

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-267/88-11 Operating License: DPR-34

Docket: 50-267

Licensee: Public Service Company of Colorado (PSCo)
2420 W. 26th Avenue, Suite 15c
Denver, Colorado 80211

Facility Name: Fort St. Vrain Nuclear Generating Station (FSV)

Inspection At: FSV, Platteville, CO 80651

Inspection Conducted: April 25-29, 1988

Inspector: for W. L. Fisher 5/25/88
C. A. Hackney, Emergency Preparedness Date
Specialist

Accompanying
Personnel: D. Schultz, Comex Corporation

Approved: W. L. Fisher 5/25/88
W. L. Fisher, Chief, Nuclear Materials and Date
Emergency Preparedness Branch

Inspection Summary

Inspection Conducted April 25-29, 1988 (Report 50-267/88-11)

Areas Inspected: Routine, unannounced inspection of the emergency response program, including training (knowledge and performance of duties), emergency facilities, equipment, instrumentation, and supplies.

Results: Within the areas inspected, two violations were identified.

DETAILS1. Persons ContactedPSCo

R. Williams Jr., Vice-President, Nuclear Operations
 *C. Fuller, Manager, Nuclear Production
 *F. Novachek, Technical Administrative Services Manager
 *P. Tomlinson, Manager, Quality Assurance
 *F. Borst, Nuclear Training Manager
 *M. Denniston, Shift Supervisor
 *T. Schleiger, Health Physics Supervisor
 *D. Weber, Staff Assistant to Station Manager
 W. Ashmore, Senior Reactor Operator Training Instructor
 T. Dice, Shift Supervisor
 R. Kevin, Shift Supervisor
 G. Moore, Shift Supervisor
 R. Shafer Jr., Shift Supervisor
 S. Shafer, Shift Supervisor
 J. Weller, Shift Supervisor
 G. Moore, Shift Supervisor
 J. Maynard, Senior Reactor Operator
 S. Koleski, Senior Reactor Operator
 M. Frazier, Senior Reactor Operator
 T. Hackett, Senior Reactor Operator
 P. Morgan, Reactor Operator
 M. Kasten, Reactor Operator
 C. Evans, Reactor Operator
 B. Vandenberg, Reactor Operator
 D. Johnson, Reactor Operator
 T. Virgil, Reactor Operator
 D. Dacatoire, Reactor Operator
 D. Trumblee, Reactor Operator
 E. Hansen, Reactor Operator

NRC

*P. Michaud, Resident Inspector

*Denotes attendance at the exit interview.

2. Emergency Facilities, Equipment, Instrumentation, and Supplies (02.02)

The NRC inspector reviewed key facilities and equipment to determine whether the facilities were maintained and whether any facility changes had been incorporated into the Emergency Plan and Radiological Emergency Response Plan (RERP). Additionally, facility, equipment, and supply changes were reviewed for adverse effect on the emergency preparedness program.

Emergency facilities, equipment, instrumentation, and supplies were reviewed to determine the state of readiness and accessibility. Selected communication and emergency vehicle equipment was tested for operability. All selected equipment functioned as required. All documents in the emergency response facilities appeared to have been maintained and updated according to procedure.

No violations or deviations were identified in this program area.

3. Training (02.04)

The NRC inspector reviewed the documents listed below and interviewed licensee representatives to determine whether emergency response personnel understood their emergency response roles and could perform their assigned functions in accordance with the requirements of 10 CFR 50.54(q), which requires that a licensee shall maintain in effect emergency plans which meet the standards of 10 CFR 50.47(b)(1). Each of the five teams interviewed was given an emergency scenario that simulated plant and/or radiological conditions of significance to warrant declaring one of the emergency classes. Interviews were conducted with five emergency response teams. Four teams consisted of four persons; one team consisted of two persons. A total of 18 emergency response personnel were interviewed.

Documents Reviewed:

FSV Project Personnel Training and Qualification Programs
 Training Procedure - Radiological Emergency Plan
 Response to Emergencies (PT 004.03)
 RERP Overview (PT 007.02)
 RERP, Control Room
 RERP, Technical Support Center
 RERP Communications - Administrative (PT 026.00)
 Selected emergency response personnel training records
 Emergency Procedure - B-1
 Emergency Procedure - E
 Standard Operating Procedure - 12-01
 Abnormal Operating Procedure - 12-05
 Emergency Procedure - Class
 Health Physics Procedure - 56

The NRC inspectors determined that a formal emergency training program had been established. Training records for selected emergency response team members were reviewed to determine whether personnel had received required training. All selected personnel had received training in the time specified by the licensee.

During the inspection on April 25-29, 1988, a regional inspector and an NRC contractor designed a plant-specific walk-through to test the ability of control room senior operators to detect and classify accident

conditions, to notify offsite authorities, and to formulate protective action recommendations. The inspectors preceded each walk-through with a series of questions to test the licensee's understanding of basic emergency response concepts. The main objective of these walk-throughs, which lasted approximately 2 hours, was to verify that operating shift personnel were capable of adequately implementing their emergency plan. The walk-throughs were performed in the Technical Support Center, with all reference material normally available to the crews in the control room. The same accident scenario was used for each team to obtain standardized results. The inspectors invited members of the plant staff to attend and observe the walk-throughs.

The following findings resulted from the interviews and walk-throughs:

- . One of five teams elected to insert reserve shutdown reactivity locally in response to a scram without shutdown due to rods stuck in the out position (140 inches). As a consequence, the reactor continued to operate at power without primary or secondary flow for approximately 22 minutes before shutdown could be initiated.
- . In spite of High Activity Alarms, one shift supervisor declared that the plant was "not releasing yet," because Reactor Building Area Radiation Monitors were normal except in areas of ventilation exhaust piping. Recognition of the condition was delayed approximately 8 minutes until the inspector prompted the shift supervisor into correct evaluation of the problem.
- . All teams failed to exhibit command and control of resources and activities. Shift supervisors became engrossed in detailed in-plant manipulations, performing notifications, and completion of mundane administrative detail. As a consequence, important issues such as classification and evaluation of important plant parameters were not addressed or handled in a timely manner.
- . Four of five teams failed to classify properly the Emergency Action Level (EAL) initiating condition of "loss of normal ability to place the reactor in a subcritical condition by scram of the control rods." (Table 4, EAL 9, RERP-CR)
- . One of the five teams failed to classify as a general emergency a stack effluent release rate resulting in greater than 1 R/hr at the Exclusion Area Boundary.
- . Two of five teams improperly interpreted main stack effluent radiation monitor readings of counts per minute (cpm) as a release rate, and improperly evaluated the EALs associated with the monitor readings.
- . None of the five teams demonstrated an understanding of process radiation monitor readings in counts per minute (cpm), instrument sensitivity in microcuries per cc per cpm, and the mathematical

manipulation required to obtain release concentration and release rate. The EAL tables do not alert the user to the fact that instrument readings must be converted to use the listed EAL.

Three of five shift supervisors entered wind directions improperly on notification messages.

Two of five persons assigned to perform dose calculations on the data logger reversed (upon entry) instrument readings and instrument sensitivities. One operator failed to recognize the error and, when prompted about the error by the inspector, was unable to recover the dose calculation. Neither the operator nor the shift supervisor recognized the large inconsistency between stack release activity and the computed dose rate. One operator did not enter observed stack flow rate.

The data logger computer is not user friendly. For example, to enter delta T (stability), the operator must enter a plus or minus sign with the value. No other positive values require a plus sign.

Data logger operators did not understand the 2-hour default value for release time.

One shift supervisor ordered a reactor coolant sample without warning the technician of expected very high radioactivity.

One shift supervisor had difficulty in relating dose rates, as measured in the environs, to classification. Until prompted by the inspector, the shift supervisor was unsure of his authority to make classifications on such readings.

Emergency procedure(s) continuity, at least for the case of scram without shutdown, is inadequate. If the rods are stuck out on a scram signal, it is not possible for the operator to track procedural steps through to taking the action of inserting reserve shutdown activity.

EALs and classification tables are included in at least three different sets of procedures:

- *RERP-CR, Control Room Procedure
- *Emergency Procedure - Class, Emergency Procedure Classification
- *Each individual Emergency Procedure

As a consequence, the operators are faced with sorting through the various locations to make classifications, and the emergency

operating procedures are unnecessarily cluttered with information that is of little use and, in some cases, is incorrect.

This is an apparent violation of NRC regulatory requirements 10 CFR 50.54(q) and 50.47(b). (267/8811-01)

One violation and no deviations were identified in this program area.

4. Notifications (Offsite)

The NRC inspector discussed with licensee representatives and reviewed documentation of licensee events following the reactor manual scram and radiological release on April 4, 1988. The inspector reviewed licensee notification forms that included RERP-CR, Attachment B, Issue 11, page 15 of 22, entitled "Emergency Event Notification Form - Sheet 1." The inspector determined from interviews of licensee personnel that the reactor manual scram occurred at 2:21 p.m. and that the radiological monitor RT 7324-1 indicated upscale at 2:15 p.m. The emergency event notification form, dated April 4, 1988, indicated that an unusual event (Notification of Unusual Event) was declared at 5:10 p.m. Weld County was notified at 5:25 p.m. and the state answering service was notified at 5:35 p.m. The notification form indicates that the state was notified at 5:45 p.m.; however, review of the state's answering service records indicated that the answering service was notified at 5:35 p.m. The state representative who was notified at 5:40 p.m. verified the call by calling the control room at 5:45 p.m. The state was, therefore, notified at 5:35 p.m., 25 minutes following the declaration of the Notification of Unusual Event, contrary to 10 CFR 50, Appendix E IV D.3, which requires the state to be notified within 15 minutes following the declaration of an emergency.

This is an apparent violation of NRC requirements (267/8811-02).

One violation and no deviations were identified in this program area.

5. Exit Interview

The NRC inspectors met with the NRC resident inspector and licensee representatives denoted in paragraph 1 on April 29, 1988, and summarized the scope and findings of the inspection as presented in this report. The licensee had provided backshift training for control room personnel in the areas of emergency classification and notification, and dose assessment. Additional training was to be provided during the weekend and following week until all the remaining control room personnel had received additional training in these areas.