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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

IE Inspection Report No. 50-267/80-02

Docket No. 50-267 License No. DPR-34

Licensee: Public Service Company of Colorado
P. O. Box 840
Denver, Colorado 80201

Facility Name: Fort St. Vrain Nuclear Generating Station

Inspection At: Fort St. Vrain Site, Platteville, Colorado

Inspection Conducted: February 1-29, 1980

Inspectors: Robert G. Spangler for 8 March 1980
M. W. Dickerson, Senior Resident Reactor Inspector Date

Robert G. Spangler for 8 March 1980
R. G. Spangler, Reactor Inspector Date

Robert G. Spangler for 13 March 1980
R. E. Collins, Resident Reactor Inspector Date

Robert G. Spangler for 13 March 1980
L. A. Yandell, Reactor Inspector Date

Approved by: T. F. Westerman 14 March 1980
T. F. Westerman, Chief, Reactor Projects Section Date

Inspection Summary

Inspection February 1-29, 1980 (Report No. 50-267/80-02)

Areas Inspected: Routine, announced inspection of Event Reports; Calibration; Surveillance; Bulletins/Circulars; Maintenance; Physical Security; Plant Operations; Followup on Items of Noncompliance; Followup on Inspector Identified and Unresolved Problems; Emergency Planning; Core Safety Limit; and Report Reviews. The inspection involved 227 inspector-hours on-site by four (4) NRC inspectors.

Results: Within the ten (10) areas inspected, two items of noncompliance were identified (infraction - Failure to use latest procedure revisions while performing calibration, paragraph 5a; and deficiency - Failure to provide a record of test equipment, paragraph 5a).

DETAILS

1. Persons Contacted

L. Brey, QA Manager
W. Craine, Maintenance Superintendent
W. Franek, Results Supervisor
C. Fuller, Engineer Technical Services
J. Gamm, Supervisor Technical Services
E. Hill, Operations Superintendent
W. Hillyard, Administrative Services Manager
F. Mathie, Operations Manager
J. Solakiewicz, Superintendent Operations QA
G. Turner, Supervisor of Security
D. Warembourg, Manager Nuclear Production

The inspectors also contacted other plant personnel including Reactor Operators, Maintenance men, Electricians, Engineers, Technicians and Administrative Personnel.

2. Licensee Action on Previous Inspection Findirgs

(Close) Open Item (50-267/7703): NI accuracy (Decalibration). The recommended circuit design to provide a solution to the decalibration problem, a floating trip setpoint, was submitted to NRR by the licensee January 11, 1979, in letter P-79012. In the interim the linear power channel scram and RWP are calibrated daily or whenever a 10% change in power level has occurred, or a rod is fully withdrawn.

(Close) Open Item (50-267/7914): Hanger 11-A-H-46448 initial audit not in accordance with observations. The inspector reviewed the reaudit of the hanger and confirmed that no major discrepancies were overlooked.

(Closed) Open Item (50-267/7917-01): No portable radios available for emergencies in control room. Operations order dated January 31, 1980 was issued regarding the control of portable radios. Observations have indicated that the required radios are now available.

(Closed) Open Item (50-267/7917-02): Records not maintained for required controller settings. The required records are now maintained on Report No. 5276 "Fort St. Vrain Master Setpoint List - Controllers."

(Close) Unresolved Item (50-267/7919-02): Thread Engagement Depth Sample Enlargement - Bulletin 79-02. The licensee completed inspection of 50 floor mounted bolts and an additional 99 wall mounted bolts, ie: measuring for thread engagement. Only one was measured to have

inadequate thread engagement and was subsequently repaired. The measurements were a result of ultrasonic and actual measurements.

(Close) Unresolved Item (50-267/7919-03): Verification of embedment depth - Bulletin 79-02. The licensee completed the UT testing program in conjunction with physical measurements to verify embedment depth for the bolts noted in unresolved item 7919-02. Only one bolt had insufficient embedment depth.

(Close) Item of Noncompliance (50-267/7922-1): Procedural instructions not available. Technical Services Procedure No. 13 was revised and reviewed with operation personnel relating to the time that flow may be removed from the primary and secondary coolant.

(Close) Item of Noncompliance (50-267/7922-2): (a) Trash in the auxiliary electric room and oil soaked paper towels, garbage can overflowing, oil stored on lower level of rear building; and (b) PME-3 not completed properly. All maintenance personnel were reinstructed regarding their responsibilities for maintaining clean working areas and for completion of data sheets in accordance with procedural requirements.

3. Physical Protection

The inspector reviewed portions of the licensee's physical protection program by review of selected records and observation of the activities of access control, search, escorting, and communications.

No items of noncompliance or deviations were identified.

4. Review of Plant Operations

A review of plant operations was conducted to ascertain whether facility operation was in conformance with the requirements established in Technical Specifications, 10 CFR, and Administrative Procedures, or licensee commitments discussed in correspondence to the Commission.

Included in the inspection were observation of control room activities, review of operational logs, records, and tours of accessible areas. Logs and records reviewed included:

- Shift Supervisor Logs
- Reactor Operator Logs
- Technical Specification Compliance Log
- Operating Order Book

- Form 1 Log (Jumper Log)
- Plant Trouble Reports
- Selective Valve Lineups

During the tour of accessible areas, particular attention was directed to the following:

- Monitoring Instrumentation
- Radiation Controls
- Housekeeping
- Fluid Leaks
- Piping Vibration
- Hanger/Seismic Restraints
- Clearance Tags
- Fire Hazards
- Control Room Manning
- Annunciators

No items of nonconformance or deviations were identified.

5. Calibration

a. Technical Specification Requirements

The inspectors selected a sample of various instruments to verify that the frequency of calibration required by the licens. had been met. From this sample, documentation from 13 of these instrument channels was selected and reviewed for (1) completeness, (2) proper acceptance criteria, (3) use of proper revision, and (4) qualification of individuals performing the calibration. In addition, the procedures were reviewed to verify that (1) they had been approved as required by Technical Specification, (2) calibration was to the required accuracy, (3) as-found as as-left conditions were recorded, (4) calibration equipment used was traceable, and (5) calibration sheets had been initialed by the technician performing the calibration. The following calibration records were reviewed:

		TS Reference	Calibration Dates
*SR5.1.2bd-A	Reserve Shutdown System Hopper Instrumentation Calibration	5.1.2d)	4/3/78 3/26/79
*SR5.2.1c1 & c2	PCRV Overpressure Safety System Instrumentation Calibration	5.2.1c)	(c1) 10/3/79 12/14/79 (c2) 6/7/79
*SR5.2.9-A	Helium Circulator Bearing Water Accumulator Instrumentation Calibration	5.2.9	11/30/78 10/29/79
*SR5.2.15-A	PCRV Penetration Interspace Pressure Instrumentation Calibration	5.2.15	1/30/79
*SR5.2.23-A	Fire Water Booster Pump Instrumentation Calibration	5.2.23	5/22/79
*SR5.3.5-A	Hydraulic Oil Accumulator Gas Pressure Instrument Calibration	5.3.3	3/22/79
*SR5.3.6-A	Instrument Air System Pressure Instrument Calibration	5.3.6	4/25/78 7/16/79
SR5.4.1.1 3c-R	Startup Channel Scram Calibration	5.4.1.1.3	12/1/78 12/1/79
SR5.4.1.1 4c-D	Linear Power Channel Scram and PMP Calibration	5.4.1.1.4	Week #1 1/5-6/80 Week #2 1/7-8/80 Week #8 2/18-22/80
*SR5.4.1.1 bc-R	Primary Coolant Moisture Calibration	5.4.1.1.b	10/30/78 11/14/79
SR5.4.1.1 8c-R	Reheat Scram Temperature Scram Calibration	5.4.1.1.8	9/10/78 9/11/79
SR5.4.1.1 9c-R	Primary Coolant Pressure Scram Calibration	5.4.1.1.9	3/1/79 10/30/79
SR5.4.1.1 10c-R	Circulator Inlet Temperature Scram Calibration	5.4.1.1.10	6/7/78 7/9/79
SR5.4.1.1 11b-R	Hot Reheat Header Pressure Scram Calibration	5.4.1.1.11	7/24/78 7/27/79

*SR5.4.1.3 2d-R	Feedwater Flow Calibration	5.4.1.3.2	6/6/78 3/19/79
*SR5.4.5A1	PCRV Cooling Water Flow Scram Calibration	5.4.5	9/26/78 9/17/79
*SR5.4.10.5A/ B1-A	Seismic Instrumentation	5.4.10	7/9/79 12/12/79
*SR5.5.1-A	Reactor Building Sub-Atmospheric Instrument Calibration	5.5.1	3/2/79
*SR5.6.1cd-A	Diesel Generator Exhaust Temperature Instrument Calibration	5.6.1	5/26/79 to 9/4/79

*These channels received the expanded review.

As a result of these reviews, the inspectors had the following findings.

While reviewing the Linear Power Channel Scram and RWP Calibration Procedure SR 5.4.1.1.4c-D for week No. 1 (1/5-6/80) and week No. 2 (1/7-8/80), it was noted by the inspector that the test conductor had failed to identify the calibration equipment used in Section 3.0. ADM-13, Administrative Procedure for Technical Specification Surveillance, states in Section 2.5d) that the test conductor, "is responsible for assembling test equipment, special tools and other items specified by the test procedure and identifying them in Section 3.0 of the SR." The inspector determined that the calibration was performed properly, but the failure to follow the administrative procedure as noted above constitutes an item of noncompliance at the deficiency level.

In addition, the inspectors found that the following calibration procedures had been conducted using superceded procedure revisions:

Procedure No.	System Calibration	Date Performance Began	Revision Used	Revision in Effect at Performance
5.1.2bd-A	Reserve Shutdown	3/26/79	13	14 effective 1/31/79
5.3.5-A	Hydraulic Power	3/22/79	10	12 effective 2/28/79

5.3.6-A	Instrument Air	7/16/79	8	9 effective 3/5/79
5.4.1.1.11b-R	Hot Reheat	7/27/79	10	11 effective 3/5/79
5.4.1.3.2d-R	Feedwater	3/19/79	13	15 effective 2/28/79

With the one exception below, it appears that only nonsubstantive changes were involved in the above procedure revisions. Procedure 5.4.1.3.2d-R, Feedwater System Instrumentation Calibration, appears to involve a major rewrite between revisions 13 and 15, and will require licensee review to verify the acceptability of the calibration.

The licensee's Quality Assurance Plan for Operations implements Criterion VI of Appendix B to 10 CFR 50, Document Control, which specifically states that procedures, including changes thereto, shall be distributed to and used at the locations where the prescribed activity is performed. This failure to utilize the most current procedure revisions is contrary to the requirements identified above and constitutes an item of noncompliance at the infraction level.

The inspector also inspected two instruments used as primary standards for calibration of the Omega RTD Temperature Probe No. 8177 (PSC No. M3119) and Heise Test Gage CM-7004 (PSC No. 3167).

No further adverse findings were identified.

b. Technical Specification Related Instruments

The inspector selected a sample of instrumentation from safety-related systems to verify that (1) these instruments are included in the licensee's program for routine calibrations, (2) the range and accuracy of the components is consistent with the application, (3) approved procedures are available to calibrate the component, and (4) calibration records are complete. The following calibration records were reviewed:

LI-2519, Liquid Nitrogen Storage Tank Level

FR-4101, Liquid Effluent Blowdown Low Circulating Water Flow

LI-4102-3, Circulating Water Makeup Storage Pond Level

PCRV Outlet Subheader and Liner Cooling Tube Indicators and Thermocouples

When given the instrument calibration history cards for LI-2519, the inspector noted that nothing had been done since 1976. Further investigation found that the original device had been taken out of service and replaced with a different type sensor in 1977. Calibration cards did exist for the new device and calibrations had been performed, but some confusion existed because no entry had been made on the original cards indicating that the device was no longer in service.

While examining the calibration cards for LI-4102-3, it was determined that the original level device has just been replaced by another type. However, the original calibration cards had been retained with the original device number removed and the new device number listed. By doing so, the calibration/repair history for the original device also appears applicable to the new instrument. In addition, LI-4102-3 was not listed in the latest Master Calibration List used by the licensee to schedule routine calibrations. Although the calibrations had been performed, there was no mechanism identified for ensuring that this would be done on a routine basis. The licensee indicated that LI-4102-3 would be incorporated into the Master Calibration List and that the problems identified above related to the calibration records would be investigated. Therefore, pending further review, these concerns are considered open items. (8002-01)

6. Core Safety Limit

The inspector reviewed surveillance procedures regarding core safety limits to verify that procedures exist requiring (a) periodic review of reactor power and reactor power to flow ratios to assure that undue migration of fuel kernels has not occurred, and (b) calculation of the amount of fuel kernel migration as required by the technical specification when the reactor power to flow ratio exceeds a specified valve.

Surveillance procedure (SR 5.1.6-w) was reviewed by the inspector through December 28, 1979. Total migration experienced for Core 1 was 0.217 and that for core 2 to December 28, 1979 is 0.138.

No items of noncompliance or deviations were identified.

7. Maintenance

The inspector reviewed selected maintenance activities to determine that those activities met acceptable maintenance practices, the licensee's

applicable administrative and maintenance procedures, and where applicable were in accordance with Technical Specifications. Additionally, the inspector observed portions of maintenance activities to verify that procedural requirements were met, personnel were qualified, QC hold points were provided, tagging procedures were appropriate and the items were not reportable as reportable occurrences.

The maintenance activities reviewed were:

Circulator Replacement PTR1-72, CWP-410, CWP-465

Moisture Monitors 1117, 1121, 1122, CWP 443, CN 1083

Hydraulic Pumps Coupling Inspection PTR2-120, Maintenance Procedure #105

Hangers 11A-H-21325, 11A-H-21326, 11A-H-21327 CN 1178, WA869-98

The hangers identified above were the result of findings from Bulletin 79-14.

No items of noncompliance or deviations were identified.

8. Surveillance

The inspector observed Technical Specification required surveillance testing as follows:

SR 5.6.1b-SA Loss of Outside Power and Turbine Trip.

No items of noncompliance or deviations were identified.

9. Review of Licensee Event Reports

The inspector reviewed licensee event reporting activities to verify that they were in accordance with Technical Specification, Section 7, including identification details, corrective action, review and evaluation of aspects relative to operations and accuracy of reporting.

The following reports were reviewed by the inspector:

*RO 80-02 RO 77-17

*RO 80-03

RO 80-02 as submitted did not contain sufficient information regarding reactivity changes which occurred during the report period. For example, the RO did not include information concerning the control rods which were removed and reinstalled, during installation of the core restraint devices. The licensee plans to resubmit the report.

During review of RO 80-03 the inspector noted that the hangers were incorrectly identified as 11A-H-21235, 11A-H-21236 and 11A-H-21237. The licensee will resubmit the report with the correct hangers as follows: 11A-H-21325, 11A-H-21326, and 11A-H-21327.

*Still Open

No items of noncompliance or deviations were identified.

10. Emergency Planning

The inspector observed the annual drill (FOSAVEX 80) to verify that emergency actions were taken in accordance with the licensee's approved emergency plan.

The inspector observed the drill primarily from the site command post and control room. The inspector noted several minor deficiencies including:

- Battery powered phone monitors were audibly weak and the batteries in use have a short lifetime.

- Total accumulated doses were not monitored closely by the licensee for both plant operators and off site personnel until approximately 2 hours 15 minutes into the drill scenario. The accumulated doses would not have exceeded 10 CFR 20 limits up until that time, but it had not been considered until the accident had been reclassified as Category III.

The licensee is taking action to resolve these concerns.

No items of noncompliance or deviations were identified.

11. IE Bulletin/Circulars

The inspector verified by record review, observation, and discussion with representatives of the licensee, the actions taken in response to IE Bulletin/Circulars.

The following Circulars were reviewed:

79-23 Motor Starters and Contactors Failed to Operate. None with the specified date code, model and serial Number were received by Fort St. Vrain.

The following Bulletins were reviewed:

77-01 Pneumatic Time Delay Relay Setpoint Drift Change Notice #594B was completed by CWP #349 and 418. The change required replacement with electronic timing mechanisms. The replacement is now complete.

79-23 Potential Failure of Emergency Diesel Generator Field Exciter Transformer. A test, T-125, was completed January 11, 1980 as required by item 2 of the bulletin. The results appear to be satisfactory.

79-25 Failures of Westinghouse BFD Relays in Safety-Related Systems. Westinghouse BFD/NBFD relays as listed in the bulletin were not used at Fort St. Vrain.

79-28 Possible Malfunction of NAMCO Model EA180 Limit Switches at Elevated Temperatures. NAMCO Model EA180 Limit Switches as listed in the bulletin were not used at Fort St. Vrain.

No items of noncompliance or deviations were identified.

12. Report Reviews

The inspector reviewed the following reports for content, reporting requirements and adequacy.

. Annual Operating Report, January 1979 through December 1979.

. Report of Changes, Tests, and Experiments, January 1, 1979 through December 31, 1979.

No items of noncompliance or deviations were identified.

13. Exit Interviews

Exit interviews were conducted at the end of various segments of this inspection with Mr. D. Warembourg (Manager, Nuclear Production) and other members of the Public Service Company staff. At the interviews, the inspector discussed the findings indicated in the previous paragraphs. The licensee acknowledged these findings.