

APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-482/87-36

Operating License: NPF-42

Docket: 50-482

Licensee: Wolf Creek Nuclear Operating Corporation (WCNOC)  
P.O. Box 411  
Burlington, Kansas 66839

Facility Name: Wolf Creek Generating Station (WCGS)

Inspection At: WCGS Site, Burlington, Kansas

Inspection Conducted: November 16 and 17, 1987

Inspector:

*for* H. Chae  
R. E. Baer, Radiation Specialist, Facilities  
Radiological Protection Section

12/17/87  
Date

Approved:

*for* H. Chae  
B. Murnay, Chief, Facilities Radiological  
Protection Section

12/17/87  
Date

Inspection Summary

Inspection Conducted November 16 and 17, 1987 (Report 50-482/87-36)

Areas Inspected: Special, unannounced inspection of the radiation protection program including contamination control.

Results: Within the area inspected, one violation was identified.

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DETAILS

1. Persons Contacted

WCNOC

- \*G. D. Boyer, Plant Manager
- \*C. J. Hoch, Quality Assurance (QA) Technician
- L. M. Kline, Senior Health Physics Technician
- \*E. Lehmann, Technical Staff Engineer
- \*J. F. McMahon, Technical Training Supervisor
- \*M. M. Nichols, Plant Support Superintendent
- \*C. E. Parry, Quality Engineering Superintendent
- \*G. J. Pendergrass, Licensing Engineer
- \*K. R. Petersen, Licensing Supervisor
- \*W. J. Rudolph II, QA Manager
- \*R. Sims, Technical Staff Engineer
- C. L. Taylor, Acting Site Health Physicist
- \*G. Wedel, Environmental Management Supervisor
- \*M. G. Williams, Regulatory, Quality and Administration Superintendent
- \*W. Wood, General Counsel
- \*J. A. Zell, Nuclear Training Manager

Others

- \*B. L. Bartlett, Resident Inspector, NRC
- M. Kinnen, Coffey County Deputy Sheriff
- H. L. Spiker, State of Kansas Department of Health and Environment
- C. Swartz, State of Kansas Department of Health and Environment

\*Denotes those individuals present during the exit interview conducted on November 17, 1987.

The NRC inspector also interviewed several other licensee and contractor health physics employees.

2. Background Information

On November 8, 1987, a health physics (HP) technician released material consisting of ventilation ductwork, which was believed to have originated from the auxiliary building, from the facilities radiologically controlled area. This material did not indicate any detectable transferable radioactive material when checked by the smear wipe method. The HP technician had observed an increase in radiation levels at welded seams on the inside of the ductwork of approximately 150 to 200 counts per

minute (CPM) above background with a count-rate meter and pancake type Geiger-Muller (G-M) detector. The technician attributed this increase to naturally occurring tungsten-187 which had been found in welding rod. A sample of the duct had been retained and was later, on November 9, 1987, analyzed on a gamma spectrometer system and determined to contain trace quantities of the radionuclides of cobalt-58 and 60, chromium-51, and iron-59. The HP technician notified his supervisor of the findings and they immediately attempted to locate the material. The material had been removed from the WCGS site and discarded in the Coffey County landfill east of Burlington, Kansas.

The morning of November 10, 1987, the site health physicist directed HP technicians to go to the landfill and retrieve the ventilation ductwork. Construction personnel involved in the removal of the material from the containment building inventoried the material and confirmed that all material, except for two steel straps and a piece of angle iron, were accounted for. The licensee could not verify that the straps and angle iron were removed from the WCGS site. The licensee calculated the total activity of the retrieved ductwork to be 4.75 microcuries ( $\mu\text{Ci}$ ) and estimated the activity for those items not recovered to be 0.293  $\mu\text{Ci}$ .

NOTE: The licensee had completed the radiological survey of the Coffey County landfill on November 30, 1987. The licensee recovered some 3-inch square "L" brackets which were determined not to be contaminated but did not recover any of the identified missing ductwork pieces at the landfill. This reinforces the licensee doubts that the missing material was released from the WCGS site.

### 3. Inspection Findings

The NRC inspector arrived at the WCGS site on the morning of November 16, 1987, and reviewed the circumstances and actions taken by the licensee relating to the ventilation ductwork incident. The NRC inspector, accompanied by the WCGS NRC resident inspector, plant support superintendent, and a HP technician went to the Coffey County landfill to observe where the ductwork was retrieved and perform a confirmatory radiation survey of the area. During the radiation survey, a plastic bag was found that indicated approximately 45 microroentgens per hour ( $\mu\text{R/hr}$ ) which corresponded to between 400 and 500 cpm on a pancake type G-M detector, the general background radiation level at the landfill was observed between 7 and 10  $\mu\text{R/hr}$ .

Arrangements were made with the landfill operator to divert all new incoming trash to a separate area of the landfill trench while WCGS personnel retrieved the contents of the bag and performed additional radiation surveys of the area.

First indications were that the radiation was emanating from a bundle of rags which had been used for dye-penetrant testing. The licensee later determined that there were two blue rags inside the bundle that were contaminated and the dye-penetrant rags were radiologically clean. The

licensee calculated the two blue rags to contain approximately 0.41 uCi of licensed radioactive materials. Examination of the contents of the plastic bag revealed that the bag had originated from the WCGS site, came from within the radiologically controlled area, and that the bag had been released from the WCGS site sometime after October 22, 1987.

The licensee notified the state of Kansas, Department of Health and Environment, the NRC, county officials, and made a press release of the second finding of licensed material at the landfill. The licensee also stopped the release of all dry waste from the radiologically controlled area of the plant and instituted a training program to retrain all HP technicians who monitor materials being released in the procedures and methods of monitoring.

The Coffey County landfill trench was filled to a length of approximately 356 feet and 120 feet wide. The licensee agreed to perform radiation surveys of the landfill. The licensee also agreed to include the Coffey County landfill on their routine radiation survey schedule. The landfill will be surveyed on a weekly basis to begin with and providing no additional licensed material is found after a period may be reduced to a monthly basis.

Additional corrective actions to be taken by the licensee include:

- A review of release criteria, procedures, techniques, limits, and locations to be monitored.
- Interview individual HP technicians, cleaners, and supervisors to determine nature of the incident.
- Require each bag of trash being removed from the radiologically controlled area to be monitored by two individuals.
- Each bag of trash will have a tag or sticker attached to include the name of individuals who surveyed it.

10 CFR Part 20.301(a) states, in part, that no licensee shall dispose of licensed material except by transfer to an authorized recipient as provided in the regulations.

The NRC inspector stated that the disposal of licensed radioactive material in the Coffey County landfill is considered an apparent violation of 10 CFR Part 20.301(a) requirements (482/8736-01).

#### 4. Exit Interview

The NRC inspector met with the personnel identified in paragraph 1 at the conclusion of the inspection on November 17, 1987. The NRC inspector summarized the scope and findings of the inspection.