

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-267/88-04

Operating License: DPR-34

Docket: 50-267

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

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

Inspection At: FSV, Platteville, Colorado

Inspection Conducted: February 22-26, 1988

Inspectors:

*for* R. E. Ireland  
A. Singh, Reactor Inspector, Plant Systems  
Section, Division of Reactor Safety

3/30/88  
Date

*for* R. E. Ireland  
E. P. Hildebrand, Reactor Inspector, Plant  
Systems Section, Division of Reactor Safety

3/30/88  
Date

Approved:

R. E. Ireland  
R. E. Ireland, Acting Chief, Plant Systems  
Section, Division of Reactor Safety

3/30/88  
Date

Inspection Summary

Inspection Conducted February 22-26, 1988 (Report 50-267/88-04)

Areas Inspected: Routine, unannounced inspection of fire protection/prevention program and implementation.

Results: Within the areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

PSC

- \*H. L. Brey, Manager, Nuclear Licensing and Fuels
- P. M. Burck, Quality Assurance (QA) Engineer
- R. L. Craun, Engineering Manager
- M. E. Deniston, Operations
- M. Ferris, QA Operations Engineer
- \*C. H. Fuller, Station Manager
- \*J. M. Gramling, Supervisor, Nuclear Licensing Operations
- \*M. H. Holmes, Nuclear Licensing Manager
- M. Lehr, Supervisor, QA Engineer
- \*G. D. Schmalz, Fire Protection Program Manager
- \*D. Scott, QA Services Manager
- \*D. G. Seymour, QA Engineer
- \*N. Snyder, Maintenance Superintendent
- \*R. A. Spence, Senior Nuclear Licensing Engineer
- \*C. Stolley, Nuclear Technical Training Supervisor
- \*L. R. Sutton, Supervisor, QA Auditing
- \*P. F. Tomlinson, Manager, QA
- \*D. Vaintcaser, Security
- \*D. Warenbourg, Manager, Nuclear Engineering
- \*R. O. Williams, Jr., Vice President, Nuclear Operations

The NRC inspectors also contacted other licensee personnel including administrative, clerical, and operations personnel.

\*Denotes those attending the exit interview.

2. Fire Protection/Prevention Program

This inspection was conducted to evaluate the overall adequacy of the licensee's fire protection program and to determine whether the licensee was implementing the program in conformance with regulatory requirements and industry guides and standards.

The NRC inspectors reviewed the following Fort St. Vrain procedures:

<u>Number</u>	<u>Title</u>	<u>Date</u>
P-8	Fire Fighting and Prevention	07/14/87
FPOR 1 through 16	Fire Protection Operability Requirements	11/12/87

SR 5.10.7a-W Issue 10	CO <sub>2</sub> Fire Suppression System Weekly Verification of Tank Level and Pressure	02/19/88
MAP-17 Issue 1	Requirements During Performance of Maintenance on FSV Fire Rated Doors	07/24/86
SR 5.10.7b-A Issue 11	Verification of Flow Path and Operation of Cardox System Valves and Dampers Upon Actuation Signal	01/23/87
TPI QC-0A and 0B	Quality Control Inspection Procedure	03/20/87
TPI QC-01, 02, 04, 05, and 12	Quality Control Inspection Procedure	03/20/87
IP-01, 02, and 05	Installation Procedure	03/20/87
IP-04	Installation Procedure	06/25/87
IP-04	Installation Procedure	04/02/87
TP-FB Issue 1	Training Procedure - Fire Brigade	03/24/87
SMAP-32 Issue 3	Operations Department Experience, Qualification and Training Requirements	07/29/87

This review verified that the licensee had technically adequate procedures to implement the fire protection program. Procedural guidance was provided to control combustible material and reduce fire hazards. Administrative procedures also provided for maintenance and surveillances on fire suppression, detection and support equipment. Personnel training, qualifications, and responsibilities were adequately defined. Maintenance evolutions that significantly increase fire risk were properly controlled.

The NRC inspectors toured accessible areas of the plant site for general area condition, work activities in progress, and visual observation of the condition of fire protection systems and equipment. Combustible materials, flammable and combustible liquid, and gas usage were restricted or properly controlled in areas containing safety-related equipment and components. Items checked included positions of selected valves, fire barrier conditions, hose stations, hose houses, halon system lineups, fire lockers, and fire extinguishers for type, location, and condition.

During this inspection, the NRC inspectors noted two fire doors between the turbine building and building 10 at level 6, that were not closing completely due to the air pressure differential. The licensee stated that corrective action would be taken within 30 days.

Welding, cutting, or use of open flame ignition sources was not found in the areas toured. There were no construction activities in progress in the toured areas. There was some maintenance work in progress during the inspection. General housekeeping conditions were found to be excellent.

Fire protection systems and equipment installed for protection of safety-related areas appeared to be functional and had been tested in accordance with the requirements specified in the technical specifications. Fire brigade equipment, including emergency breathing apparatus, was found to be properly stored and maintained.

The NRC inspectors also reviewed fire brigade training and drill records. The records were up-to-date and confirmed that training and drills were being conducted at the specified intervals. During the inspection, the NRC inspectors observed a fire drill. This fire drill was conducted with the participation of the Platteville fire department. During this drill, the NRC inspectors noted that radio communications between the control room and the fire brigade leader were not always clear. This appeared to be because of radio system inadequacies. See paragraph 4 for additional observations concerning the fire drill. The licensee stated that corrective action would be taken to improve the radio communications. Pending review of the corrective action, this is considered an open item (267/8804-01).

### 3. Fire Protection QA Program Review

A general review of the last three annual audits was conducted. This included audits for 1985, 1986, and 1987. The audit packages were well organized and appeared thorough and informative. This review revealed that the licensee is documenting deficient conditions and is initiating corrective action. The audit packages satisfied the requirements of the Fort St. Vrain (FSV) Technical Specifications (TS) relative to fire protection program QA audits. The QA administrative procedure (Q-15) governing nonconformance report (NCR) initiation and disposition was reviewed. An adequate program is in place for dealing with nonconforming conditions. By procedure, any person may initiate an NCR. All NCRs are required to receive a thorough review for correct disposition.

A 3-month sample of the fire protection engineer's weekly inspections was reviewed. The fire protection engineer has reported several potential fire hazards to the station manager on a weekly basis. However, prompt corrective action is not being taken in all cases. The worst case noted during this review pertained to fire door Nos. 76 and 77. These doors were reported as needing adjustment or repairs to their self-closing feature. This deficient condition was reported every week during the month of January 1988. No corrective action was taken. It appears that deficient conditions reported by the fire protection engineer need more timely attention. During a plant familiarization tour, the NRC inspectors observed that fire door No. 96 (east door - auxiliary electric room) would not close without physical assistance. The licensee stated that corrective action would be taken.

4. Annual Fire Drill - Observations

During this inspection, a fire drill was conducted by the licensee. NRC inspectors observed activities at the scene of the simulated fire and in the reactor control room. No shift personnel were aware that the drill was to take place except the shift supervisor. The Platteville Fire Department actively participated in the drill with the onsite fire brigade. The simulated fire drill was staged at a chemical storage trailer inside the protected area on the east side of the cooling towers. The drill also involved a radiologically contaminated injury victim.

The following observations were made:

- o The drill was initiated at about 6:31 p.m. (MST), when word was passed to the control room that there was a "simulated" fire in storage trailers east of the main cooling tower. It was observed by the NRC inspector in the control room that fire brigade members began responding in less than one minute. Although the reactor was ascending in power at the time of the drill, it was observed that operators remained attentive to the control board and at the same time participated fully in activities related to the fire drill. At 6:43 p.m. (MST) when word reached the control room that the "fire" was large, the Platteville Fire Department was called. At the same time a simulated request for assistance was made to "Flight for Life" because of the injury victim. When advised that sodium nitrate and other chemicals were stored in the trailers, the SRO immediately referred to the control room copy of an emergency handbook for chemical fires. Specific advice on precautions for personnel protection and measures for fighting the fire with the specific chemicals involved, was transmitted to the brigade leader. Such information as wind direction and speed was also transmitted. Radio communications to and from the control room and the scene of the fire was garbled and broken-up from time to time. Because of radio communication's problems, Gaitronics was employed at more than one point to assure proper understanding. As noted in a previous paragraph, the licensee intends to take corrective action.

The NRC inspector noted that control room personnel carried out their duties in a highly professional manner. They appeared to be well trained for their roles during a fire, and they responded appropriately to the fire scenario sequence as it took place.

- o When the drill commenced, the fire alarm sounded for only 4 seconds.
- o The onsite fire brigade was on the scene and actually spraying the fire with water within 16 minutes of alarm activation. When responding to drills, the brigade walks to the fire instead of running, so this time would have been considerably shorter for a real

fire. Walking to the scene is required by procedure to prevent personnel injuries during a drill effort.

- The three onsite fire brigade hose men were able to spray the fire for approximately 8 minutes before all three men were out of air. It took approximately 7 minutes for the Scott Air Pack air bottles to be changed. While the air bottles were being changed, the Platteville Fire Department arrived onsite with a fire truck and ambulance. Platteville responded to the scene approximately 10 minutes after being called. Because of the time it took for the fire brigade to change air bottles (about 7 minutes) and the Platteville Fire Department to hookup hoses and commence spraying the fire (about 6 minutes after arrival), the fire was not fought for approximately 5 minutes by either organization.

The fact that the onsite fire brigade was short of air soon after arriving at the scene created a concern that perhaps the Scott Air Pack bottles were not fully charged. Subsequent investigation revealed that the Scott Air Packs are nominally good for 30 minutes of normal use. However, if the person using the air pack was in an excited state (i.e., fighting a fire), the air pack could be good for only 15 minutes. This fact alleviated the concern that the air bottles were not fully charged. The brigade members were in an excited state and had worn the Scott Air Packs for greater than 15 minutes prior to running out of air.

The drill showed the licensee that additional Scott Air Packs must be made available promptly at the scene and that it would be more expedient to change the whole air pack rather than the air bottle alone.

- The person playing the role of the radiologically contaminated injured person received prompt attention by the onsite fire brigade. The person was promptly moved away from the fire, frisked for contamination, and given immediate first aid.

There was no emergency medical technician onsite to give first aid. The injured person was treated by the duty health physics (HP) technician who was observed to be very knowledgeable in treating the injured person until Platteville Fire Department personnel could take over.

- The Platteville Fire Department reported that there were no problems with their equipment or in finding the nearest source of water. They did report difficulty in locating their emergency handbook for chemical fires.

They also provided constructive criticism regarding their initial difficulty in identifying the HP technician when they arrived on the scene. The licensee is considering a method of special

identification for the HP technician, such as a special hat or other easily identified marking.

- o Upon completion, the fire drill was immediately critiqued by the licensee with the Platteville Fire Department and the onsite fire brigade present. The critique was conducted well with all involved personnel actively participating.

In summary, the fire drill was excellent. The drill uncovered some potential weak areas with the use of Scott Air Packs and communications. Overall the drill was a professionally run and fully successful effort. All personnel involved were observed to be responsive and active throughout the drill scenario.

There were no violations or deviations identified in this area of the inspection.

5. Exit Interview

An exit interview was conducted on February 26, 1988, with those personnel denoted in paragraph 1 of this report. At this exit interview, the NRC inspectors summarized the scope and findings of the inspection.