

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Inspection Report: 50-267/96-03

License: DPR-34

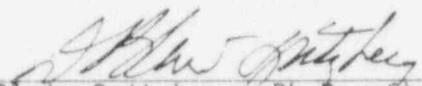
Licensee: Public Service Company of Colorado (PSCo)  
P.O. Box 840  
Denver, Colorado 80201-0840

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

Inspection At: Fort St. Vrain, Platteville, Colorado

Inspection Conducted: April 22-25, 1996

Inspectors: L. C. Carson II, Health Physicist  
Nuclear Materials Licensing Branch

Approved:   
D. Blair Spitzberg, Ph.D., Chief  
Nuclear Materials Licensing Branch

5-21-96  
Date

Inspection Summary

Areas Inspected: Routine, announced inspection was conducted to assess the licensee's implementation of the Final Survey Plan.

Results:

- Based on observations of health physics technicians conducting response tests on final survey instruments, the inspector concluded that this aspect of FSV's Final Survey Plan was implemented in accordance with approved procedures (Section 1.1).
- The inspector concluded that the licensee had conducted decontamination and final survey work in elevated areas of the reactor building in a safe manner but that consistent implementation of occupational safety precautions should continue to receive management attention (Section 1.2).
- The inspector concluded that licensee actions to identify area contamination as fixed or loose contamination were not timely to prevent unnecessary spread of contamination and potential complications with final survey results (Section 1.3).

- The inspector concluded that the licensee's new personnel monitoring and access control program met the requirements of the license and 10 CFR Part 20 (Section 2.1).

Attachment:

- Persons Contacted and Exit Meeting

## DETAILS

### 1 CLOSEOUT INSPECTION AND SURVEY (83890)

#### 1.1 Operation of the Final Survey Radiation Detector

Procedure FSV-RP-INST-I-221 entitled, "Fort St. Vrain Decommissioning Project Operation of LMI [Ludlum Measurements Incorporated] Data Logger," provides Scientific Ecology Group (SEG) health physics technicians (HPTs) with the operating instructions for using the primary final survey radiation instrument used to implement the Final Survey Plan. This procedure requires HPTs to perform response tests and efficiency determinations prior to (pre-use) and upon completion (post-use) of survey data collection.

The inspector observed 10 HPTs perform instrument response tests. The inspector found that the SEG HPTs were knowledgeable of the requirements of the procedure and the operation of final survey instruments. The inspector reviewed the pre-use and post-use data logger logbooks for 1996 and found the logbooks to be complete. The inspector determined that HPTs performed pre-use and post-use instrument response tests each morning and evening after survey data collection in accordance with Procedure FSV-RP-INST-I-221.

Based on observations of the HPTs conducting response test on final survey instruments, the inspector concluded that this aspect of the FSV Final Survey Plan was implemented in accordance with approved procedures.

#### 1.2 Decontamination Activities and Followup Surveys

The inspector observed MK Ferguson laborers and SEG HPTs perform decontamination and followup contamination surveys on Level 10 and Level 11 of the reactor building. Work on Level 11 was being conducted approximately 50-70 feet above the floor. With one exception that was immediately corrected, the inspector observed that workers on Level 11 appropriately wore safety harnesses when working on elevated areas. On Level 10, the inspector observed that MK Ferguson decontamination workers were not wearing safety harnesses while working from elevated areas, but this was corrected the next day. However, the SEG HPTs who conducted followup surveys on Level 10 were still observed not wearing safety harnesses. Based on discussions with workers on Level 10 and Level 11, the inspector determined that they were generally aware that FSV's safety training called for wearing harnesses 6 feet above a floor. Some SEG HPTs said that safety harnesses were inconvenient to wear while conducting radiation surveys. The inspector discussed this matter with licensee management and determined that they were unaware that contractors inconsistently implemented occupational safety practices regarding the use of safety harnesses. Licensee management indicated that they would correct this personnel occupational safety issue. The inspector noted that no injuries had occurred from falls due to work above the floors of Level 10 and Level 11. Based on further observations, the inspector concluded that licensee actions had been effective and that decontamination and final survey work in elevated areas of the reactor building had been conducted in a safe

manner but that consistent implementation of occupational safety precautions should continue to receive management attention.

### 1.3 Conduct of Final Surveys on Level 9 of the Reactor Building

On April 23, 1996, the inspector observed HPTs complete final surveys and associated documentation contained in survey package No. F113. The inspector observed the HPTs perform direct survey measurements and collect loose contamination smears for the final surveys. Upon review of survey package No. F113, the inspector noted that survey point No. 247 had measured 19,000 dpm/100cm<sup>2</sup>. The inspector located survey point No. 247 on the floor of the east general area. The inspector observed that survey point 247 was clearly marked on the floor; however, there was nothing on the floor to prevent individuals from walking on survey point No. 247. Additionally, the inspector observed the HPTs collect smear samples from the walls, ceiling, and floor as required by survey package No. F113, but there was no apparent urgency to count smear No. 247 to determine if loose contamination could be detected. Smears were normally counted by the radiochemistry laboratory. The inspector observed that final survey packages did not instruct HPTs to immediately post an area as contaminated, if during the course of a final survey scan or direct measurement, count rate exceeded 1000 dpm/100cm<sup>2</sup>. These observations concerned the inspector for the following reasons:

- The HPTs did not promptly measure the smears to determine if the radioactivity at survey point No. 247 was fixed or loose contamination.
- The HPTs did not isolate survey point No. 247 and implement prompt radiation protection contamination controls to prevent the spread of radioactivity.

The inspector discussed the above mentioned concerns with the HPTs, PSCo management, SEG supervisors responsible for the radiation protection program and the final survey program. The licensee explained that final survey smears collected by the HPTs were not given a high priority to be counted by the radiochemistry laboratory unless specified. It was the general practice to not even consider posting an area as contaminated unless loose radioactivity was confirmed. The inspector had noted from past inspections that the radiation protection department conspicuously marked fixed contamination areas in the turbine building, a non-radiologically controlled area (RCA). However, radiation protection supervision stated that it was not a common practice to readily identify fixed contamination areas in an RCA such as the reactor building.

Based on the inspector's observations about contamination control in the vicinity of sample point No. 247, the licensee measured the contamination on the smear, posted the contamination area around sample point No. 247 in accordance with Procedure FSV-RP-OPS-I-101 entitled, "Fort St. Vrain Decommissioning Project Posting of Radiologically Controlled Areas," issued

temporary instructions to all HPTs who perform final surveys, and issued Radiological Occurrence Report (ROR) 96-022 to address this matter.

On April 24, 1996, the radiochemistry laboratory reported that the smear from sample point No. 247 was loose contamination and measured 17,575 dpm/100cm<sup>2</sup>. The inspector reviewed routine contamination survey records that the radiation protection operations staff performed in 1996. The routine contamination survey records for the reactor building did not detect any other loose contamination in the vicinity of the east general area room level No. 9. It was determined that the final survey HPTs and engineers would perform a detailed investigation around survey point No. 247 as required by the Final Survey Plan.

The inspector concluded that licensee actions to identify area contamination as fixed or loose contamination were not timely to prevent unnecessary spread of contamination and potential complications with final survey results.

## 2 OCCUPATIONAL EXPOSURE DURING SAFSTOR AND DECONTAMINATION (83100)

### 2.1 Access Control Into the Reactor Building

During this inspection, the inspector observed workers entering and exiting the reactor building, an RCA. The inspector noticed that workers were not using the automated radiation work permit (RWP) and dose tracking system to log into and out of the RCA. On February 27, 1996, the licensee issued a memorandum that suspended routine monitoring of personnel for exposure to radiation, effective April 1, 1996. The licensee currently provides personnel external exposure monitoring for workers in special categories.

The licensee also revised RWPs to require workers who entered the RCA to manually log on the revised RWPs. The inspector reviewed RWP 96-1054 which allowed workers to enter the reactor building. The inspector found that workers who entered the reactor building RCA were properly signed on RWP 96-1054. The inspector observed several workers conduct personal contamination surveys upon exiting the RCA. The inspector randomly selected 10 workers to query about revised RWP 96-1054 and the new access control process. The inspector found that workers were knowledgeable about the requirements of the RWP and the newly implemented access control process. Additionally, the inspector observed that workers were conducting personal contamination surveys properly and that HPTs were monitoring workers when they exited the RCA.

The inspector concluded that the licensee's new personnel monitoring and access control program met the requirements of the license and 10 CFR Part 20.

## ATTACHMENT

### 1 PERSONS CONTACTED

#### 1.1 Licensee Personnel

- \*T. Borst, Radiation Protection Manager
- \*S. Chesnutt, Senior Project Assurance Engineer
- \*M. Holmes, Project Assurance Manager
- \*D. Seymour, Senior Quality Assurance Engineer

#### 1.2 Contractor Personnel

- \*R. Argall, Radiochemistry/Training Supervisor Scientific Ecology Group (SEG)
- \*D. Blain, Field Operations Coordinator, SEG
- M. Buring, Radiation Protection Operations Supervisor, SEG
- \*D. Deringer, Radiation Protection Operations Shift Supervisor, SEG
- \*B. Dyck, Licensing Engineer, Westinghouse
- \*D. Heiden, Quality Assurance Consultant
- \*T. Howard, Project Director, Westinghouse
- \*W. Hug, Operations Manager, MK-Ferguson
- \*M. Lambert, Radiological Engineer, SEG
- \*V. Likar, Technical Services Manager, Westinghouse
- \*B. Mann, SSCO Project Assurance Consultant
- \*M. Miles, Field Operations Coordinator
- R. McGinley, ALARA Supervisor, SEG
- \*G. Rood, Final Survey Lead Engineer, SEG
- \*H. Story, Project Radiation Protection Manager, SEG
- \*M. Zachary, Final Survey Operations Supervisor, SEG

#### 1.3 NRC Region IV Personnel

- \*L. Carson II, Health Physicist, Division of Nuclear Materials Safety

\*Denotes the personnel who attended the exit meeting. In addition to the personnel listed above, the inspectors contacted other members of the site staff during this inspection period.

### 2 EXIT MEETING

An exit meeting was conducted on April 25, 1996. During the meeting, the inspectors reviewed the scope and findings of the inspection. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.