

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: 50-285/83-31

Docket: 50-285

License: DPR-40

Licensee: Omaha Public Power District (OPPD)
1623 Harney Street
Omaha, Nebraska 68102

Facility Name: Fort Calhoun Station (FCS), Unit 1

Inspection At: FCS, Blair, Nebraska

Inspection Conducted: November 14-18, 1983

Inspector:

Wesley L. Holley
W. L. Holley, Radiation Specialist

12/16/83
Date

Approved:

Blaine Murray
Blaine Murray, Chief, Facilities Radiation
Protection Section

12/19/83
Date

W.D. Johnson
W. D. Johnson, Chief, Reactor Project Section C

12/22/83
Date

Inspection Summary

Inspection conducted November 14-18, 1983 (Report: 50-285/83-31)

Areas Inspected: Routine, unannounced inspection of the licensee's radiation protection program during operations including radiation protection procedures; instrumentation and equipment; exposure control; posting, labeling, and control; surveys; notifications and reports; and NUREG-0737 open items. The inspection involved 40 inspection-hours onsite by one NRC inspector.

Results: Within the seven areas inspected, one violation was identified (Procedural Compliance, see paragraph 5.a.)

DETAILS

1. Persons Contacted

- *W. C. Jones, Division Manager, Production Operations
- C. J. Brunnert, Supervisor, Operations Quality Assurance
- T. Christensen, Health Physics Shift Coordinator
- M. Core, Supervisor, Maintenance
- *J. Fisicaro, Supervisor, Administrative Services and Security
- *F. Franco, Manager, Radiological Health and Emergency Planning
- K. R. Henry, Test Engineer
- *R. L. Jaworski, Manager, Technical Services
- M. Kallman, Shift Technical Advisor
- *L. T. Kusek, Supervisor, Operations
- J. Mattice, FCS Plant Health Physicist
- *K. J. Morris, Manager, Administrative Services
- *A. W. Richard, Supervisor, Technical
- *G. L. Roach, Supervisor, Chemistry and Radiation Protection
- F. Smith, Plant Chemist
- *P. M. Surber, Section Manager, Generating Station Engineering
- *F. A. Thurtell, Division Manager, Quality Assurance (QA) and Regulatory Affairs
- *M. C. Winter, Manager, QA

Others

- *L. A. Yandell, NRC Senior Resident Inspector

The NRC inspector also interviewed other licensee employees including health physics, administrative, and maintenance personnel.

*Denotes those present during the exit interview on November 18, 1983.

2. Licensee Action on Previous Inspection Findings

(Closed) Open Item (285/8226-16) - NUREG-0737 Item II.F.1, "Additional Accident Monitoring Instrumentation," Attachment 2, "Sampling and Analysis of Plant Effluents": This item was discussed in NRC Inspection Report 50-285/82-26 and involved the instrumentation not being installed. The licensee had installed the equipment and demonstrated that it operated properly. This installation appears to be adequate to meet the criteria of NUREG-0737. This item is considered closed.

3. Procedures

The NRC inspector reviewed selected radiation protection procedures and health physics procedures to determine compliance with the

requirements of Technical Specification (TS) 5.11, 10 CFR Part 20, and the recommendations of Regulatory Guide (RG) 8.8. The NRC inspector reviewed 16 recent revisions to existing procedures and 9 new procedures.

No violations or deviations were identified.

4. Instruments and Equipment

The NRC inspector reviewed the licensee's Radiation Protection Instrumentation Program related to inventory, maintenance, and calibration to verify that their program complied with plant procedures and agreed with the recommendations of ANSI-N323-1978 and RG 8.25.

The NRC inspector reviewed calibration records for 54 portable survey meters and air samplers. These records met the criteria of FCS Standing Order No. T-13, "QC Program for Chemistry and Radiation Protection Equipment." Also, the instrument inventory, response tests, and calibrations were examined to determine compliance with FCS procedures and TS requirements.

No violations or deviations were identified.

5. Exposure Control

a. External Exposure Control

The NRC inspector reviewed the licensee's external exposure control program to determine compliance with the requirements of 10 CFR 20.101, 20.102, 20.104, 20.202, and 20.401.

All personnel entering the radiation control area (RCA) were routinely issued a thermoluminescent dosimeter (TLD) and a direct reading dosimeter (DRD). These devices were assigned to individuals to comply with the requirements of 10 CFR Part 20.202(a). Additional dosimeter devices, such as high-range DRDs or extremity TLDs, may be required in certain areas and are specified on the Radiation Work Permit (RWP).

The NRC inspector reviewed Form NRC-4 information for 14 workers to verify that the necessary information was documented prior to allowing the workers to exceed the 1250 mrem/quarter limits.

The exposure records for the above 14 workers also contained current Form NRC-5 information as required by 10 CFR 20.401.

The NRC inspector reviewed a TLD versus DRD comparison for 1983 and noted some disagreements. FCS Standing Order T-10 gives the criteria for when an investigation is warranted because of TLD versus DRD

disagreement. An investigation is performed when the TLD versus DRD disagrees by ± 75 percent and the TLD reads 50-150 mRem; when the TLD versus DRD disagrees by ± 50 percent and the TLD reads 150-300 mRem; and when the TLD versus DRD disagrees by ± 25 percent and the TLD reads greater than 300 mRem. All incidents of TLD versus DRD disagreement that met these criteria had the findings of the investigations documented. The majority of these findings gave the reason for the disagreements to be personnel entering a great number of times into radiation areas coupled with DRD reading errors. When the disagreement was positive (TLD dose greater than DRD dose) the individual had entered many times into radiation areas and the DRD did not record any dose received or an amount lower than actually received was read in error, but in both instances the TLD was higher and considered correct. Similarly, when the disagreement was negative (TLD dose less than DRD dose) an individual had also entered many times into radiation areas and the DRD recorded some dose received or an amount higher than actually received was read in error while the TLD dose was less and considered the correct dose received.

The Personnel Contamination Report Log (FC-385) contained 80 incidents of personnel contamination for the period of January 1 through August 31, 1983. A majority of these incidents appeared to be due to improper undressing procedures. The licensee had whole body counted all individuals with facial contamination where there was ingestion potential.

The Radiological Incident Report Log (FC-383) recorded 28 radiological incidents for the period January 1-November 4, 1983. The NRC inspector verified that proper corrective actions had been completed in a timely manner for documented incidents.

During a review of the licensee's RWPs, the NRC inspector determined that the licensee had not performed a weekly review of 14 Standing RWPs for the month of May 1983, and also a similar situation existed for the month of February 1983. This is contrary to the following: (1) TS 5.11, "Radiation Protection Program," which states: "Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be . . . maintained and adhered to . . ."; and (2) the radiation procedures addressed in Standing Order T-1, "Radiation Protection Manual," which states: "All station personnel . . . will abide to every provision of the Radiation Protection Manual" In addition, Section IV.I.1, "Weekly Review of Standing R.W.P.'s," of Radiation Protection Procedure (RPP)-20, "Radiation Work Permit," which is part of the Radiation Protection Manual, states: "All R.W.P.'s written for a period greater than five working days will be reviewed by a designated individual within the Radiation Protection

Group . . . the R.W.P will be dated and initialed in the space provided." This is a violation (285/8331-01).

It should be noted that a similar violation (50-285/8230-01) was issued as a result of an inspection conducted during December 1982.

b. Internal Exposure Control

The NRC inspector reviewed portions of the licensee's internal exposure program to determine compliance with the requirements of 10 CFR Part 20.103 and the recommendations of ANSI N343-1978.

The NRC inspector determined that a portion of the licensee's internal exposure program consists of an initial whole body count (WBC), annual WBC for long-term employees, and an exit WBC for all OPPD employees and contractor personnel who enter radiologically controlled areas. Other bioassay sampling and counting are conducted when deemed appropriate by the health physics supervisor.

The NRC inspector reviewed the following for selected periods of time:

- o 1983 "Report of In Vivo Counting for OPPD FCS," Helgeson Nuclear Services
- o 1983 Air Particulate Counting Log
- o Self-Contained Breathing Apparatus Monthly Inspection Record (FC-361)
- o 1982, 1983 Whole Body Counting Log

The NRC inspector reviewed the whole body counter and respirator fit test facilities.

No violations or deviations were identified.

6. Posting, Labeling and Control

The NRC inspector reviewed the licensee's posting and control program for radiation controlled areas to determine compliance with 10 CFR Parts 19.11, 20.203, 20.204, 20.207, and FCS TSs 5.11.1 and 5.11.2.

The NRC inspector noted that the licensee had established an adequate program for identifying posting, controlling, and providing routine surveillance of station areas defined as radiation areas, high radiation areas, and radioactive material areas.

The NRC inspector observed that the licensee had posted notices and information as required by 10 CFR Part 19.11.

The licensee's program for radiological work activities appeared to be adequate. The RWP portion of this program addresses the necessary controls for work conducted in radiation areas. These controls are acknowledged by the personnel performing the work and they indicate their understanding and compliance to these controls by their signature on each specific RWP.

No violations or deviations were identified.

7. Surveys

The NRC inspector reviewed the licensee's radiation survey program to determine compliance with the requirements of 10 CFR Parts 20.201, 20.203, 20.204, and 20.401.

The licensee's survey program appeared to be adequate for the evaluation of radiological conditions. Also, the program appeared sufficient to detect significant changes in RCA conditions.

The NRC inspector also reviewed survey records including Radiation Surveys (FC-224), Smear Activity Log (FC-325), Monthly Survey Schedule (FC-317), Containment Airborne Surveys, and Air Particulate Counting Log (FC-249).

No violations or deviations were identified.

8. Notifications and Reports

The NRC inspector reviewed selected reports required by 10 CFR 19.13, 20.403, 20.408, and 20.409. The NRC inspector did not identify any errors or omissions.

There were not any radiation protection notifications of incidents reported to the NRC as required by 10 CFR 20.403 for this inspection period.

The NRC inspector reviewed the Exposure Letters (FC-285) which included exposure reports to employees, their new employers, and termination letters.

In this inspection period, the licensee had five Operations Incident Reports in the Operations Incident Index which dealt with the radiation protection program. Most of these incidents were minor and all of them were rectified correctly and in a timely manner.

No violations or deviations were identified.

9. Audits

The NRC inspector reviewed the licensee's audit program relevant to the station radiation protection program to determine compliance with TS 5.5.2.8 and the FCS Quality Assurance Manual.

The NRC inspector determined there were not any new audits conducted since the previous radiation protection inspection conducted during September 26-30, 1983 (50-285/83-24).

The NRC inspector reviewed the qualification and training records of the auditors. There were not any auditors on the licensee's onsite staff that had any training or background in radiation protection except for instrumentation calibration. This concern was mentioned during the exit meeting and the licensee gave assurances that personnel with health physics experience would be included as members of future teams auditing the licensee's radiation protection program.

No violations or deviations were identified.

10. Plant Tour

The NRC inspector toured the plant on November 18, 1983. Special attention was given to the radiation protection activities. During the tour, the inspector observed the calibration status and operability of portable survey meters, friskers, hand and foot monitors, constant air monitors, portable air monitors, and area radiation monitors in the auxiliary building and radwaste areas. Attention was also given to area posting and high radiation area security. A radiation survey was made by the NRC inspector in the auxiliary building, radwaste areas, and other areas of the plant.

No violations or deviations were identified.

11. Exit Interview

The NRC inspector met with licensee representatives (see paragraph 1) and the NRC resident inspector at the conclusion of the inspection on November 18, 1983. The NRC inspector summarized the scope and findings of the inspection presented in the report. As discussed in paragraph 9 above, the licensee committed to assuring that future audits of the radiation protection program would include personnel with health physics background.