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

IE Inspection Report No. 50-267/80-06

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: March 3, 1980 - March 28, 1980

Inspectors: D S Nelson /for 4/9/80
M. W. Dickerson, Senior Resident Reactor Inspector Date

D S Nelson /for 4/9/80
R. E. Collins, Resident Reactor Inspector Date

Approved By: D S Nelson 4/9/80
T. F. Westerman, Chief, Reactor Projects Section Date

Inspection Summary

Inspection March 3, 1980 - March 28, 1980 (Report No. 50-267/80-06)

Areas Inspected: Routine, announced inspection of Review of Event Reports; Surveillance; Maintenance; Operational Safety Verification; Review of Bulletins/ Circulars; and Report Reviews. The inspection involved 115 inspector-hours on-site by two (2) NRC inspectors.

Results: Within the six (6) areas inspected, two items of noncompliance were identified (Infraction - Failure to meet Technical Specification requirements for core regional temperature rise, Paragraph 3; Infraction - Failure to follow procedures, Paragraph 2).

DETAILS

1. Persons Contacted

L. Brey, QA Manager
W. Crane, Maintenance Superintendent
W. Franek, Results Supervisor
W. Franklin, Shift Supervisor
J. Gamm, Supervisor Technical Services
E. Hill, Operations Superintendent
W. Hillyard, Administrative Services Manager
D. Hood, Shift Supervisor
F. Mathie, Operations Manager
J. Solakiewicz, Superintendent Operations QA
D. Warembourg, Manager Nuclear Production

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

2. Surveillance

The inspector reviewed all aspects of surveillance testing involving safety-related systems. The review included observation and review relative to Technical Specification requirements. The surveillance tests reviewed were:

SR 5.4.1.1.1a-RP	Manual Scram Test (CR)
SR 5.4.1.1.2a-MP	Manual Scram Test (I-49)
SR 5.4.1.1.3b-P/ 5.4.1.4.1b-P	Startup Channel Scram Test
SR 5.4.1.1.6c-R	Primary Coolant Moisture Scram Calibration
SR 5.6.1.a-W	Diesel Generator 50% Test (B only)

During review of SR 5.4.1.1.6c-R Primary Coolant Moisture Scram Calibration performed November 14, 1979, the inspector noted that a moisture detector, EG&G Model 440, S/N 00197 was used as the standard for calibration of the installed moisture monitors. The surveillance procedure specifically calls for using an EGG 992 Moisture Detector.

The procedures require that the moisture detector be checked against a Helium/Hydrogen mixture of known moisture concentration and then

used to calibrate the installed moisture monitors. Since the moisture detectors are compared to a known moisture concentration and the two models described above are equivalent, the inspector verified that the results of the surveillance were satisfactory.

However, since the moisture detectors are used to calibrate the installed moisture monitors and the moisture monitors do provide outputs that are used for scram and loop shutdown function, the inspector noted that the moisture detectors were not properly classified as "transfer standards." Moreover, no records existed to indicate when these instruments were calibrated or were used as standards for calibration.

The manufacturer's technical manual for the EG&G 440, Moisture Detector, requires a digital voltmeter to be used for calibration of the detector. The digital voltmeter must be accurate and based on discussions with technicians, the detectors are calibrated using digital voltmeters traceable to nationally recognized standards.

ADM-14, Administrative Procedure for Calibration of Plant Instrumentation and Test Standards, states that one of its purposes in part is "To provide for periodic calibration verification of secondary and transfer standard instrumentation and special measuring devices to assure the necessary accuracy and frequency of calibration." A transfer standard is defined as an instrument, radioactive source, or measuring device used as a lab or shop standard whose calibration is traceable to nationally recognized standards. ADM-14 also states in part, "Complete calibration records of each transfer device shall be maintained in the departmental files."

Contray to this, no records exist at this time on either the EGG 992 or EGG 440 Moisture Detectors although both are defined as transfer standards.

A representative of the licensee stated that the procedure SR 5.4.1.1.6c-R would be changed to allow use of an EGG 992 Moisture Detector or its equivalent, and that the calibration of the detector would be required both before and after the surveillance procedure to make a proper evaluation of the calibration results of the installed moisture monitors. The licensee's representative also stated that records would be maintained on the moisture detectors.

The failure to comply with these requirements as indicated above were discussed with the licensee who was informed that this was an apparent item of noncompliance for failure to follow procedure, ADM-14, and was considered an infraction.

The inspector had no additional questions in this area.

3. Operational Safety Verification

The inspector reviewed licensee activities to ascertain that the facility is being operated safely and in conformance with regulatory requirements, and that the licensee's management control system is effectively discharging its responsibilities for continued safe operation. The review was conducted by direct observation of activities, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety system status and limiting conditions for operations, and review of facility records.

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

During tours 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

During this aspect of the inspection, the inspector noted that a number of the indicating lights on panel I-49 (Remote Shutdown Panel) were out. Discussion with a representative of the licensee indicated that a check of the indicating lights on the panel would be placed in PMO-28-W "Test of All Alarms." This test will require a check of I-49 panel lights on a weekly basis. This will remain as an open item (8006.01).

During review of the Operator Logs for March 12, 1980, the inspector noted that PTR 3-189 had been written because the orifice valve for region 31 would not close. Discussion with respesentives of the licensee indicated that the orifice had been stuck in this position since March 11, 1980 prior to startup of the reactor and that this had resulted in noncompliance with Technical Specification, Limiting Condition for Operation (LCO) 4.1.9. LCO 4.1.9 requires that "whenever the reactor is pressurized to more than 50 psia and core inlet valves are set at any position other than for equal flows, the measured helium coolant temperature rise through any core region shall not exceed the limits given in Figure 4.1.9-2 (at the appropriate power level)."

Contrary to this requirement, the limits imposed by Figure 4.1.9-2 (at the appropriate power level) for measured coolant temperature core region rise was exceeded for several regions on March 11, 1980 beginning at approximately 9:52 p.m. and continuing on March 12, 1980 until 12:41 p.m. at which time the region 31 orifice was adjusted and all orifices were set for equal flow and all temperature and flows were within limits. Moreover, on March 12, 1980, region temperature rises for all regions were greater than the allowable rise for the specified reactor power level. Examples are as follows:

Date	Time	PWR %	*Allowable ΔT	Actual ΔT ^{o}F	Region
3/11/80	21:48	0.9%	70^{o}F	Within Limits	All
3/11/80	21:52:30	0.9%	70^{o}F	74^{o}F	2
3/11/80	21:52:30	0.9%	70^{o}F	75^{o}F	7
3/11/80	22:44	1.03	82^{o}F	136^{o}F	1
3/11/80	22:44	1.03%	82^{o}F	155^{o}F	2
3/11/80	22:44	1.03%	82^{o}F	134^{o}F	3
3/11/80	22:44	1.03%	82^{o}F	105^{o}F	4
3/11/80	22:44	1.03%	82^{o}F	146^{o}F	5

3/11/80	22:44	1.03%	82°F	143°F	6
3/11/80	22:44	1.03%	82°F	156°F	7
3/11/80	22:44	1.03%	82°F	85°F	9
3/11/80	22:44	1.03%	82°F	103°F	17
3/11/80	22:44	1.03%	82°F	97°F	19
3/11/80	22:44	1.03%	82°F	85°F	28
3/11/80	22:44	1.03%	82°F	91°F	34
3/11/80	22:44	1.03%	82°F	89°F	37
3/12/80	12:33:40	1.5%	121°F	Above Limits	All 37
3/12/80	14:09:41	1.48%	118°F	Above Limits	All 37
3/12/80	15:59:41	1.2%	92°F	Above Limits	All 37
3/12/80	16:12:11	0.05%	5°F	Above Limits	All 37

*From T/S figure 4.1.9-2.

At 16:19:11 on March 12, 1980, equal flow distribution was returned to all regions and the ΔT requirements imposed by Figure 4.1.9-2 were no longer applicable. Additional times at which several regions were noted to be above limits were 23:53:30 on March 11, 1980 and 02:40:00, 05:55:31, 09:48:10, and 15:05:41 on March 12, 1980.

Discussion with representatives of the licensee indicated that when the stuck (open) orifice valve in region 31 was encountered and equal flow distribution was not achievable, the reactor operator noted that the basis for LCO 4.1.9 was addressed to preventing very low flow conditions with an orifice stuck in a more closed position. Since the LCO requirements did not appear to be applicable, he discussed this interpretation with supervisory personnel. It was determined that no excessive fuel temperatures would be expected with Δ temperatures across the regions in excess of the allowable limits of LCO 4.1.9 and consequently the action required by LCO 4.1.9 to initiate shutdown of the reactor within fifteen minutes was not taken.

The licensee was informed by the inspector that failure to observe the requirements of LCO 4.1.9 was an item of noncompliance of the infraction level for failure to comply with the Technical Specification requirements.

The licensee intends to submit a T/S change for LCO 4.1.9 to include situations such as this when the orifice may be stuck in an open rather than a closed position.

The inspector had no additonal questions in this area.

4. Maintenance

The inspector reviewed records and observed work in progress to ascertain that maintenance of activities are being conducted in accordance with approved procedures, Technical Specifications and appropriate codes and standards.

The following maintenance activities were reviewed:

PTR 3-377 Emergency Water Booster Pump Mechanical Seal Repair.

PTR 3-382 Troubleshoot Diesel Generator "A" - Running After Shutdown in Control Room.

PTR 3-76 Repair Expansion Joint on Pump P-4101 (Circulating Water Tower Pump)

PTR 3-261 Auxilliary Boiler Tube Replacement

At the end of the inspection report period work on PTR 3-377, 3-76 and 3-261 had not been completed.

No items of nonconformance or deviations were identified.

5. 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 78-22	RO 80-02
RO 79-27	RO 80-04
RO 79-54	RO 80-05
RO 79-60	RO 80-08
RO 79-62	RO 80-09

No items of noncompliance or deviations were identified.

6. 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:

79-25, Supplement A - Shock Arrestor Strut Assembly Interference. No Bergen-Patterson Part 2540 Strut Assemblies used at Ft. St. Vrain

80-01, Service Advice for General Electric Induction Disc Relays. No relays of this date code installed at Ft. St. Vrain.

The following Buletin was reviewed:

80-04, Analysis of a PWR Main Steam Line Break with Continued Feedwater Addition. Not Applicable to Ft. St. Vrain.

No items of nonconpliance or deviations were identified.

7. Report Reviews

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

The fourteenth startup report for Fort St. Vrain for the period November 23, 1979 through February 22, 1980.

No items of noncompliance or deviations were identified.

8. Exit Interviews

Exit interviews were conducted at the end of various segments of this inspection with Mr. D. Warembourg (Manager, Nuclear Production) and/or 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.