

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-267/83-25

License: DPR-34

Docket: 50-267

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

Facility Name: Fort St. Vrain Nuclear Generating Station

Inspection at: Fort St. Vrain (FSV) Site, Platteville, Colorado

Inspection Conducted: September 1-30, 1983

Inspector: G. L. Plumlee III
G. L. Plumlee III, Senior Resident Inspector (SRI)

10-24-83
Date

Approved: D. M. Hunnicutt
D. M. Hunnicutt, Chief
Reactor Project Section A

10/25/83
Date

Inspection Summary

Inspection Conducted September 1-30, 1983 (Report: 50-267/83-25)

Areas Inspected: Routine, announced inspection of Licensee Action on Previous Inspection Findings; Operational Safety Verification; Surveillance; Maintenance; Engineered Safety Features, Review of Periodic and Special Reports; IE Bulletin Follow Up; and Licensee Event Follow Up. The inspection involved 115 inspector-hours onsite by one NRC inspector.

Results: Within the eight areas inspected, one violation was identified (failure to perform Technical Specification action statement, paragraph 3).

DETAILS

1. Persons Contacted

Principle Licensee Employees

T. Borst, Radiation Protection Manager
T. Burchfield, Superintendent of Betterment of Nuclear Division
W. Craine, Superintendent of Maintenance
R. Craun, Supervisor Nuclear Site Engineering
M. Deniston, Shift Supervisor
D. Evans, Shift Supervisor
M. Ferris, QA Auditing Coordinator
W. Franek, Superintendent Operations
C. Fuller, Technical/Administrative Services Manager
J. Gahm, QA Manager
J. Jackson, Maintenance QC Supervisor
M. McBride, Operations Manager
M. Niehoff, Site Engineering Manager
F. Novachek, Technical Services Engineering Supervisor
H. O'Hagen, Shift Supervisor
J. Owen, Maintenance Supervisor
G. Redmond, Maintenance QC Supervisor
G. Reigel, Shift Supervisor
T. Schleiger, Health Physics Supervisor
L. Singleton, Superintendent Operations QA
H. Starner, Coordinator Nuclear Site Construction
J. Van Dyke, Shift Supervisor
D. Warembourg, Manager Nuclear Production
R. Webb, Maintenance Supervisor

The SRI also contacted other plant personnel including reactor operators, maintenance men, electricians, technicians, and administrative personnel.

2. Licensee Action on Previous Inspection Findings

(Closed) Open Item (8305-01): Storage of Station Batteries (CAAR-612).
An evaluation has been performed by the nuclear engineering division which indicated that storage conditions on the turbine deck are not detrimental to the batteries. In addition, the licensee stated that electricians are to check the conditions of the batteries and electrolyte levels monthly.

(Closed) Open Item (8305-04): Revision to RP-332 (CAAR-614). RP-332.
"Performance Test of P-2103 and P-2103S," Issue 2, dated July 11, 1983, incorporated acceptance criteria.

(Closed) Violation (8309-02): No Calibration Procedure. Thermocouples T1 - T6 were calibrated by Martin Marietta Aerospace on August 3, 1983. Since that time Thermocouples T1 - T6 have been permanently removed from service and are not used on safety-related maintenance activities.

(Closed) Violation (8312-01): SR 5.4.5-M Data Not Taken. SR 5.4.5-M, "PCRV Cooling Water Flow Scan Functional Test," Issue 18, dated August 5, 1983, added a column for recording the flow values as required and in addition, the personnel involved in the tests were reminded to follow the procedure and to initiate procedure deviation reports per the administrative procedures as necessary to make the test correct.

(Closed) Violation (8312-06): Failure to Maintain Temperature Log. The responsibility for recording temperatures in the warehouses has been assigned to the senior storekeeper. This activity is supervised by the scheduling stores coordinator and the log sheets are returned to the administrative shift supervisor at the end of each month for review.

(Closed) Violation (8318-01): Analytical Moisture Monitors Isolated. The operator involved was reminded of the importance of following procedures and was given a formal verbal reprimand. Standard clearance forms that isolate flow to the analytical moisture monitors (ME-9306 and ME-9307) have been revised to specifically state that health physics personnel are responsible for tagging this system.

(Closed) Violation (8318-03): Surveillance Violations. Surveillance Test SR 5.8.1cd-Q had been revised requiring the reactor operator to verify by signature that the status of the radiation monitors has been logged and that system status tags have been installed/removed as required. Administrative Procedure P-4 was deleted and replaced by the Station Manager Administrative Procedure 1 (SMAP-1), "Surveillance Testing Program." This new procedure removed conflicting portions of the earlier procedure. All operations personnel were notified by memorandum that future documented failure to follow procedure violations would result in disciplinary action.

3. Operational Safety Verification

The SRI reviewed licensee activities to ascertain that the facility is being operated safely and in conformance with regulatory requirements and 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.

Logs and records reviewed included:

- . Shift Supervisor Logs
- . Reactor Operator Logs
- . Equipment Operator Logs
- . Auxiliary Operator Logs
- . Technical Specification Compliance Logs
- . Operations Order Book
- . Operations Deviations Reports
- . Clearance Log
- . Temporary Configuration Reports
- . Plant Trouble Reports

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

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

The procedure was reviewed and implementation observed for Radioactive Gaseous Effluent Release 1002. The gaseous release appeared to have been made in a satisfactory manner.

The SRI reviewed Clearance Tag 3967 required to be hung during surveillance testing and Clearance Tag 5609 covering control adjustments on PV-21243 for proper preparation and tagging as required.

The NRC inspector verified the operability of critical equipment necessary for safe shutdown of the plant by selected partial walkdown of the licensee's "critical valve" and "sealed valve" lists generated in response to NUREG 0737, Article I.C.6 requirements, and documented in the licensee's final submittal of P-82424 dated September 28, 1982. No problems were identified.

a. Moisture Monitor Setpoint

On September 29, 1983, at 7:10 a.m. MDT, during a daily control room tour, the SRI determined that the dewpoint setpoint for Low Level Moisture Monitor MM-1121 was less conservative than that required by Limiting Condition for Operation (LCO) 4.4-1, "Plant Protective System Instrumentation." This has been the subject of a previous violation (8120-01) and other examples of similar problems have been identified and reported to the licensee and evaluated by the SRI as isolated occurrences. The licensee's previous corrective action, once per shift check by reactor operator, apparently has not been adequate.

The SRI has been unable to determine any cause for the above setpoint, which is adjusted by a micrometer dial potentiometer, error. Upon notification of this apparent reoccurring problem, the licensee informed the SRI that a design change request has been initiated to have some sort of locking device placed over these potentiometers to ensure positive control is maintained. The SRI feels this corrective action adequate to prevent a reoccurrence and considers this to be an open item (8325-01) pending installation of the positive controls.

b. Emergency Diesel Generator (D/G) Operability

On August 3, 1983 at 8:10 a.m. MDT, with reactor power at 66%, the SRI found D/G set 1A in the manual/parallel position which defeats the auto start function of the D/G set. This had not been logged in the station logs and apparently was done to facilitate performance of a Nontechnical Specification surveillance for oil cleanup. The SRI questioned the licensee as to their interpretation of the following statement, in part, taken from LCO 4.6.1, "Auxiliary Electric System:"

"d) Both the diesel-generator sets are operable, including the following:

* * *

"3. Associated automatic load shedding, load programming, and auto diesel-generator set starting equipment."

The licensee stated that as worded, the Technical Specification apparently requires the D/G set to be in auto/independent for operability and that whenever the D/G set is placed in the manual/parallel mode, it would have to be considered inoperable and the LCO action statement must be complied with. Apparently this was not the licensee's interpretation in the past. The basis for LCO 4.6.1 states the following, in part,

"Under accident conditions, if the normal supply of power to these three essential busses should fail, the diesel-generator sets would come on and energize them. Bus load shedding, breaker closing, and load sequencing on to the diesel-generator sets is handled automatically."

From a review of two previous Level III Violations 8124-02 and 8126-01, resulting in Licensee Event Reports (LER) 81-058 and 81-066, and from an additional LER 82-033, which occurred during the time corrective action for Violation 8126-01 was being implemented, the SRI was aware of past apparent LCO 4.6.1 mis-interpretation problems.

The above violations and LER's resulted from the following LCO 4.6.1 requirements:

"a) Both the Unit Auxiliary and Reserve Auxiliary Transformers are operable.

"The Unit Auxiliary Transformer or the Reserve Auxiliary Transformer can be made inoperable for 24 hours provided both diesel generator sets (two engines and associated generator per set) are started immediately prior to taking the affected transformer out of service to verify their operability are shut down and their controls left in the automatic mode and all three 480 volt a-c essential buses are operable."

* * *

- "d) Both the diesel-generator sets are operable, including the following:

* * *

"One diesel generator set may be inoperable for up to 7 days (total for both) during any month provided the operability of the other diesel-generator set is demonstrated immediately as in "a" above and all essential buses are operable.

- "e) The two station batteries and their associated D. C. buses and battery chargers are operable. One battery charger or battery may be inoperable for 24 hours provided conditions 1 through 4 below are satisfied.

* * *

- "3) Both diesel-generators and their associated essential 480v buses are operable."

On September 22, 1983, at 7:00 a.m. MDT, with reactor power at 66%, during a review of the station logs, the SRI determined that D/G Set 1A had been declared inoperable at 9:00 a.m. MDT on September 21, 1983, and returned to service at 4:53 p.m. MDT, on September 21, 1983. Apparently during the start of the weekly D/G Operability Surveillance SR 5.6.1a-W, 1A D/G set was stopped due to a potential engine overheating problem resulting from Temperature Control Valve TCV-4267 failure to open. Subsequent troubleshooting verified the operability of TCV-4267 at approximately 2:15 p.m. MDT, that same day. However, the 1A D/G set was subsequently stopped due to governor and vibration problems. Apparently at sometime during this trouble shooting period the shift supervisor declared 1A D/G set inoperable and entered this as a late entry in the station logs back to 9:00 a.m. MDT. The governor was repaired and 1A D/G set was returned to service. The 1B D/G set was then started and the surveillance was completed at 10:50 p.m. MDT, September 21, 1983.

From a review of the station logs and from discussions with operations personnel on duty at the time of this event, the SRI determined that the operability of the other (1B) D/G set had not been demonstrated upon finding 1A D/G set inoperable. The SRI considers this as a failure to comply with the action statement requirements of LCO 4.6.1 for having one D/G set inoperable as quoted above.

The SRI informed the licensee of the above determination. The licensee stated that the action statement does not apply to the situation where a D/G set is found inoperable due to the words, ". . . started immediately prior to taking the affected . . . out of service to verify their operability" The licensee has interpreted this to mean that only prior to scheduled removal of a D/G set from service can one start the other D/G set and verify its operability, and if for some reason a D/G set is found inoperable during a routine surveillance or some other means for which inoperability was not scheduled, then compliance with the words, ". . . immediately prior to taking . . . out of service," could not be complied with. The SRI informed the licensee that this interpretation is contrary to the NRC's established policy requirements for reactor power operation with degraded essential trains.

From a review of previous LER's concerning D/G set inoperability it appeared that the licensee's interpretation had been consistent except for LER 81-057 in which the licensee stated,

"On September 8, 1981, with the plant operating at 70% power and 239 MWe, the weekly surveillance test was run on "B" diesel generator unit. At the end of the two hour surveillance run, operations personnel observed smoke from the bearing housing between the clutch of "D" engine and the generator. A Plant Trouble Report was issued, and the engine was cleared to maintenance personnel at 1430 hours on September 8, 1981.

"LC0 4.61 allows for one diesel generator unit to be inoperable for up to seven days (total for both) during any month, provided the operability of the other diesel generator set is demonstrated and all essential busses are operable. In this instance, all essential busses were operable and the "A" diesel generator unit surveillance testing had been successfully completed immediately prior to testing of the "B" diesel generator unit."

It appears that for this event, the licensee identified 1B D/G set as inoperable; did not have to test the other D/G set since it had previously been verified operable; and then repaired 1B D/G set. From the wording of the other LER's, it was not clear as to how the operability of the other D/G set was determined. (i.e. some contained the statement, "The "B" diesel generator set was operable during this occurrence," Others were events where 1B D/G set was found inoperable but a satisfactory surveillance test had just previously been completed on 1A D/G set.)

Also, on September 23, 1983, at 2:05 p.m. MDT, the "A" D/G set was taken out of the auto/independent mode to facilitate vibration testing and returned to auto/independent at 3:05 p.m. MDT, that same day without being considered inoperable and without testing the operability of the other D/G set. This appears to be inconsistent with the licensee's previous interpretation on August 3, 1983, concerning the auto start function as discussed previously. However, the licensee stated that this was considered preventive maintenance and in accordance with LCO 7.5, "Reporting Requirements," which states, in part,

"b. Thirty Day Written Reports

The reportable occurrences discussed below shall be the subject of written reports to the appropriate NRC Regional Administrator within thirty days of occurrence. . . ."

* * *

- "2. Conditions leading to operation in a degraded mode permitted by a limiting condition for operation or plant shutdown required by a limiting condition for operation.

"Note: Routine surveillance testing, instrument calibration, or preventative maintenance which require system configurations, as described in items b.1. and b.2., need not be reported except where test results themselves reveal a degraded mode as described above."

was not considered a degraded mode, therefore, not requiring an operability verification of the other D/G set.

The above has been discussed with the licensee. The licensee has been informed that the failure to verify the operability of the alternate D/G set upon discovery that the other D/G set was inoperable is considered a violation (8325-02).

A meeting occurred on October 12, 1983, at 12:00 CDT, between the licensee and NRC Region IV staff members to discuss a potential enforcement action related to the out-of-service D/G set and failure to verify operability of the backup D/G set. The NRC Region IV staff determined that, based on the licensee's previous LCO 4.6.1 interpretation history, sufficient information did not exist which should have alerted the licensee that they

were in an action statement condition, however, the staff did consider that the failure to test the operability of the alternate D/G set is in violation of Technical Specification requirements. The licensee agreed on the following interim immediate corrective actions to precede a future Technical Specification change:

- . When a D/G set is found or rendered inoperable, the other D/G set shall be tested within 1 hour. This satisfies the immediate test required by LCC 4.6.1.
- . If the second D/G set has been tested for operability and determined to be operable within the preceding 8-hour period from the time of finding the first D/G set inoperable, the second D/G set can be assumed to be operable for the purposes of LCO 4.6.1. This does not relax the normal surveillance interval.
- . The length of time that a D/G set should be operated to prove operability shall be determined by your plant operations review committee (PORC) based on recommendations by the D/G manufacturer. This determination shall be forwarded to the Regional Administrator.

In regard to performing the oil cleanup evolution previously discussed, the NRC Region IV staff considers this to be preventive maintenance as defined in LCO 7.5, and placing the affected D/G set in manual/independent to perform this evolution without previously testing the other D/G set is acceptable provided the following requirements are established:

- . Upon completion of this evolution which should take no longer than 1 hour, the D/G set is immediately returned to normal.
- . Positive control is maintained by documenting status in the station logs and by reactor operator awareness.
- . This period of inoperability is considered part of the 7 day LCO 4.6.1 outage allowance and tracked as such.

The SRI had no further questions in this area.

4. Surveillance (Monthly)

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

SR 5.8.1abc-M Radioactive Gaseous Effluent System Test (Release 1002)

SR 5.4.1.1.7a-M Primary Coolant Moisture Scram Test

SR 5.1.2.bd-A Reserve Shutdown Hopper Low Pressure Calibration

No violations or deviations were identified.

5. Maintenance (Monthly)

The SRI reviewed records and observed work in progress to ascertain that the following maintenance activities were being conducted in accordance with approved procedures, Technical Specifications, and appropriate Codes and Standards. The following maintenance activities were reviewed and observed:

CN 1401/CWP 83-99 Installation of A High Range Area Radiation Monitor on East Wall of Refueling Floor

PTR 9-337 PV-21243 Calibration Check In Accordance With RP-90, "Masor-eilan Valves and Controllers"

PTR 9-385 Replace PS-1106-36 Reserve Shutdown Pressure Switch In Accordance With RP-8, "Calibration of DA, DS, and DR Mercoid Switches"

PTR 9-378 V-21542 Loop I Pelton Relief Valve Repair In Accordance With MP 16-3, "Maintenance and Repair of 1900 Series Consolidated Safety Relief Valves"

No violations or deviations were identified.

6. Engineering Safety Features

The SRI verified the operability of a selected portion of an engineered safety features (ESF) system by performing a complete walkdown of the auxiliary bearing water system that supplies the bearing water requirements for Circulator C-2101. This is a part of the licensee's forced circulation emergency cooling ESF system. The following checks were made:

- . Confirmed that the licensee's system lineup procedures match plant drawings and the as-built configuration.
- . Verified that valves were in the proper position, power was available, and valves were locked as appropriate. Compared local and remote position indication.

- . Looked for equipment conditions and items that might degrade performance (hangers and supports are operable, housekeeping, etc.).
- . Inspected the interior of some breakers and electrical or instrumentation cabinets for debris, loose material, jumpers, evidence of rodents, etc.
- . Verified that instrumentation was properly valved in and functioning. Calibration dates were appropriate.

The following problems were reported to the licensee and are considered as an open item (8325-03):

- . Areas on Level 2 and extending down to Level 1 of the reactor building where cable trays, piping, and instrumentation are soaked and dripping hydraulic oil, apparently leaking from hydraulic valve operators. This appears to be a continuing problem for which good housekeeping could correct.
- . PDV-2191, LC-21303, and PDIS-21399 were not on the master calibration list dated August 1, 1983.
- . PDT-2175-2, PDT-2176-2, PDT-2177-2, and PDT-2178-2 were previously removed, but plant drawings do not reflect this.
- . Standard Operating Procedure 21-02, Issue 56, lists P-2105 as powered from the wrong bus.

Other minor problems such as valve and instrumentation labeling deficiencies were also reported to the licensee and corrective action is being followed up by the SRI.

No violations or deviations were identified.

7. Report Reviews

The SRI reviewed the following reports for content, reporting requirement, and adequacy:

Twenty-eighth Startup Report for the period June 23, 1983, through August 22, 1983

Monthly Operations Report for the month of August 1983

Environmental Radiation Surveillance Program - Summary Report for the Period January 1, 1983, through June 30, 1983

The SRI informed the licensee that the environmental radiation surveillance program report contained a Table III.A.1 titled, "Environmental Radiation Surveillance Program Schedule," which has not been approved by the NRC and should be removed and replaced by an approved table in the next report. Also, the SRI pointed out that Table III.B.1 does not contain a code description for the letter "M".

No violations or deviations were identified.

8. IE Bulletins

The SRI verified by record review, observation, and discussion with the licensee, the action taken in response to IE Bulletins.

The following bulletin was reviewed:

(Closed) IE Bulletin 83-06: Nonconforming Material Supplied by Tube-Line Corporation Facilities at Long Island City, New York; Houston, Texas; and Carol Stream, Illinois. The licensee's letter P-83316 dated September 19, 1983, states that Tube-Line Corporation has never supplied materials to PSC for use at FSV in a safety-related system.

No violations or deviations were identified.

9. Review of Licensee Event Reports (LER)

The SRI 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 SRI has been awaiting final completion of the licensee's corrective action on a majority of the following LER's prior to this closeout review. Based on this review of the licensee's reportable occurrence (RO) closeout book, the SRI considers the following RO's closed:

77-34	80-35	82-043
77-43	80-38	82-045
78-27	80-41	82-047
79-32	80-51	82-050
79-56	80-72	82-052
80-01	81-006	82-053
80-07	81-016	83-001
80-16	81-024	83-002
80-20	81-039	83-003
80-26	81-047	83-006
80-28	82-022	83-007
80-34	82-039	83-009
		83-010

No violations or deviations were identified.

10. Fuel Shipping Cask (FSC) Receipt

On September 23, 1983, at 10:30 a.m. MDT, the licensee informed the SRI of the arrival of a General Atomic Technologies (GA) FSC on site without the required shipping papers for transportation of licensed material. The FSC was onsite for a prearranged FSC leak test. The following is a list of the SRI's findings in this area:

- . FSC accepted onsite at 8:00 a.m. MDT, September 23, 1983. Health Physics personnel identified the lack of shipping papers after the FSC was brought into the licensee's protected area.
- . The shipper was Chem-Nuclear Systems, Inc. and shipment originated from Barnwell Waste Management Facility Barnwell, South Carolina.
- . The carrier was Tri-State Motor Transit. Date shipped was September 13, 1983, with approximately 1-week layover at their Kansas City, Missouri terminal.
- . GA Trailer Number 106 with California License Number UV 4223.
- . Tri-State Tractor Number 403 with Illinois License Number 7648 ILL.
- . FSC labeled Radioactive Yellow-II. Label was not marked with contents, number of curies, or transport index.
- . Trailer placarding was covered upon arrival.
- . Bill of Lading 620158 with shipment date of September 22, 1983, was apparently hand written by the driver upon arrival.
- . FSV received shipping papers from Kansas City, Missouri, on September 26, 1983, which consisted of:

Bill of Lading 620158 (typed) with shipment date of September 13, 1983. Shipper's certification was not signed as required.

Instructions to drivers of exclusive use vehicles dated August 30, 1983.

Radioactive shipment record form from Barnwell Waste Management Facility dated August 30, 1983.

Violations of the Department of Transportation regulations were apparent and the SRI notified the appropriate NRC Regional Offices.

The SRI had no further questions in this area.

11. Building 10

Current status of construction as reported by the licensee: (Information Only)

DESCRIPTION

FOR WEEK ENDING

Structural

Concrete placed for the floor slabs at Elevation 4800' and Elevation 4811'. Started formwork for the walls to Elevation 4854". Set base plates for the walk-over structural steel. Started structural steel for the Elevation 4824' floor slab.

Electrical

Assembled cable tray hangers. Started installation of power conduit.

HVAC

Moved duct work into the building.

September 2, 1983

Structural

Set forms and placed rebar for Elevation 4854' walls. Installed decking rebar and embedments for the floor slab at Elevation 4824". Erected the first lift of structural steel for the walk-over structure.

Electrical

Installed power conduit, lighting and cable tray hangers below Elevation 4800' and Elevation 4811' slabs. Continued welding tray hangers to base plates.

HVAC

Started installation of duct work below the Elevation 4800' and 4811' floor slabs.

September 9, 1983

Structural

Final wall concrete was placed. Concrete was placed on slab Elevation 4824'.

September 16, 1983

Structural

Concrete placed on floor slab Elevation 4835'-6". Roof structural steel was started. Walkover structure was completed. Exterior siding (girts and insulation) was started.

September 25, 1983

No inspections were performed in this area by the SRI. Construction progress is provided for information only. The SRI reviewed Commerical Testing Laboratories Report, "Ultrasonic Pulse Velocity Tests South Wall of the Building 10 Addition Fort St. Vrain Nuclear Power Plant Platteville, Colorado Job No. Q-3403," dated September 14, 1983.

The SRI had no further questions in this area.

12. Exit Interview

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 PSC staff. At the interviews, the SRI discussed the findings indicated in the previous paragraphs. The licensee acknowledged these findings.