evaluated radiation monitoring instrumentation during plant walkdowns.

(1) The inspectors reviewed the following:

Portable Survey Instruments

- RO-20 RP-11376
- AMS-4 RP-10762
- Model 3 RP-11438
- TelePole RP-11451
- REM 500 RP-11177
- Model 177 RP-11275
- H-809V RP-11469

Source Check Demonstration

- RO-20 RP-11419
- Model 3 RP-11438
- TelePole RP-11451

Area Radiation Monitors and Continuous Air Monitors

- CNS-0-RMA-RA-2
- CNS-0-RMA-RA-6
- CNS-0-RMA-RA-7
- CNS-0-RMA-RA-11
- CNS-0-RMA-RA-16
- CNS-0-RMA-RA-23
- CNS-0-RMA-RA-24

Personnel Contamination Monitors, Portal Monitors and Small Article Monitors

- PCM-2 RP-10571
- PM-12 RP-11178
- SAM-12 RP-11152

Calibration and Testing Program (IP Section 02.02) (1 Sample)

The inspectors evaluated the calibration and testing program implementation.

(1) The inspectors reviewed the following:

Alarm Setpoint and Calibration Method Check of Personnel Contamination Monitors, Portal Monitors and Small Article Monitors

- PM-12 RP-11178
- SAM-12 RP-11152

Failure to Meet Calibration or Source Check Acceptance Criteria

- None Available

71124.06 - Radioactive Gaseous and Liquid Effluent Treatment

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

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

(1)
- Liquid waste effluent system
- Elevated release point (ERP) system
- Radwaste ventilation
- Reactor building ventilation

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

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

(1)
- ERP

- Liquid radwaste
- Reactor building

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

The inspectors reviewed the following:

(1) Radioactive Effluent Sampling and Analysis Activities

- ERP
- Reactor building
- Radwaste
- Turbine building

Effluent Discharges

The licensee did not perform a continuous or batch liquid effluent discharge during the inspection for observation. The inspectors reviewed selected discharge permits and the licensee's procedures for performing liquid and gaseous effluent discharges.

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

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

(1) Air Cleaning System Surveillances

- Standby gas treatment
- Control room envelope filtration system [CREFS]

High-Range Effluent Monitoring Instrumentation Calibrations

- Reactor building
- Radwaste
- ERP

Dose Calculations (IP Section 02.05) (1 Sample)

The inspectors reviewed the following to asses public dose:

(1) Liquid and Gaseous Discharge Permits

The inspectors walked through the EFFECTS computer program, which documented the weekly continuous gaseous effluent discharge sample inputs, with a chemistry technician and the associated procedure for selected time periods during the inspection period. In addition, the inspectors reviewed the following liquid batch discharge releases:

- 18-15
- 18-33
- 18-42
- 19-10
- 19-13
- 19-43

Annual Radiological Effluent Release Reports

- 2017 Annual Radioactive Effluent Release Report
- 2018 Annual Radioactive Effluent Release Report

Abnormal Gaseous or Liquid Tank Discharges

The licensee did not have an abnormal gaseous or liquid tank release during the inspection period. The inspectors reviewed release logs and discharge permits for abnormal discharges. The inspectors verified an infrequent tank discharge was performed according to licensee procedures.

71124.07 - Radiological Environmental Monitoring Program

Site Inspection (IP Section 02.01) (1 Sample)

The inspectors evaluated the radiological environmental monitoring program implementation.

- Air sampling station No. 1
- Air sampling station No. 2
- Air sampling station No. 6 (aka solar station No. 1)
- Air sampling station No. 7
- Thermo-luminescent dosimeter (TLD) monitoring station No. 2
- TLD monitoring station No. 7
- TLD monitoring station No. 10

Environmental Sample Collections and Preparation Observation

1. Environmental samples: None were available for review and observation during this inspection. The inspectors visited a milk cow collection point and observed the licensee's delivery of a milk sampling container in preparation for the next milk

sampling. The inspectors observed the collection and replacement of air sample cartridges at the following stations:

- Air sampling station No. 1
- Air sampling station No. 2
- Air sampling station No. 6 (aka solar station No. 1)
- Air sampling station No. 7

Licensee Actions in Response to Missed Sample, Inoperable Sampler, Lost TLD or Anomalous Measurement

1. CR-CNS-2019-03895: Sampling at positions Nos. 28 and 35 were not available due to flooding July 19, 2019
2. CR-CNS-2019-03596: Suitable broadleaf vegetation unavailable due to flooding July 1, 2019
3. CR-CNS-2018-06283: Air samplers Stations 03, 05, and 08 were inaccessible due to excessive flooding October 10, 2018
4. CR-CNS-2018-08143: 100-meter A channel wind speed excessively high; repair/replace November 30, 2018
5. CR-CNS-2018-02820: 100-meter B channel temperature sensor erroneous/incorrect May 9, 2018

Groundwater Protection Initiative (GPI) Implementation (IP Section 02.02) (1 Sample)

Sampling Program for the Potential of Licensed Material Entering Groundwater

Groundwater Monitoring Well (GMW)

- CR-CNS-2019-01891, GMW-15 out of service due to excessive flooding, 03/26/19
- CR-CNS-2019-03553, GMW-12 out of service due to excessive flooding, 06/27/19
- CR-CNS-2019-00355, GMW-10 out of service due to excessive flooding, 06/27/19
- CR-CNS-2018-01877, GMW-06 & GMW out of service due to broken submersible pump, 03/29/19

For the 19 GMWs available for the inspection period, all wells measured less than 3,000 pCi/l H-3. The reporting level for H-3 in groundwater is 20,000 pCi/l.

- GMWs: 1D, 1S, 2, 3, 4D, 4S, 5, 6, 7D, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17

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

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

The inspectors evaluated radioactive material storage.

(1) The inspectors toured the following areas:

- Low Level Radioactive Waste (LLRW) Storage Pad
- Radioactive Materials Storage Building - Blue Building
- East Warehouse Radioactive Material Storage

- Dry Fuel Storage Pad - ISFSI Horizontal Storage Module (HSM) Pad
- Multipurpose Facility (MPF)
- Spent Fuel Pool Area

The inspectors performed a container check (e.g., swelling, leakage and deformation) on the following various containers:

- LSA Boxes in Blue Building
- 55 Gallon Drums
- Sealands with Dry Active Waste
- Used Oil Drums
- Wooden Boxes
- Radioactive Trash Bags

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

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

(1) Liquid or Solid Radioactive Waste Processing Systems

- Floor Drain Filter System
- Reactor Water Cleanup System
- Condensate Waste Storage System
- Low Level Radioactive Waste Processing

Radioactive Waste Resin and/or Sludge Discharges Processes

- NUPAC Resin Dewatering System

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

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

(1)
- RWCU - RWCU Resins, February 28, 2019
- CONDWST - WST RESIN/COND RESIN, March 4, 2019
- DAW - DRY ACTIVE WASTE, March 4, 2019
- SPENT - SPENT BEAD RESIN, March 4, 2019
- SCO - Surface Contaminated Equipment, March 4, 2019
- LAUNDRY - Contaminated Laundry, March 4, 2019
- DAW - Dry Active Waste, April 11, 2019

Shipment Preparation (IP Section 02.04) (1 Sample)

The inspectors evaluated and observed the following radioactive material shipment preparation processes:

(1)
- The inspectors were not able to evaluate and observe actual radioactive material shipment preparation processes as no shipments were in process. The inspectors observed loads of sampled soil being removed from the site which was appropriately surveyed and analyzed. The inspectors also reviewed several shipment packages that included surveys and assessments in preparation for shipment.

Shipping Records (IP Section 02.05) (1 Sample)

The inspectors evaluated the following nonexcepted package shipment records:

(1)
- 17-24, Type A, October 17, 2017
- 17-25, Type A, December 6, 2017
- 17-26, Type A, December 15, 2017
- 18-05, Type A, August 9, 2018
- 18-10, Type A, September 11, 2018
- 18-11, Type A, October 11, 2018
- 18-14, Type A, December 11, 2018
- 19-01, Type B, March 4, 2019
- 19-03, Type B, April 2, 2019

**OTHER ACTIVITIES – BASELINE**

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (1 Sample)

(1) July 1, 2018 - June 30, 2019

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

(1) October 1, 2018 - June 30, 2019

71152 - Problem Identification and Resolution

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

(1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in emergency preparedness drill classification that might be indicative of a more significant safety issue on August 2, 2019.

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (1 Sample)

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

(1) LER 05000298/2018-002-00, Lack of Procedural Guidance Results in Work Scheduling Error Causing Breach of Secondary Containment and Condition Prohibited by Technical Specifications (ADAMS Accession No. ML18353A278). The circumstances surrounding this LER and an associated non-cited violation are documented in the Inspection Results section of this report.

## INSPECTION RESULTS

| Failure to Implement Fire Protection Program Surveillance Requirements for a Fire Barrier Seal | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Mitigating Systems | Green<br>NCV 05000298/2019003-01<br>Open/Closed | [P.1] - Identification | 71111.05Q |

The inspectors identified a Green, non-cited violation of License Condition 2.C(4), "Fire Protection," for the failure to implement all provisions of the approved fire protection program. Specifically, prior to July 2, 2019, the licensee failed to implement Surveillance Procedure 6.FP.606, "Fire Barrier/Penetration Seal Visual Examination," Revision 25, for visual inspection of the cable expansion room west wall fire barrier and its associated MN 46 penetration to ensure that an unsealed penetration opening was identified. As a result, the licensee failed to identify that the conduit seal was degraded until it was discovered by the inspectors on July 2, 2019, and subsequently declared nonfunctional by operations personnel.

Description: On July 2, 2019, the inspectors toured the cable expansion room, a risk-significant area where safety-related cables from both divisions are routed. The inspectors observed that a 3-inch cable conduit ran about 8 feet from the west wall of the room and opened near one of the cable trays. The west wall of the cable expansion room was an FP1 Technical Requirements Manual (TRM)-required fire barrier. The open end of the conduit had four cables in it, and the inspectors noted that the conduit seal material was missing from about half of the conduit opening. The inspectors reported the degraded seal, labeled MN 46, to the control room. In response, operations and fire protection personnel walked down the seal. After review of applicable procedures and plant drawings, the licensee determined that the required intact smoke and hot gas seal could not be proven to exist. Because the deficiency represented an unsealed fire barrier penetration, operations personnel declared the FP1 fire barrier that the conduit penetrated nonfunctional under TRM 3.11.7 and implemented the required hourly fire watch.

The inspectors noted that the seal appeared to have been degrading for some period of time prior to discovery and the inspectors noted that the degraded seal should have been identified during inspections required by TRM 3.11.7, "Fire Barrier and Fire Wall Penetration Fire Seals," Technical Surveillance Requirement (TSR) 3.11.7.1. TSR 3.11.7.1 states, "visually inspect each side of each fire barrier and penetration fire seal (where possible)" on a 24-month frequency. The inspectors reviewed the results of the licensee's most recently performed TSR inspection, documented in Procedure 6.FP.606, "Fire Barrier/Penetration Seal Visual Examination," Revision 25, and performed on August 27, 2018. The inspectors noted

that Procedure 6.FP.606 directed plant personnel to inspect the adequacy of the fire barriers and penetration seals via plant drawings and a checklist of the walls in each room. Step 5.1 contained inspection for "all fire barriers" and required verification that there were "no unsealed openings" and "no unsealed penetrations." The inspectors also noted that Fire Protection Program Procedure 3.6.1, "Fire Barrier Control," Revision 21, stated that the internal sealing requirement for a conduit with a diameter of 2-4 inches is a "smoke and hot gas seal within 5 feet of barrier or nearest opening." In addition, Engineering Evaluation (EE) 10-055, "Conduit Internal Seals," Revision 0, which was credited in the licensee's NFPA 805 licensing basis contained industry testing data and stated, in part, that larger sized conduits, 3 inches diameter and over, allowed quantities of smoke to pass through the barrier and escape the conduits such that an exposure to sensitive equipment on the non-fire side of the barrier could be postulated. The smoke, if released on the non-fire side, could be expected to affect exposed equipment. The inspectors concluded that the seal contained in conduit MN 46 was a required penetration seal, and the lack of an intact seal should have been identified during performance of Procedure 6.FP.606.

After discussion with fire protection personnel, the inspectors noted that although Surveillance Procedure 6.FP.606 required identification of any unsealed openings and penetrations in fire barriers, the licensee failed to implement the procedure in a manner that ensured unsealed conduit penetrations like MN 46 would be identified. Specifically, although conduit MN 46 penetrated the wall and partially extended out into a room where it opened, plant personnel stated that they only inspected the external seal surrounding the outside of the conduit located at the wall and had not inspected the seal at the opening of the conduit. Fire protection personnel stated that they had determined that this seal was inaccessible and inspection at this location was not possible. After review of Procedure 6.FP.606, the inspectors concluded that the seal in question was accessible. Specifically, Procedure 6.FP.606 defines inaccessible as penetration seals or sections of fire barriers/fire walls that cannot be visually examined due to field configurations, and directs consideration of factors like hazardous material exposures, potential for plant trip or damage to safety equipment, and the need to remove permanent plant equipment to access the seal. The inspectors determined that MN 46 met none of the criteria listed in that it was located in an open area approximately 7 feet from the floor and was easily accessed via normal traversing paths. As a result, the inspectors determined that the licensee had failed to inspect the cable expansion room west wall fire barrier and its associated MN 46 penetration in accordance with TSR 3.11.7.1 and Procedure 6.FP.606.

Corrective Actions: Corrective actions included declaring the fire barrier nonfunctional, implementing TRM requirements for an hourly fire watch, and resealing the degraded penetration seal.

Corrective Action References: Condition Report CR-CNS-2019-03631

Performance Assessment:

Performance Deficiency: The licensee’s failure to implement fire protection program inspection requirements for an FP1 fire barrier was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Factors attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the performance deficiency resulted in a

nonfunctional fire barrier in the cable expansion room, which houses both Division 1 and Division 2 safety-related cabling.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Because the finding involved the ability to confine a fire, the inspectors applied Inspection Manual Chapter 0609, Appendix F, "Fire Protection SDP," to determine the finding's significance. The inspectors determined that there was an adequate automatic suppression system on either side of the fire confinement element, and therefore, they concluded that the performance deficiency was of very low safety significance (Green).

Cross-Cutting Aspect: P.1 - Identification: The organization implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program. Specifically, fire protection personnel failed to identify the need to inspect the conduit seal at the opening of fire barrier penetration MN 46 during fire barrier surveillance inspections and failed to identify that the seal was degraded during walkdowns.

Enforcement:

Violation: License Condition 2.C(4) requires, in part, that, "NPPD shall implement and maintain in effect all provisions of the approved fire protection program." TRM 3.11.7, "Fire Barrier and Fire Wall Penetration Fire Seals," TSR 3.11.7.1 states, visually inspect each side of each fire barrier and penetration fire seal (where possible) on a 24-month frequency. Surveillance Procedure 6.FP.606, "Fire Barrier/Penetration Seal Visual Examination," Revision 25, implements this TSR and Step 5.1 states, in part, for all fire barriers, verify no unsealed openings and no unsealed penetrations.

Contrary to the above, prior to July 2, 2019, the licensee failed to verify there were no unsealed openings and no unsealed penetrations for all fire barriers. Specifically, the licensee failed to implement Surveillance Procedure 6.FP.606 for visual inspection of the cable expansion room west wall fire barrier and its associated MN 46 penetration to ensure that an unsealed penetration opening was identified. As a result, the licensee failed to identify that the conduit seal was degraded and nonfunctional until it was discovered by the inspectors on July 2, 2019.

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

| Failure to Take Required Actions of Technical Specification 3.5.2 for Reactor Pressure Vessel Water Inventory Control During Secondary Containment Work | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Barrier Integrity | Green<br>NCV 05000298/2019003-02<br>Open/Closed | [H.5] - Work Management | 71153 |
| The inspectors documented a self-revealed, Green, non-cited violation of Technical Specification 3.5.2, "Reactor Pressure Vessel Water Inventory Control," for the licensee's failure to take technical specification required actions during a reactor pressure vessel water inventory control activity. Specifically, on October 10, 2018, during a planned water inventory control activity, the licensee failed to meet Technical Specification 3.5.2, Condition C, when | | | |

an unplanned and unrecognized breach of secondary containment occurred, and the licensee did not verify secondary containment could be closed as required until the breach was discovered several hours later. In particular, during residual heat removal service water piping work, the penetration of the same residual heat removal service water piping on both the control building and reactor building sides of the secondary containment boundary was not recognized, and as a result, a containment closure plan was not in place.

Description: During the licensee's refueling outage, on September 30, 2018, work orders for residual heat removal service water (RHRSW) piping, located in the control building, were added to an originally approved scope on the same line of RHRSW piping located in the reactor building. When the work was added to the original scope, the licensee did not plan for the repairs to be ongoing simultaneously and, therefore, did not identify the need for a contingency plan to be established for a breach of a secondary containment boundary. On October 10, 2018, Day 11 of the refueling outage, control rod drive mechanism (CRDM) maintenance was ongoing during the RHRSW piping repairs. The CRDM maintenance involved some leakage of reactor pressure vessel (RPV) water during the maintenance activity and was considered a planned water inventory control activity (WICA). Technical Specification (TS) 3.5.2, "Reactor Pressure Vessel Water Inventory Control," requires that the drain time of the RPV water inventory to the top of active fuel must be ≥ 36 hours. The licensee calculated the drain time to be 21.62 hours for the CRDM maintenance. As such, entry into TS Limiting Condition for Operation (LCO) 3.5.2, Condition C, was required. One of the requirements of TS 3.5.2, Condition C, is that the licensee must verify that each secondary containment penetration flow path will be capable of being isolated in less than the drain time within 4 hours of LCO entry. Upon entry into the LCO for the CRDM work, at 12:10 a.m. on October 10, 2018, the licensee took action to verify containment closure plans were in place for all secondary containment breaches that plant personnel were aware of.

Containment closure contingency planning is contained in the licensee's procedures. Administrative Procedure 0-CNS-OU-108, "Cooper Shutdown Safety Management Program," Revision 6, Section 6.17, contains containment defense in depth considerations that include, in part, maintaining containment closure capability during reduced water inventory operations. Within that section, Step 6.17.4 references Administrative Procedure 0.50.5, "Outage Shutdown Safety," Revision 40, for containment control requirements. Administrative Procedure 0.50.5 states, in part, that during Modes 4 and 5 when containment closure is required, simultaneously breaching both sides of a secondary containment piping penetration requires preplanned means to block off the breach.

On October 10, 2018, at 11:15 a.m., the licensee discovered that both the control building side and the reactor building side of the RHRSW piping were open simultaneously without a preplanned containment closure document (contingency plan) in place and failed to meet the technical specification LCO requirement that was entered for CRDM maintenance. This configuration existed for approximately 8 hours before the breach was secured. The licensee was able to re-establish the boundary in less than 1 hour from discovery and established a containment closure plan for the RHRSW piping work. Had the licensee recognized that the RHRSW piping work was ongoing in both the control building and the reactor building simultaneously during the RPV water inventory control activity, the containment closure plan would have contained these secondary containment penetrations and included them for the verification of flow path isolation capability within the 4-hour time requirement, and the TS violation would not have occurred. However, during the approximately 8 hours that the condition existed, the licensee was unaware of the breach until discovery at 11:15 a.m., and if containment closure was required during that time, sealing of this breach would not have occurred. This issue was identified through an event reported to the NRC as a condition

prohibited by TS in LER 05000298/2018-002-00, “Lack of Procedural Guidance Results in Work Scheduling Error Causing Breach of Secondary Containment and Condition Prohibited by Technical Specifications.” It was self-revealed in that workers in the vicinity were unable to weld due to the sustained high volume of air flow through the secondary containment breach.

Corrective Actions: The licensee immediately stopped work, re-established the secondary containment boundary within an hour, and established a contingency closure plan for the RHRSW piping repairs.

Corrective Action References: Condition Report CR-CNS-2018-06295

Performance Assessment:

Performance Deficiency: The licensee’s failure to take actions required by Technical Specification 3.5.2 for reactor pressure vessel water inventory control is a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Configuration Control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the licensee was unaware that there was ongoing work on RHRSW piping in both the control building and reactor building that breached secondary containment. These piping penetrations were not contained in a contingency closure plan and thus not verified to be capable of being isolated within the 4 hours required by TS LCO 3.5.2, Condition C, when performing a reactor pressure vessel water inventory control activity.

Significance: The inspectors assessed the significance of the finding using Appendix G, “Shutdown Safety SDP.” The inspectors determined that the performance deficiency degraded the ability to close or isolate the containment, and as a result, Appendix G, Attachment 1, Exhibit 4, directed entry into Inspection Manual Chapter 0609, Appendix H, “Containment Integrity Significance Determination Process.” The inspectors applied Appendix H, Section 07.02, “Approach for Assessing Type B Findings at Shutdown,” Step 2.1, to the finding. At the time of the event, the plant operating status (POS) was “POS 3,” which represents the Mode 5 shutdown condition when the RPV water level is ≥ the minimum level required for movement of irradiated fuel assemblies within the RPV. The inspectors determined that the finding was of very low safety significance (Green) because it: (1) did not occur in POS 1 or POS 2; (2) did not occur in TW-E (Early Time Window); and (3) it did not occur within 8 days of the start of the outage.

Cross-Cutting Aspect: H.5 - Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, the licensee failed to implement a process of planning, controlling, and executing work, resulting in a breach of secondary containment that was not recognized as a secondary containment penetration that needed to be verified to be capable of isolation by TS 3.5.2, Condition C, for the RPV water inventory control activity.

Enforcement:

Violation: Technical Specification (TS) 3.5.2, “RPV Water Inventory Control,” requires, in part, that in Modes 4 and 5, drain time of RPV water inventory to the top of active fuel (TAF) shall be ≥ 36 hours. The TS action statement requires that, “with Drain time < 36 hours and ≥ 8 hours, verify each secondary containment penetration flow path is capable of being isolated in less than the drain time within 4 hours or initiate action to restore drain time to ≥ 36 hours immediately.

Contrary to the above, on October 10, 2018, for approximately 8 hours, while in Mode 5, the licensee failed to ensure the drain time of RPV water inventory to the TAF was ≥ 36 hours or take the required actions. Specifically, with the drain time of < 36 hours and ≥ 8 hours, the licensee failed to verify each secondary containment penetration flow path was capable of being isolated in less than the drain time within 4 hours or initiate action to restore drain time to ≥ 36 hours immediately. In particular, improperly sequenced RHRSW work created an unplanned and unrecognized breach of secondary containment, which resulted in the licensee failing to identify the need to take the TS required actions.

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 August 22, 2019, the inspectors presented the Public Radiation Safety Cornerstone inspection results to Mr. J. Sullivan, General Manager Plant Operations, and other members of the licensee staff.

- On September 19, 2019, the inspectors presented the Evaluations of Changes, Tests, and Experiments inspection results to Mr. J. Sullivan, General Manager of Plant Operations, and other members of the licensee staff.

- On October 17, 2019, the inspectors presented the integrated inspection results to Mr. J. Sullivan, General Manager Plant Operations, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.04Q | Drawings | 2006, Sheet 4 | Flow Diagram Control Building Service Water System | 61 |
| 71111.04Q | Drawings | 2036, Sheet 1 | Flow Diagram Reactor Building Service Water System | A6 |
| 71111.04Q | Drawings | 2043 | Flow Diagram Reactor Core Isolation Coolant and Reactor Feed Systems | 57 |
| 71111.04Q | Drawings | 2045, Sheet 1 | Flow Diagram Core Spray System | N58 |
| 71111.04Q | Procedures | 2.2.67 | Reactor Core Isolation Cooling System | 80 |
| 71111.04Q | Procedures | 2.2.67.1 | Reactor Core Isolation Cooling System Operations | 45 |
| 71111.04Q | Procedures | 2.2.67A | Reactor Core Isolation Cooling System Component Checklist | 23 |
| 71111.04Q | Procedures | 2.2.67B | Reactor Core Isolation Cooling System Instrument Valve Checklist | 3 |
| 71111.04Q | Procedures | 2.2.74A | Standby Liquid Control System Component Checklist | 11 |
| 71111.04Q | Procedures | 2.2.74B | Standby Liquid Control System Instrument Valve Checklist | 1 |
| 71111.04Q | Procedures | 2.2.9 | Core Spray System | 85 |
| 71111.04Q | Procedures | 2.2A.CS.DIV2 | Core Spray Component Checklist (DIV 2) | 3 |
| 71111.04Q | Procedures | 2.2A.RHRSW.DIV1 | RHR Service Water Booster Pump System Component Checklist | 10 |
| 71111.04Q | Procedures | 2.2B.CS.DIV2 | Core Spray System Instrument Valve Checklist (DIV 2) | 0 |
| 71111.04Q | Procedures | 2.2B.RHRSW.DIV1 | RHR Service Water Booster Pump System Instrument Valve Checklist | 0 |
| 71111.04Q | Work Orders | WO | 5211509 | |
| 71111.05Q | Corrective Action Documents | CR-CNS- | 2019-03631 | |
| 71111.05Q | Engineering Evaluations | EE 10-055 | Conduit Internal Seals | 0 |
| 71111.05Q | Fire Plans | CNS-FP-136 | Fire Area Boundary Drawing | 6 |
| 71111.05Q | Fire Plans | CNS-FP-212 | Reactor SE Quad, Elevations 881 and 859 | 0 |
| 71111.05Q | Fire Plans | CNS-FP-285 | Fire Barrier Penetration Seal Details | 7 |
| 71111.05Q | Miscellaneous | CNS-FP-234 | Office Building Cable Expansion Room Elevation 918’ 6” | 4 |
| 71111.05Q | Miscellaneous | CNS-FP-39 | Reactor Building Suppression Pool Elevation 859’-9” | 0 |
| 71111.05Q | Miscellaneous | NEDC 10-080 | Fundamental Fire Protection Program and Design Elements Review | 4 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
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| 71111.05Q | Procedures | 0-BARRIER-MAPS | Barrier Maps | 9 |
| 71111.05Q | Procedures | 0-BARRIER-MAPS | Barrier Maps | 10 |
| 71111.05Q | Procedures | 0-BARRIER-REACTOR | | 14 |
| 71111.05Q | Procedures | 0.7.1 | Control of Combustibles | 40 |
| 71111.05Q | Procedures | 3.6.1 | Fire Barrier Control | 21 |
| 71111.05Q | Procedures | 6.FP.606 | Fire Barrier/Penetration Seal Visual Examination | 25 |
| 71111.06 | Corrective Action Documents | CR-CNS- | 2017-00229, 2019-02931, 2019-04268, 2019-05066, 2019-05271, 2019-05283 | |
| 71111.06 | Procedures | 0-BARRIER | Barrier Control Process | 29 |
| 71111.06 | Procedures | 0-BARRIER-REACTOR | | 14 |
| 71111.11Q | Miscellaneous | RMP 31-013 | Quarterly Downpower, 10-EN-RE-215/6CO, Att 2 | 0 |
| 71111.11Q | Procedures | 10.13 | Control Rod Sequence and Movement Control | 75 |
| 71111.11Q | Procedures | 10.9 | Control Rod Scram Time Evaluation | 71 |
| 71111.11Q | Procedures | 2.0.3 | Conduct of Operations | 102 |
| 71111.12 | Corrective Action Documents | CR-CNS- | 2018-07835, 2019-02127, 2019-02581, 2019-03265, 2019-03488, 2019-03501, 2019-03934, 2019-03936, 2019-04317, 2019-04336, 2017-04701 | |
| 71111.12 | Engineering Evaluations | EE-PF02F | Maintenance Rule Function EE-PF02F Performance Criteria Basis | 4 |
| 71111.12 | Miscellaneous | | Maintenance Rule (a)(1) Evaluation RCIC-PF01 – RCIC System | 0, 1 |
| 71111.12 | Miscellaneous | 8001553-1 | Turbine Control Schematic | 1 |
| 71111.12 | Miscellaneous | RCIC-PF01 | Maintenance Rule Function RCIC-PF01 Performance Criteria Basis | 6 |
| 71111.12 | Procedures | 3-EN-DC-206 | Maintenance Rule (a)(1) Process | 3C3 |
| 71111.12 | Procedures | 6.2HV.601 | Air Flow Test of Fan Coil Unit FC-R-1E (DIV 2) | 7 |
| 71111.12 | Work Orders | WO | 5312924 | |
| 71111.13 | Corrective Action Documents | CR-CNS- | 2019-03936, 2019-03947, 2019-03964, 2019-04218, 2019-04347 | |
| 71111.13 | Drawings | | 18’-900# Gate Valve – R.S.-Press Seal Cast STL WCB – Stellite Trim – B.W. Ends SMB-2 (60#) Motor Operator | 760-3 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.13 | Miscellaneous | | Critical Evolutions Meeting Presentation – RF-MOV-29MV Reactor Feed Pump 'A' Discharge Valve, Packing Gland Leak Injection | |
| 71111.13 | Miscellaneous | | Risk Management Plan - RF-MOV-29MV Reactor Feed Pump A Discharge Valve, Packing Gland Leak Injection | |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – ESST Planned Work Window | 08/21/2019 |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – SLC A LCO | 07/08/2019 |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – Core Spray B 1933 Maintenance Window | 08/13/2019 |
| 71111.13 | Miscellaneous | | Protected Equipment Tracking Form – RCIC inoperable | 07/24/2019 |
| 71111.13 | Miscellaneous | 5284609-03 | Work Plan, RF-MOV-29MV | |
| 71111.13 | Miscellaneous | 5284609-05 | Work Plan, RF-MOV-29MV | |
| 71111.13 | Procedures | 0-CNS-WM-104 | Online Schedule Risk Assessment | 9 |
| 71111.13 | Procedures | 0-CNS-WM-104 | Attachment 1, Risk Characterization, for WO 5284609-5 | |
| 71111.13 | Procedures | 0-PROTECT-EQP | Protected Equipment Program | 46 |
| 71111.13 | Work Orders | WO | 5201509, 5209480, 5211242, 5211244, 5211377, 5211509, 5284609-Rev. 3, 5284609-Rev. 5, 5309711 | |
| 71111.15 | Corrective Action Documents | CR-CNS- | 2017-04701, 2019-02127, 2019-03189, 2019-03478, 2019-03860, 2019-03889, 2019-03934, 2019-03936, 2019-04317, 2019-04336 | |
| 71111.15 | Drawings | 2040, Sheet 2 | Flow Diagram – Residual Heat Removal Sys Loop "B" | 20 |
| 71111.15 | Engineering Evaluations | EE 10-073 | Deletion of Type C Testing of One Barrier due to Closed Loop Analysis for 9 Pens | 0 |
| 71111.15 | Miscellaneous | | CNS Original Custom Technical Specifications | |
| 71111.15 | Miscellaneous | LO 2019-0045 | Part 21 Issue | 06/07/2019 |
| 71111.15 | Miscellaneous | USQE-1999 | Combine Table V-2-7 and Table VII-3-1 | 0 |
| 71111.15 | Procedures | 6.2HV.601 | Air Flow Test of Fan Coil Unit FC-R-1E (DIV 2) | 7 |
| 71111.15 | Procedures | 6.2SW.401 | Diesel Generator Service Water Check Valve and Sump Test (IST) (DIV 2) | 3 |
| 71111.15 | Work Orders | WO | 5166780, 5196337, 5312924 | |
| 71111.17T | Calculations | NEDC 92-064 | Transient Temperature Rise in SWBP Room After Loss of Cooling | 3 |
| 71111.17T | Calculations | NEDC 94-034B | CNS Containment System Response for NPSH Analysis | 2 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.17T | Calculations | NEDC 97-044A | NPSH Margins for the RHR and CS Pumps | 4 |
| 71111.17T | Calculations | NEDC 97-044D | RHR and HPCI NPSH Margins for ATWS Event | 2 |
| 71111.17T | Corrective Action Documents | CR-CNS- | 2019-02345, 2019-02364, 2019-03587, 2019-03790, 2019-03880, 2019-04668 | |
| 71111.17T | Corrective Action Documents Resulting from Inspection | CR-CNS- | 2019-04959 | |
| 71111.17T | Drawings | CNS-EE-319 | SSST OPP Cabinets #1 and #2 Connection Diagram | 01 |
| 71111.17T | Drawings | 3001 | Main One Line Diagram | 30 |
| 71111.17T | Drawings | 3006, Sh. 5 | Auxiliary One Line Diagram MCC Z, SWGR Bus 1A, 1B, 1E, & Critical SWGR Bus 1F 1G | 37 |
| 71111.17T | Drawings | 3006, Sh. 5 | Auxiliary One Line Diagram Starter Racks LZ and TZ MCC's K, L, LX, RA, RX, S, T, TX, X | 90 |
| 71111.17T | Drawings | 3017, Sh. 1 | 4160V Switchgear Elementary Diagrams | 26 |
| 71111.17T | Drawings | 3020, Sh. 4 | 4160V Switchgear Elementary Diagrams | 27 |
| 71111.17T | Drawings | 3031, Sh. 3 | Control Elementary Diagrams Switch Developments | 31 |
| 71111.17T | Drawings | 3040, Sh. 9 | Control Elementary Diagram | 40 |
| 71111.17T | Drawings | 3253, Sh. DT4 | 460V Motor Control Centers Wiring Details, Connection Wiring Diagram | 21 |
| 71111.17T | Drawings | 3700, Sh. 19 | Annunciator Elementary Ladder Diagram | N09 |
| 71111.17T | Drawings | 791E271, Sh. 6 | HPCI System Elementary Diagram | 21 |
| 71111.17T | Drawings | CNS-EE-320 | ESST OPP Cabinets #1 and #2 Connection Diagram | 01 |
| 71111.17T | Drawings | IL-E-70-3, Sh. 107B | Area Temp. Monitoring System for Nuclear Boiler Systems Leak Detection | 7 |
| 71111.17T | Drawings | IL-E-70-3, Sh. 107BB | Area Temperature Monitoring System for Nuclear Boiler Systems Leak Detection | 1 |
| 71111.17T | Drawings | NC 02161 | One-line Switching Diagram 345KV/161KV/4160V | 34 |
| 71111.17T | Drawings | NC 43456 | Cooper 161kV Substation One-line Switching Diagram | 13 |
| 71111.17T | Drawings | NC 66688 | Cooper 345kV Substation One-line Switching Diagram | 24 |
| 71111.17T | Drawings | OPP-ELE-B101, Pg. 1 of 18 | Open Phase Detection and Protection System | 01 |
| 71111.17T | Drawings | OPP-ELE-B101, Pg. 2 of 18 | Open Phase Detection and Protection System | 01 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.17T | Drawings | OPP-ELE-B101, Sh. 3 of 18 | Open Phase Detection and Protection System | 01 |
| 71111.17T | Drawings | OPP-ELE-B101, Sh. 4 of 18 | Open Phase Detection and Protection System | 01 |
| 71111.17T | Drawings | OPP-ELE-B101, Sh. 5 | Open Phase Detection and Protection System | 01 |
| 71111.17T | Drawings | OPP-ELE-B101, Sh. 6 | Open Phase Detection and Protection System | 01 |
| 71111.17T | Drawings | OPP-ELE-B101, Sh. 7 | Open Phase Detection and Protection System | 01 |
| 71111.17T | Drawings | OPP-ELE-B101, Sh. 8 of 18 | Open Phase Detection and Protection System | 01 |
| 71111.17T | Drawings | SKE-EC-6016502-3 | HPCI Flow Control Wiring Diagram | 5 |
| 71111.17T | Engineering Changes | DEC 5243039 | Emergency Diesel Generator Indicating Light Isolation | 0 |
| 71111.17T | Engineering Changes | EC 6016502 | HPCI Flow Control | 0 |
| 71111.17T | Engineering Changes | EC 60387820 | Main Generator Under Frequency Relay Replacement | 0 |
| 71111.17T | Engineering Changes | EC 6040480 | SWBP Oil Sight Glasses and Reservoir | 0 |
| 71111.17T | Engineering Evaluations | EE 16-021 | Engineering Evaluation for 161KV Low Voltage Limit | 0 |
| 71111.17T | Engineering Evaluations | EE 16-048 | Engineering Evaluation MCC-L and MCC-T to Non-Essential | 0 |
| 71111.17T | Engineering Evaluations | EE 18-012 | Re-Evaluation of Torus Inspection Frequency During Period of Extended Operation | 0 |
| 71111.17T | Engineering Evaluations | EE 18-028 | Various MOV Packing Load Adjustment Calculation Revisions | 0 |
| 71111.17T | Engineering Evaluations | EE 18-045 | HPCI LOC HX Thermal Performance and Tube Plugging Margin | 0 |
| 71111.17T | Engineering Evaluations | EE 18-046 | RHR and HPCI NPSH Margins for ATWS Event | 0 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.17T | Engineering Evaluations | EE 19-018 | REC HX Allowable Tube Plugging Increase | 0 |
| 71111.17T | Engineering Evaluations | EE-18-021 | Engineering Evaluation for Reclassifying Relays HV-REL-1CFX and HV-REL-1DFX to Non-Essential | 15C11 |
| 71111.17T | Engineering Evaluations | MDE-270-1285 | Evaluation of ATWS Performance at Cooper Nuclear Station | December 1985 |
| 71111.17T | Miscellaneous | CDA-EE-001-C1 | Control Group Assessment - Open Phase Protection System Controller (CRIO-9068) | 1 |
| 71111.17T | Miscellaneous | CDA-EE-001-ES | Control Group Assessment - Open Phase Protection System Injection Source | 0 |
| 71111.17T | Miscellaneous | CDA-EE-001-ES1 | Control Group Assessment - Open Phase Protection System DC Power Supply | 0 |
| 71111.17T | Miscellaneous | CDA-EE-001-KP | Control Group Assessment - Open Phase Protection System Keypad | 0 |
| 71111.17T | Miscellaneous | CDA-EE-001-R | Control Group Assessment - Open Phase Protection System Recorder | 0 |
| 71111.17T | Miscellaneous | CDA-EE-001-REL | Control Group Assessment - Open Phase Protection System Current Switch | 0 |
| 71111.17T | Miscellaneous | CDA-EE-001-UPS | Control Group Assessment - Open Phase Protection System UPS | 0 |
| 71111.17T | Miscellaneous | CDA-EE-0013 | Functional Description and Consequence Analysis | 3 |
| 71111.17T | Miscellaneous | IEGR-MN-699 | Vendor Manual Open Phase Protection (OPP) System Operating and Maintenance Manual | 1.03 |
| 71111.17T | Miscellaneous | NLS2018053 | l0 CFR 50.59(dX2) and 10 CFR 72.48(dX2) Summary Report Cooper Nuclear Station, Docket No. 50-298, License No. DPR-46 | 10/08/2018 |
| 71111.17T | Miscellaneous | RCE 2017-07513 | Both EDGs Declared Inoperable Due to Test Failure of Spare Indicating Light | 1 |
| 71111.17T | Procedures | 0-CNS-LI-100 | Process Applicability Determination | 26 |
| 71111.17T | Procedures | 0-CNS-LI-101 | 10 CFR 50.59 Evaluations | 19 |
| 71111.17T | Procedures | 0-CNS-LI-112 | 10 CFR 72.48 Evaluations | 13 |
| 71111.17T | Procedures | 0-EN-HU-106 | Procedure and Work Instruction Use and Adherence | 3C2 |
| 71111.17T | Procedures | 2.0.1.3 | Time Critical Operator Action Control and Maintenance | 7 |
| 71111.17T | Procedures | 2.1.11.1 | Turbine Building Data | 178 |

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|---|---|---|---|---|
| 71111.17T | Procedures | 2.2.70 | RHR Service Water Booster Pump System | 90 |
| 71111.17T | Procedures | 2.3_R-1 | Alarm Procedure for Panel R – Annunciator R-1 | 19 |
| 71111.17T | Procedures | 2.4HVAC | Computer Room Ventilation Failure/Temperature High | 24 |
| 71111.17T | Procedures | 3-ED-DC-167 | Classification of Structure, Systems, and Component | 4C2 |
| 71111.17T | Procedures | 3-EN-DC-115 | Engineering Change Process | 15C14 |
| 71111.17T | Procedures | 6.1EE.302 | 4160V Bus 1F Undervoltage Relay and Relay Timer Functional Test (DIV 1) | 45 |
| 71111.17T | Procedures | 6.1EE.306 | 4160V Bus 1F Undervoltage Relay Channel Functional Test (DIV 1) | 04 |
| 71111.17T | Procedures | 7.2.14 | RHR SWBP Overhaul and Replacement | 45 |
| 71111.17T | Procedures | 7.3.41 | Examination, Repair, High Pot Testing of Non-Segregated Buses and Associated Equipment | 16 |
| 71111.17T | Procedures | IP-ENG-001 | Standard Design Process | 0C0 |
| 71111.17T | Self-Assessments | 2019-0098 | 50.59 Pre-Inspection Focused Self-Assessment | 1 |
| 71111.17T | Self-Assessments | QAD 2018-008 | QA Audit 18-02, "Engineering" | 03/27/2018 |
| 71111.19 | Corrective Action Documents | CR-CNS- | 2017-04701, 2019-03889, 2019-04141, 2019-04142, 2019-04209, 2019-04222, 2019-04317, 2019-04336 | |
| 71111.19 | Miscellaneous | | SW-CV-37 Leakage Troubleshooting Plan | 0 |
| 71111.19 | Miscellaneous | 11628207 | Notification | |
| 71111.19 | Procedures | 2.2.8 | Control Rod Drive System | 106 |
| 71111.19 | Procedures | 6.2CS.101 | Core Spray Test Mode Surveillance Operation (IST) (DIV 2) | 32 |
| 71111.19 | Procedures | 6.2CS.201 | CS Motor Operated Valve Operability Test (IST) (DIV 2) | 22 |
| 71111.19 | Procedures | 6.2HV.601 | Air Flow Test of Fan Coil Unit FC-R-1E (DIV 2) | 7 |
| 71111.19 | Procedures | 6.2SW.401 | Diesel Generator Service Water Check Valve and Sump Test (IST) (DIV 2) | 3 |
| 71111.19 | Procedures | 6.CRD.201 | North and South SDV Vent and Drain Valve Cycling, Open Verification, and Timing Test | 27 |
| 71111.19 | Procedures | 6.SC.501 | Secondary Containment Leak Test | 28 |
| 71111.19 | Procedures | 6.SC.502 | Secondary Containment Penetration Examination | 19 |
| 71111.19 | Procedures | 7.0.10 | Railroad Airlock Door Operations | 26 |
| 71111.19 | Procedures | 7.0.5 | Post-Maintenance Testing | 59 |
| 71111.19 | Work Orders | WO | 5201509, 5209480, 5210423, 5211242, 5211244, 5211377, 5265105, 5309143, 5312924 | |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.22 | Corrective Action Documents | CR-CNS- | 2019-23824 | |
| 71111.22 | Miscellaneous | 2174 | Vendor Manual – Mohr SFP-1 Level Prove Assembly Technical Manual | 02/13/2015 |
| 71111.22 | Procedures | 14.41.1.2 | FPC-LIT-2 Testing | 4 |
| 71111.22 | Procedures | 2.2.32 | Fuel Pool Cooling and Demineralizer System | 105 |
| 71111.22 | Procedures | 2.2.84 | HVAC Main Control Room and Cable Spreading Room | 59 |
| 71111.22 | Procedures | 6.2DG.101 | Diesel Generator 31 Day Operability Test (IST) (DIV 2) | 86 |
| 71111.22 | Procedures | 6.HV.105 | Control Room Envelope Pressurization and CREFS Flow Test | 20 |
| 71111.22 | Procedures | 6.REC.201 | REC Motor Operated Valve Operability Test (IST) | 31 |
| 71111.22 | Work Orders | WO | 5195163, 5234083 | |
| 71114.06 | Miscellaneous | | Drill Scenario Guide | 07/30/2019 |
| 71124.05 | Calibration Records | 5149599 | Area Radiation Monitors Calibration and Functional Test | 09/20/2018 |
| 71124.05 | Calibration Records | 5156820 | SW Radiation Monitor - B Calibration Check and Instrument Channel Test – RMP-RM-332B | 05/16/2018 |
| 71124.05 | Calibration Records | 5166729 | High Range Containment Monitor Victoreen Model 875 Source Calibration Check | 10/03/2018 |
| 71124.05 | Calibration Records | 5166732 | Containment High Range Monitors A/R/H Determination | 10/03/2018 |
| 71124.05 | Calibration Records | 5166734 | Main Steam Line Process Radiation Monitor Channel Calibration, Source Test, and Setpoint Determination RMP-RM-251A/B/C/D Data Sheets | 10/04/2018 |
| 71124.05 | Calibration Records | 5167782 | Containment High Range Area Monitor Channel Calibration RMA-RM-40 A/B | 08/29/2018 |
| 71124.05 | Calibration Records | 5167787 | Main Steam Line Process Radiation Monitor Channel Calibration, Source Test, and Setpoint Determination RMP-RM-251A/B/C/D Data Sheets | 09/11/2018 |
| 71124.05 | Calibration Records | 5186806 | REC Radiation Monitor Calibration Check and Instrument Channel Test | 05/01/2019 |
| 71124.05 | Calibration Records | Detector 1 | 2 Inch Particulate Filter at 5 cm | 05/03/2017 |
| 71124.05 | Calibration | Detector 1 | 2000 ml Marinelli with 1.5 Density | 05/17/2017 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | Records | | | |
| 71124.05 | Calibration Records | Detector 1 | 500 cc Charcoal Marinelli | 10/05/2018 |
| 71124.05 | Calibration Records | Detector 1 | Charcoal Cartridge at 5 cm | 05/05/2017 |
| 71124.05 | Calibration Records | DG11095729 | Tri-Carb 2910TR Efficiency Calibration | 02/28/2019 |
| 71124.05 | Calibration Records | RP-10571 | Instrument Calibration Sheet (PCM-2) S/N 401 | 07/03/2019 |
| 71124.05 | Calibration Records | RP-10588 | RMV-CAM-20 Particulate & Iodine Calibration Sheets | 03/27/2019 |
| 71124.05 | Calibration Records | RP-10765/11497 | Instrument Calibration Data Sheet – AMS-4 | 01/19/2019 |
| 71124.05 | Calibration Records | RP-10848 | XLB Calibration Data Sheet – Unit 1 | 01/23/2019 |
| 71124.05 | Calibration Records | RP-11152 | Instrument Calibration Sheet Thermo Eberline SAM Contamination Monitor | 05/22/2019 |
| 71124.05 | Calibration Records | RP-11178 | PM-12 Calibration Data Sheet S/N 0902PM1207 | 06/11/2018 |
| 71124.05 | Calibration Records | RP-11241 | Instrument Calibration Data Sheet – DRM-1 or DRM-2 | 06/25/2019 |
| 71124.05 | Calibration Records | RP-11376 | Instrument Calibration Data Sheet – RO-20 | 02/14/2019 |
| 71124.05 | Calibration Records | RP-11724 | Instrument Calibration Data Sheet – H-809V1 | 06/10/2019 |
| 71124.05 | Corrective Action Documents | CR-CNS- | 2017-06407, 2017-06689, 2018-03723, 2018-05687, 2018-06543, 2018-08139, 2019-00818, 2019-00866, 2019-00880, 2019-01310, 2019-01442, 2019-02130, 2019-02362, 2019-02669 | |
| 71124.05 | Miscellaneous | | PCM-2 Weekly Source Checks | 08/18/2019 |
| 71124.05 | Miscellaneous | | PM-7/PM-12 Daily/Weekly Source Checks | 08/20/2019 |
| 71124.05 | Miscellaneous | | SAM-11 / SAM-12 Weekly Functional Checks | 08/18/2019 |
| 71124.05 | Miscellaneous | | CNS System Health Report - RM | 06/2019 |
| 71124.05 | Miscellaneous | | Results of Radiochemistry Cross Check Program (Quarterly | 12/13/2017 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | | Results) | through 06/05/2019 |
| 71124.05 | Miscellaneous | 878-10 | Source Calibration Certificate (S/N 135) | 06/26/2003 |
| 71124.05 | Miscellaneous | 878-10A | Source Calibration Certificate (S/N 126) | 09/24/2003 |
| 71124.05 | Miscellaneous | 878-10B | Source Calibration Certificate (S/N 121) | 09/18/2003 |
| 71124.05 | Procedures | 15.ARM.302 | Area Radiation Monitors Calibration and Functional Test | 19 |
| 71124.05 | Procedures | 6.PRM.322 | Containment High Range Area Monitor Channel Calibration | 21 |
| 71124.05 | Procedures | 6.PRM.323 | High Range Containment Monitor Victoreen Model 875 Source Calibration Check | 9 |
| 71124.05 | Procedures | 6.PRM.324 | Main Steam Line Process Radiation Monitor Channel Calibration, Source Test and Setpoint Determination | 29 |
| 71124.05 | Procedures | 6.PRM.326 | Drywell Air Sampling System Known Source Calibration and Functional Test | 17 |
| 71124.05 | Procedures | 6.PRM.329 | Containment High Range Monitors A/R/H Determination | 5 |
| 71124.05 | Procedures | 6.PRM.331 | SW Radiation Monitor A Calibration Check and Instrument Channel Test | 15 |
| 71124.05 | Procedures | 8-CNS-CY-102 | Laboratory Analytical Quality Control | 2 |
| 71124.05 | Procedures | 8-CNS-CY-110 | Canberra APEX Gamma Spectroscopy System Operation | 2 |
| 71124.05 | Procedures | 8.5.2.4 | Tri-Carb 2910TR Liquid Scintillation System | 2 |
| 71124.05 | Procedures | 9.INST.15 | Rem 500 Neutron Survey Meter | 1 |
| 71124.05 | Procedures | 9.INST.53 | Ion Chamber Survey Instrument Eberline Model RO-20 | 7 |
| 71124.05 | Procedures | 9.INST.57 | Friskers | 6 |
| 71124.05 | Procedures | 9.INST.64 | Thermo Electron Corporation Small Articles Monitor (SAM) | 4 |
| 71124.05 | Procedures | 9.INST.68 | WR Telepole GM Survey Instrument | 4 |
| 71124.05 | Self-Assessments | LO 2018-0186-04 | Radiological Monitoring Instrumentation and Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transport | 05/17/2019 |
| 71124.05 | Self-Assessments | QAD 2018-019 | QA Audit 18-05, "Radiological Controls" | 08/23/2018 |
| 71124.06 | Corrective Action Documents | CR-CNS- | 2017-04647, 2017-05654, 2017-05888, 2017-06574, 2018-00199, 2018-02613, 2018-03046, 2018-03588, 2018-04125, 2018-04354, 2018-04569, 2018-04936, 2018-05167, 2018-07906, 2018-07922, 2019-01916, 2019-02850, 2019-02904, 2019-03082, 2019-03460, 2019-03497, 2019-03946 | |
| 71124.06 | Miscellaneous | | Teledyne Brown Engineering Environmental Services | 07/20/2019 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | | Laboratory Quality Control Program: 2nd Quarter 2019 Quality Assurance Report | |
| 71124.06 | Miscellaneous | | Teledyne Brown Engineering Environmental Services Laboratory Quality Control Program: 4th Quarter 2018 Quality Assurance Report | 02/04/2019 |
| 71124.06 | Miscellaneous | 20-AUG-19-210006 | Gama Spectrum Analysis: ERP Particulate | 08/20/2019 |
| 71124.06 | Miscellaneous | Liquid Radioactive Waste Discharge Form | Liquid Radioactive Waste Discharge Form: Floor Drain Sample Tank (FDST) | 08/17/2018 |
| 71124.06 | Miscellaneous | Liquid Radioactive Waste Discharge Form | Liquid Radioactive Waste Discharge Form: Floor Drain Sample Tank (FDST) | 11/17/2018 |
| 71124.06 | Miscellaneous | Liquid Radioactive Waste Discharge Form | Liquid Radioactive Waste Discharge Form: Floor Drain Sample Tank (FDST) | 12/31/2018 |
| 71124.06 | Miscellaneous | Liquid Radioactive Waste Discharge Form | Liquid Radioactive Waste Discharge Form: Floor Drain Sample Tank (FDST) | 03/27/2019 |
| 71124.06 | Miscellaneous | Liquid Radioactive Waste Discharge Form | Liquid Radioactive Waste Discharge Form: Floor Drain Sample Tank (FDST) | 04/02/2019 |
| 71124.06 | Miscellaneous | Liquid Radioactive Waste Discharge Form | Liquid Radioactive Waste Discharge Form: Floor Drain Sample Tank (FDST) | 05/25/2019 |
| 71124.06 | Miscellaneous | Liquid Radioactive Waste Discharge Form | Liquid Radioactive Waste Discharge Form: Floor Drain Sample Tank (FDST) | 07/03/2019 |
| 71124.06 | Miscellaneous | LO-2018-0186-008 | Liquid and Gaseous Effluents Focused Self-Assessment Report | 06/05/2019 |
| 71124.06 | Miscellaneous | NUPIC Audit 24791 | NUPIC Audit/Survey: Teledyne Brown Engineering-Environmental Services | 05/09/2019 |
| 71124.06 | Miscellaneous | NUPIC Audit: 24391 | NUPIC Audit/Survey: NCS Corporation | 03/30/2017 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71124.06 | Miscellaneous | ODAM | Cooper Nuclear Station Offsite Dose Assessment Manual for Gaseous and Liquid Effluents | 10/03/2018 |
| 71124.06 | Miscellaneous | ODAM | 2018 Annual Land Use Census | 07/16/2018 |
| 71124.06 | Miscellaneous | QAD 2017-0031 | Quality Assurance (QA) Audit 17-07: "Chemistry and Radiological Effluent and Environmental Monitoring Program" | 10/11/2017 |
| 71124.06 | Procedures | 6.1SGT.501 | SGT A Carbon Sample, Carbon Absorber and HEPA Filter In-Place Leak Test, and Components Leak Test (DIV 1) | 18 |
| 71124.06 | Procedures | 6.2SGT.501 | SGT B Carbon Sample, Carbon Absorber and HEPA Filter In-Place Leak Test, and Components Leak Test (DIV 2) | 20 |
| 71124.06 | Procedures | 6.HV.104 | Control Room Emergency Filter System Flow Test, Charcoal and HEPA Filter Leak Test, Filter DP Test, and Charcoal Sample Analysis | 19 |
| 71124.06 | Procedures | 6.PRM.306 | Liquid Radwaste Effluent Flow Monitor Channel Calibration | 8 |
| 71124.06 | Procedures | 6.PRM.308 | Liquid Radwaste Effluent System Channel Calibration | 15 |
| 71124.06 | Procedures | 6.PRM.310 | ERP Kaman Monitor Channel Calibration | 28 |
| 71124.06 | Procedures | 6.PRM.313 | Reactor Building Kaman Monitor Channel Calibration | 18 |
| 71124.06 | Procedures | 6.PRM.320 | Radwaste Building Kaman Monitor Channel Calibration | 28 |
| 71124.06 | Procedures | 6.PRM.328 | Kaman Sample Flow System Channel Calibration | 13 |
| 71124.06 | Procedures | 8-CNS-CY-102 | Laboratory Analytical Quality Control | 2 |
| 71124.06 | Procedures | 8.11.1 | EFFECTS Program | 21 |
| 71124.06 | Procedures | 8.8.1.19 | Effluent Composite Sample Preparation and Analysis | 0 |
| 71124.06 | Procedures | 8.8.11 | Liquid Radioactive Waste Discharge Authorization | 34 |
| 71124.06 | Procedures | 8.8.ERP | Particulate and Iodine Sample Collection for ERP Effluent | 18 |
| 71124.06 | Procedures | 8.8.RW | Particulate and Iodine Sample Collection for Radwaste Building Effluent | 13 |
| 71124.06 | Procedures | 8.8.RX | Particulate and Iodine Sample Collection for Reactor Building Effluent | 16 |
| 71124.06 | Procedures | 8.8.TB | Particulate and Iodine Sample Collection for Turbine Building Effluent | 13 |
| 71124.06 | Work Orders | WO | 5028538, 5034888, 5043642, 5078036, 5078037, 5080852, 5094262, 5114291, 5119827, 5123375, 5132845, 5147008, 5149663, 5166229, 5166230, 5180017, 5183064, 5189063, 5191559, 5202504, 5226340, 5285586 | |
| 71124.07 | Calibration | 7318 | Sample Station No. 7 Pump | 04/10/19 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | Records | | | |
| 71124.07 | Calibration Records | 7319 | Sample Station No. 2 Pump | 04/23/19 |
| 71124.07 | Calibration Records | 7321 | Sample Station No. 111 | 04/10/19 |
| 71124.07 | Calibration Records | 7453 | Sample Station No. 8 | |
| 71124.07 | Calibration Records | 7454 | Sample Station No. 10 | 04/10/19 |
| 71124.07 | Calibration Records | 7455 | Sample Station No. 1 Pump | 04/10/19 |
| 71124.07 | Calibration Records | 7539 | Sample Station No. 9 | 04/10/19 |
| 71124.07 | Corrective Action Documents | CR-CNS- | 2017-06303, 2017-06091, 2017-06726, 2018-00145, 2018-00508, 2018-00643, 2018-01230, 2018-01646, 2018-02826, 2018-03600, 2018-04300, 2018-07515, 2019-01684, 2019-02054, 2019-02653, 2019-02693, 2019-02772, 2019-02966, 2019-03245 | |
| 71124.07 | Miscellaneous | | 2018 Land Use Census | 07/11/18 |
| 71124.07 | Miscellaneous | | 2018 Cooper Nuclear Station Radioactive Effluent Release Report | 2018 |
| 71124.07 | Miscellaneous | | 2017 Cooper Nuclear Station Radioactive Effluent Release Report | 2017 |
| 71124.07 | Miscellaneous | | Cooper Radiological Environmental Monitoring Program 2017 Annual Report | 12/31/17 |
| 71124.07 | Miscellaneous | | Cooper Radiological Environmental Monitoring Program 2017 Annual Report | 12/31/18 |
| 71124.07 | Miscellaneous | | 2019 Land Use Census | 07/15/19 |
| 71124.07 | Procedures | 8.ENV.1 | CNS Radiological Environmental Monitoring Program Administration | 4 |
| 71124.07 | Procedures | 8.ENV.4 | CNS Environmental Air Pump Calibration and Maintenance | 0 |
| 71124.07 | Procedures | 8.ENV.5 | Annual Review of Broadleaf Vegetation Sample Locations Procedure | 0 |
| 71124.07 | Procedures | 8.ENV.8 | Administering the CNS Meteorological Program (CNS MET) | 3 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71124.07 | Procedures | 8.ENV.9 | Ground Water Monitoring Program Sampling, Monitoring, and Administrative Requirements | 11 |
| 71124.07 | Procedures | 14.MET.304 | Meteorological Maintenance Procedure for New 100-Meter Tower - System A | |
| 71124.07 | Procedures | 14.MET.305 | Meteorological Maintenance Procedure for New 100-Meter Tower - System B | |
| 71124.07 | Procedures | 8.ENV.2 | REMP Sampling | 4 |
| 71124.07 | Procedures | 8.ENV.3 | Action Levels for Environmental Samples | 3 |
| 71124.07 | Self-Assessments | | CNS Environmental Program Self-Assessment Support in Advance of NRC Inspection | 07/24/19 |
| 71124.07 | Self-Assessments | | Cooper Nuclear Station 2018 Environmental Assessment | 07/26/18 |
| 71124.07 | Self-Assessments | LO Number: 2018-0186-008 - Assessment Report | Radiological Environmental Monitoring Program Focused Self-Assessment Report | 06/06/19 |
| 71124.07 | Self-Assessments | NUPIC Audit/Survey Number: 24229 | Duke Energy / NUPIC QA Audit of GEL Laboratories - October 2016 | 11/01/16 |
| 71124.07 | Self-Assessments | NUPIC Audit/Survey Number: 24791 | Radioanalytical Laboratory Audit Report: Teledyne Brown Engineering-Environmental Services | 04/19/19 |
| 71124.07 | Self-Assessments | SS17-009 | 4500187675 "2016-2018 Environmental TLD Service" | 11/06/17 |
| 71124.08 | Corrective Action Documents | CR-CNS- | 2017-02377; 2017-06224; 2017-06352; 2018-00572; 2019-01039; 2019-02631 | |
| 71124.08 | Corrective Action Documents Resulting from Inspection | CR-CNS- | 2019-04451; 2019-04462 | |
| 71124.08 | Miscellaneous | | Gamma Spectrum Analysis of ERP Tower Silt | 07/31/2019 |
| 71124.08 | Miscellaneous | | 2017 Cooper Nuclear Station Radioactive Effluent Release Report | 2017 |
| 71124.08 | Miscellaneous | | 2018 Cooper Nuclear Station Radioactive Effluent Release Report | 2018 |
| 71124.08 | Miscellaneous | | Onsite Radioactive Material Storage Areas | 08/05/2019 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71124.08 | Miscellaneous | | Offsite Radioactive Material Storage Inventory | 05/20/2019 |
| 71124.08 | Miscellaneous | | Radioactive Material Storage Building Inventory | 08/06/2019 |
| 71124.08 | Miscellaneous | | Top Ten Equipment Reliability Action Plan - Radwaste System Reliability | 08/05/2019 |
| 71124.08 | Miscellaneous | 469062001 | Waste Stream Analysis for Dry Active Waste | 11/14/2018 |
| 71124.08 | Miscellaneous | CNS-RP-602 | CNS Radioactive Material Shipment Log - 2017 | 2017 |
| 71124.08 | Miscellaneous | CNS-RP-602 | CNS Radioactive Material Shipment Log - 2018 | 2018 |
| 71124.08 | Miscellaneous | CNS-RP-602 | CNS Radioactive Material Shipment Log - 2019 | 2019 |
| 71124.08 | Procedures | 0.PCP.1 | Process Control Program | 0 |
| 71124.08 | Procedures | 2.5.4.4 | NUPAC Dewatering System | 16 |
| 71124.08 | Procedures | 59.RW.10 | Physical Protection of Category I Quantities of Radioactive Material in Transit | 9 |
| 71124.08 | Procedures | 9.ENN-RP-106-1 | Radiation and Contamination Surveys | 22 |
| 71124.08 | Procedures | 9.RADOP.10 | Radioactive Source Control and Accountability | 23 |
| 71124.08 | Procedures | 9.RADOP.14 | Off-Site Radioactive Material Storage | 5 |
| 71124.08 | Procedures | 9.RW.1 | Radioactive Shipments | 39 |
| 71124.08 | Procedures | 9.RW.3 | Dry Radioactive Waste Classification/Listing and Radioactive Material Shipments | 4 |
| 71124.08 | Procedures | 9.RW.5 | Control of On-Site Storage of RWCU and Condensate Resins and Wastes (Transfer Out of Storage) | 4 |
| 71124.08 | Procedures | 9.RW.6 | Control of On-Site Dry Active Waste Storage | 4 |
| 71124.08 | Procedures | 9.RW.7 | Waste Stream Sampling | 19 |
| 71124.08 | Procedures | 9.RW.9 | Filling Containers with Waste/Radioactive Material | 18 |
| 71124.08 | Radiation Surveys | CNS-1904-0013 | Underwater Survey of Spent Fuel Pool | 04/11/2019 |
| 71124.08 | Radiation Surveys | CNS-1906-0000 | OCA 903' - Rad Material Storage Building | 06/04/2019 |
| 71124.08 | Radiation Surveys | CNS-1906-0013 | Multipurpose Facility (MPF) 903' | 06/25/2019 |
| 71124.08 | Radiation Surveys | CNS-1907-0006 | Horizontal Storage Module (HSM) ISFSI Pad | 07/08/2019 |
| 71124.08 | Radiation Surveys | CNS-1907-0007 | Horizontal Storage Module (HSM) ISFSI Pad Top View | 07/08/2019 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71124.08 | Radiation Surveys | CNS-RP-138 | Alpha/Beta Smear Count Quarterly Survey of Offsite RAM Storage | 05/08/2019 |
| 71124.08 | Radiation Surveys | CNS-RP-508 | Low Level Radwaste Storage Building | 03/20/2019 |
| 71124.08 | Self-Assessments | | Annual Review of 10 CFR Part 37 Transportation Security Plan, Hittman Transport, 2018 | 07/23/2018 |
| 71124.08 | Self-Assessments | LO-2018-0186-04 | Self-Assessment: Radiological Monitoring Instrumentation and Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transport | 04/17/2019 |
| 71124.08 | Self-Assessments | QA 18-05 | Radiological Controls Quality Assurance Audit | 08/23/2018 |
| 71124.08 | Shipping Records | 17-24 | UN3321 RAM - LSA II, Fissile-Excepted, 7, RQ, Spent Resin | 10/17/2017 |
| 71124.08 | Shipping Records | 17-25 | UN3321 RAM - LSA II, Fissile-Excepted, 7, Dry Active Waste | 12/06/2017 |
| 71124.08 | Shipping Records | 17-26 | UN2912 RAM - LSA I, Fissile-Excepted, 7, RQ, Dry Active Waste | 12/15/2017 |
| 71124.08 | Shipping Records | 18-05 | UN2912 RAM - LSA I, Fissile-Excepted, 7, RQ, Dry Active Waste | 08/09/2018 |
| 71124.08 | Shipping Records | 18-10 | UN3321 RAM - LSA II, Fissile-Excepted, 7, Spent Resin | 09/11/2018 |
| 71124.08 | Shipping Records | 18-11 | UN3321 RAM - LSA II, Fissile-Excepted, 7, Dry Active Waste | 10/11/2018 |
| 71124.08 | Shipping Records | 18-14 | UN3321 RAM - LSA II, Fissile-Excepted, 7, Dry Active Waste | 12/11/2018 |
| 71124.08 | Shipping Records | 19-01 | UN2916 RAM - Type B(U), Fissile-Excepted, 7, RQ, Spent Resin | 03/04/2019 |
| 71124.08 | Shipping Records | 19-03 | UN2916 RAM - Type B(U), Fissile-Excepted, 7, RQ, Spent Resin | 04/02/2019 |
| 71151 | Miscellaneous | | 3Q18 thru 4Q19 PI Verification Package – Complicated SCRAMS | |
| 71152 | Corrective Action Documents | CR-CNS- | 2018-08615, 2019-00171, 2019-01287, 2019-02281, 2019-02371, 2019-02739, 2019-02791, 2019-02798, 2019-02842, 2019-02875, 2019-04219 | |
| 71153 | Corrective Action Documents | CR-CNS- | 2018-06295 | |
| 71153 | Miscellaneous | | CNS Operations Log | 10/09/2018 |
| 71153 | Miscellaneous | | CNS Operations Log | 10/10/2018 |
| 71153 | Miscellaneous | LER 2018-002-00 | Lack of Procedural Guidance Results in Work Scheduling Error Causing Breach of Secondary Containment and | |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | | Condition Prohibited by Technical Specifications | |
| 71153 | Procedures | 0-CNS-OU-108 | Cooper Shutdown Safety Management Program | 6 |
| 71153 | Procedures | 0-CNS-WM-102 | Work Implementation and Closeout | 10, 11 |
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