

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-267/84-19

License: DPR-34

Docket: 50-267

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: August 13-17, 1984

Inspector:

J. L. Montgomery  
J. L. Montgomery, Emergency Preparedness Analyst  
(Team Leader)

10/11/84  
Date

Other Accompanying Personnel:

L. Cohen, NRC  
M. Soleburg, NRC  
W. Herrington, Battelle Pacific Northwest Laboratories  
J. Myers, Battelle Pacific Northwest Laboratories  
G. Bryan, Comex  
K. Lopper, Comex

Approved:

Charles C. Hochman for J. Baird  
J. B. Baird, Chief, Emergency Preparedness Section

10/12/84  
Date

R. E. Ireland  
R. E. Ireland, Chief, Special Projects and  
and Engineering Section

10/16/84  
Date

Inspection Summary

Inspection Conducted August 13-17, 1984 (Report 50-267/84-19)

Areas Inspected: Announced emergency preparedness inspection of the licensee's implementation of the emergency plan and procedures during the annual emergency response exercise. Areas inspected included the licensee's performance in the control room, technical support center (TSC), personnel control center (PCC), forward command post (FCP), and offsite monitoring teams. Also inspected was the licensee's distribution of changes to the Radiological Emergency Response Plan (RERP). The inspection involved 276 inspector-hours onsite by seven NRC inspectors.

Results: Within the six areas inspected, one violation was identified (improper distribution of RERP amendments to the NRC, paragraph 7).

DETAILS

1. Persons Contacted

Public Service Company of Colorado

O. R. Lee, Vice President Electric Production  
\*C. H. Fuller, Technical and Administrative Services Manager  
\*D. Warembourg, Manager, Nuclear Production  
\*M. McBride, Station Manager  
\*J. Gahm, Quality Assurance Manager  
\*T. Borst, Radiation Protection Manager  
J. Switzer, Training Instructor  
\*L. Singleton, Manager, Quality Assurance  
\*M. Ferris, Quality Assurance Operations Manager  
F. Novacheck, Technical Services Supervisor  
D. Hood, Shift Supervisor  
W. Crain, Maintenance Supervisor  
B. Birchfield, Results Supervisor  
\*S. Johnson, Technical Services Engineer  
\*S. Willford, Training Supervisor  
\*J. Sills, Reactor Engineer  
\*T. Schleiger, Health Physics Supervisor  
P. Bollig, Nuclear Document Specialist  
A. Kitzman, Nuclear Document Specialist  
W. Franek, Superintendent of Operations

Other Personnel

J. Baker, Federal Emergency Management Agency  
D. Lawton, Colorado Division of Disaster Emergency Services  
B. Smith, Colorado Department of Health  
M. Hanrahan, Colorado Department of Health

NRC

\*G. L. Plumlee, Senior Resident Inspector

\*Denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

Open items from the 1983 exercise and previous routine unannounced inspections were reviewed by the NRC inspectors. The following is a disposition of those items:

(Closed) Open Item (267/8201-30): In accordance with 10 CFR 50, Appendix E, IV-F, lesson plans for local offsite support groups had been written and implemented by the training department in September 1983. The

Lesson plans were reviewed by the NRC inspector and were determined to be adequate.

(Closed) Open Item (267/8327-01): An evaluation of the shift supervisor's training program had been completed by the training department in March 1984. Lesson Plan No. 3, "Organizational Control of Emergencies," was revised in March 1984 to provide additional emphasis on shift supervisor responsibilities and practical demonstration.

(Closed) Open Item (267/8327-02): Procedures RERP-CR, "Control Room Procedure," and RERP-HOME, "Home Packet for Off-Shift Notifications," have been revised to include instructions specifying the 15 minute notification requirement to offsite emergency response authorities.

(Closed) Open Item (267/8313-01): The licensee's quality assurance staff included failure to follow procedures in their comments following the June 1983 exercise. The licensee's management evaluated the cause for failure to follow procedures and wrote two memorandums to the plant staff dated August 17, 1983, and July 31, 1984. The training supervisor indicated to the NRC inspector that additional emphasis was included in lesson plans and training sessions for members of the licensee's emergency organization.

(Closed) Open Item (267/8313-03): During the exercise a member of the control room staff was identified as the person who would continuously man the emergency notification system telephone.

(Closed) Open Item (267/8313-04): During the exercise the NRC inspectors were present in the control room and central alarm station to observe accountability procedures. The licensee completed an accurate accountability and reported the results to the shift supervisor in less than 30 minutes.

(Closed) Open Item (267/8313-05): During the exercise the NRC inspector observed the licensee's health physics supervisor conduct a briefing of the PCC monitoring team.

(Closed) Open Item (267/8313-06): During the exercise the NRC inspector observed PCC personnel performing operational checks on equipment and instruments to be used by monitoring teams.

(Closed) Open Item (267/8313-07): The PCC in use during the exercise (training center PCC) was observed by the NRC inspector to contain a full complement of offsite monitoring equipment as specified in Procedure RERP-FIELD, "Field Monitoring Procedure."

(Closed) Open Item (267/8313-08): During the exercise the NRC inspector observed the health physics supervisor and radiation chemist providing health physics guidance to the field monitoring teams.

(Closed) Open Item (267/8313-09): The field monitoring teams in the PCC were observed to conduct operational checks on instrumentation to be used during the exercise.

3. Control Room

The scenario was promptly begun at 4:00 a.m. by the licensee's exercise controller. The initiating event was a leak in the A-train helium purification cooler. The associated cooling water system surge tank vented to the gas waste system due to a broken valve stem on the surge tank bypass valve. Following additional failures of other plant systems, a radioactive release occurred through the plant stack resulting in a site area emergency declaration at 4:26 a.m., and a general emergency declaration at 4:34 a.m. The control room staff used emergency procedures and their knowledge of the plant to actively troubleshoot the accident causes and formulate corrective measures. Several workable solutions were proposed by the operators and subsequently rejected by the exercise controller in order to allow the scenario to continue.

The shift supervisor sounded a radiation alarm and announced the first emergency classification (site area emergency) over the plant Gaitronics system but gave no information regarding the condition of the plant. Subsequent changes in emergency classification and plant status were not announced to the emergency organization. When questioned by the NRC inspector between 7:00 and 8:00 a.m., emergency workers in the control room, TSC, and PCC could not accurately describe the plant status and stated they were unsure about which emergency class was in effect.

Procedure RERP-CR and Section 5 of the licensee's emergency plan assign initial accident classification responsibilities to the on-duty shift supervisor when assuming the role of emergency coordinator. Contrary to this responsibility, the shift supervisor did not appear to evaluate or discuss the emergency class with anyone and merely nodded agreement when informed of the emergency class by the reactor operator who obtained source term data from the data logger computer. The shift supervisor appeared to be involved with the details of completing procedural forms in Attachments 3 and 4 of Procedure RERP-CR during the first 60 minutes of the exercise and, therefore, was unable to perform his accident classification responsibilities.

At 4:51 a.m., the NRC inspector noted that the shift supervisor called the Public Service Company telephone operator and instructed her to initiate the Fort St. Vrain emergency call list. The information on page 1 of Attachment 4 of the RERP-CR was not given to the telephone operator as required by RERP-CR and this omission resulted in delaying plant emergency staff augmentation.

At 4:53 a.m., the shift supervisor notified the Weld County Communications Center and recommended evacuation of the general population in the affected down wind sectors. The NRC inspector noted that the shift

supervisor erroneously informed Weld County authorities that the general emergency was declared at 4:00 a.m.

A Weld County representative asked the shift supervisor for the verification telephone number. The number was provided, thereby defeating the purpose of verification callback and eliminating verification credibility.

Despite the protective action recommendation provided to Weld County at 4:53 a.m., the TSC director was informed by the shift supervisor that no protective action recommendations had been given to the state of Colorado (Weld County notified the state immediately following the 4:53 a.m. call from the shift supervisor). At the NRC senior resident inspector's request, the control room director read Procedure RERP-CR, Attachment 4, page 1, documenting that protective action recommendations had been provided.

The technical assistant arrived in the control room at 4:54 a.m., but did not formally report to the shift supervisor. At this time, the shift supervisor needed assistance with the details of filling out forms and communications.

At 5:00 a.m., the superintendent of operations arrived in the control room and formally announced he was assuming the position of control room director. This appeared to provide needed leadership in the control room and permitted the shift supervisor to complete the attachments to Procedure RERP-CR. The NRC inspector noted that completion of these attachments could be simplified if the data logger printouts were in a form that permitted data to be easily and accurately transferred to the attachments.

The TSC director arrived at the TSC at approximately 5:53 a.m., but no announcement was made that he was activating the TSC and thereby assuming the position of emergency coordinator. When the NRC inspectors questioned emergency personnel as to who was in charge (i.e., emergency coordinator), various answers were given including "the shift supervisor," "corporate emergency director," "control room director," and "TSC manager."

At 5:26 a.m., the Public Service Company operator called the control room and asked for the location of the PCC. This should have been provided by the shift supervisor at 4:51 a.m. in accordance with Procedure RERP-CR, Attachment 4.

No violations or deviations were identified. However, the following open items were discussed with the licensee during the exercise critique:

(Open) Open Item (267/8419-01): The licensee should develop a procedure to keep emergency response personnel periodically informed as to the status of the plant and the emergency classification currently in effect as declared by the emergency coordinator.

(Open) Open Item (267/8419-02): Through training or other methods, persons assuming the emergency coordinator role should develop the ability to exercise effective command and control over their respective emergency response facility and delegate to other qualified persons the numerous detailed emergency response tasks which must be performed.

(Open) Open Item (267/8419-03): Despite being previously listed as an open item and receiving considerable management attention and personnel training, the licensee's emergency organization continues not to follow emergency procedures written for the control room, TSC, and PCC. The licensee should reevaluate this problem and develop adequate solutions.

#### 4. Technical Support Center

A habitability determination by the licensee in the TSC was not observed by the NRC inspector. The air sampler was not in operation when the NRC inspector arrived at the TSC. TSC staff attempted to operate the particulate, iodine, and noble gas monitor but were unsuccessful.

The TSC director did not formally assume his position and did not update the TSC staff on the plant status. It did not appear to be known in the TSC when the FCP was activated or when the vice president, electric production assumed control as the corporate emergency director.

Status boards were not utilized in the TSC and radiation monitoring for contamination upon entering the TSC was inconsistent. Contrary to Procedure RERP-TSC, "Technical Support Center Procedure," dosimeters were issued to only about half of the TSC personnel. Accountability of TSC personnel was not performed.

TSC communications with the PCC and FCP were observed to be good with briefings periodically held in accordance with Procedures RERP-TSC, PCC, and FCP.

The first TSC dose projection, utilizing Procedure RERP-DOSE, "Offsite Dose Calculation Methodology," data sheet 3, was completed at 6:30 a.m., or approximately 2½ hours after the radioactive release began from the gas waste vacuum tank and through the plant stack.

At 7:53 a.m., the first and only radiation monitoring team was dispatched by the TSC director approximately 3½ hours after the radioactive release began.

No violations or deviations were identified. However, the following open item was discussed with the licensee during the exercise critique:

(Open) Open Item (267/8419-04): A member of the TSC staff should be assigned to maintain up-to-date status boards and all TSC staff members

should be instructed on proper radiation monitoring for contamination and the use of dosimeters.

5. Personnel Control Center

Because of communication and notification delays previously described in this report, the activation of the PCC was delayed.

Effective management of the PCC was not evident during the exercise and the communication between the PCC director and his staff was considered to be poor. PCC personnel were observed to be unaware of the plant status and emergency class throughout the exercise. The NRC inspector noted that the PCC director attempted to perform many detailed tasks without delegating responsibilities to other PCC staff. This resulted in ineffective control and coordination of PCC tasks.

Contrary to paragraph 2.6 of Procedure RERP-PCC "Personnel Control Center Procedure," accountability in the PCC was not maintained. The NRC inspector observed several personnel leaving the PCC without signing out or otherwise being accounted for.

Contrary to paragraph 2.5 of Procedure RERP-PCC, habitability was not adequately determined. An RM 14/15 "frisker" was the only instrument used to determine habitability. No air samples were taken despite the potential for airborne contamination from iodine or particulate releases and possible contamination from teams who would normally pass from the plant to the PCC. Since the PCC staff was not informed of the changing plant status, air samples could also have been justified as a precautionary measure.

Contrary to paragraph 2.7 of Procedure RERP-PCC, the PCC director did not designate anyone as the personnel assignment controller. Consequently, Procedure RERP-PCC, Sections 2.7.1, "Equipment and Datasheet Distribution," 2.7.4, "Accountability of All Onsite Personnel," and 2.7.5, "Master Log Recording," were not performed.

Contrary to paragraph 2.9 of Procedure RERP-PCC, the PCC director did not notify individuals living on plant property until approximately 4 hours after the radioactive release and then only after a TSC staff member requested that this be done (8:14 a.m.).

Contrary to paragraph 2.11.1 of Procedure RERP-PCC, a security guard was not observed in the PCC until 4 hours after the shift supervisor declared a site area emergency.

The monitoring team which was dispatched at 7:53 a.m. was not observed recording air sample data such as location, time, and volume. Directions given to the team by TSC personnel were not written down causing some confusion in locating sampling sites. The Colorado State University field monitoring team was observed by the NRC inspector to be using maps with sector designations different from those used by the licensee. The



university team also did not appear to be equipped with protective clothing to wear while sampling in potentially contaminated areas.

The NRC inspector noted that the physical design and location of PCC functions could be improved to allow more efficient management of personnel and contamination problems. For example, the decontamination area was located in the center of the training building, which decreased its effectiveness and interfered with PCC operations. The decontamination area also did not include showers. Access to the PCC was not controlled either by locking unused doors or posting security guards. Personnel radiation surveys were not performed on a step-off pad at the control point and the carpet in this area was used.

No violations or deviations were identified. However, the following open items were discussed with the licensee during the exercise critique:

(Open) Open Item (267/8419-05): Through training or drills, the PCC director should develop the ability to exercise effective command and control over the PCC and delegate to other qualified persons the numerous detailed emergency response tasks which must be performed.

(Open) Open Item (267/8419-06): Air sampling should be included in all habitability surveys in the control room, TSC, and PCC.

(Open) Open Item (267/8419-07): The PCC design and layout should be reevaluated to more adequately provide for radiation monitoring and decontamination.

#### 6. Forward Command Post

The NRC inspector observed that the FCP was activated and managed in an efficient manner. As with most emergency organization staff, the NRC inspector noted that the corporate emergency director was delayed in arriving at the FCP due to the communication problems between the control room and the licensee's telephone operator. The corporate emergency director clearly announced the FCP activation and periodically briefed his staff as to plant status. All RERP-FCP procedures reviewed by the NRC inspector were correctly followed and the corporate emergency director delegated most of the emergency tasks and communications to his FCP staff, enabling him to maintain overall command and control of the FCP and the emergency. The FCP staff were knowledgeable and well trained on their procedures and forms and effectively carried out their responsibilities. At no time at the FCP did it appear that the corporate emergency director or his staff were uninformed of plant status and emergency class.

The NRC inspector noted that the status boards in FCP had been enlarged and contained more space for data than the boards used during the 1983 exercise. However, it was observed that the status boards were difficult to read due to the use and erasure of marker pen. The status boards would

be more visible to the FCP personnel if positioned higher on the wall to preclude interference by personnel who may be standing in the room.

No violations or deviations were identified.

7. RERP Amendments

10 CFR 50.54(q) requires that the licensee submit one copy of changes to the emergency plan within 30 days after the change is made to the NRC Regional Administrator (Region IV) and two copies to the NRC Document Control Desk in Washington, D.C. 10 CFR 50, Appendix E.V, requires submittal of both the emergency plan and implementing procedures under the conditions specified above.

The NRC inspector reviewed the 1984 RERP changes and determined that the following RERP amendments were not submitted to the NRC within 30 days after the change was made:

| <u>RERP</u>             | <u>Effective Date</u> | <u>Date Submitted to NRC<br/>(transmittal letter)</u> |
|-------------------------|-----------------------|---|
| RERP-PCC, Issue 13      | March 15, 1984        | May 30, 1984  |
| RERP-CR-ALERT (deleted) | April 25, 1984        | May 30, 1984  |
| RERP-CR, Issue 1        | April 25, 1984        | May 30, 1984  |
| RERP-MET, Issue 3       | March 15, 1984        | May 30, 1984  |
| RERP-CR-UE (deleted)    | April 25, 1984        | May 30, 1984  |
| RERP, Section 7         | April 2, 1984         | May 30, 1984  |
| RERP, Section 10B       | April 2, 1984         | May 30, 1984  |
| RERP-CORE, Issue 1      | June 1, 1984          | July 25, 1984   |
| RERP-FCP, Issue 10      | June 19, 1984         | July 25, 1984   |

In addition, the NRC inspector determined that although RERP changes were being distributed to several NRC individuals, all RERP amendments for 1984 had not been sent to the NRC Region IV Regional Administrator or the NRC Document Control Desk, Washington, D.C., as required by 10 CFR 50.54(q).

This is a violation. (267/8419-01)

8. Exit Interview

Due to the seriousness and magnitude of problems in following procedures and managing emergency response facilities identified during the exercise, the NRC inspector conducted a meeting with Mr. O. R. Lee, Vice President, Electric Production, and J. Gahm, Quality Assurance Manager on August 16, 1984. Mr. Lee indicated he would be unable to attend the exit meeting on August 17, 1984. The NRC senior resident inspector also attended. During this meeting, the NRC inspector summarized the major deficiencies which were identified by the NRC inspection team and emphasized the concern over the ineffectiveness of management and task delegation by managers and supervisors in the control room, TSC, and PCC. The NRC inspector requested that the licensee be prepared to discuss a corrective action

program at the August 17, 1984, exit meeting to resolve identified problems. Mr. Lee responded that he agreed that numerous problems existed and that the licensee's performance had been poor during the exercise. He emphasized that the plant management was changing and that Mr. Gahm would be responsible for correcting the management deficiencies and other problems identified during the exercise.

On August 17, 1984, an exit meeting was held with Mr. Gahm; Mr. D. Warembourg, Manager, Nuclear Production; and their staffs. A list of attendees is shown in paragraph 1 of this report. At the exit meeting, the NRC inspector summarized the scope and findings of the inspection, and described the management problems and failure to follow implementing procedures observed in the control room, TSC, and PCC. Mr. Gahm responded by stating that because of the change in plant management a training program would be implemented to acquaint personnel with their new assignments and would emphasize the importance of proper management, delegation of tasks, and the need to use and follow implementing procedures.

The NRC inspector also described the violation of 10 CFR 50.54(q), concerning the submittal of RERP changes to the NRC regional and headquarters offices. The manager of nuclear production stated that eight NRC individuals were receiving a copy of RERP amendments. The manager of nuclear production further stated that no personal RERP copies would be issued in the future and that two copies would be sent to the NRC Document Control Desk in Washington, D.C. and one copy to the Region IV Regional Administrator within 30 days of adoption as required by 10 CFR 50.54(q) and 10 CFR 50, Appendix E, V.