U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-346/78-08

Docket No. 50-346 License No. NPF-3

Licensee: Toledo Edison Company
300 Madison Avenue
Toledo, OH 43652

Facility name: Davis-Besse Nuclear Power Station, Unit 1

Inspection at: Davis-Besse Site, Oak Harbor, OH

Inspection conducted: April 3-7, 1978

Inspector: L. R. Greger L R Greger 5/8/78

Approved by: W. L. Fisher, Chief W. L. Fisher 5/8/78
Fuel Facility Projects and
Radiation Support Section

Inspection Summary

Inspection on April 3-7, 1978 (Report No. 50-346/78-08)
Areas Inspected: Routine, unannounced inspection of radiation protection program, including: qualifications; audits; training; radiation protection procedures; instruments and equipment; exposure control; posting, labeling, and control; surveys; notifications and reports; and licensee action on previously identified enforcement items and commitments. The inspection involved 47 inspector-hours on site by one NRC inspector.
Results: No items of noncompliance or deviations were identified.

## DETAILS

1. Persons Contacted

*D. Briden, Chemist and Health Physicist
B. Franta, Training Coordinator
*B. Geddes, Assistant Health Physicist
*T. Hart, QA Technician
*J. Hickey, Training Supervisor
*T. Murray, Station Superintendent
*R. Scott, Chemistry and Radiochemistry Supervisor
D. Varwig, Safety Coordinator
*J. Zell, Assistant Engineer

The inspector also contacted several other licensee employees, including members of the technical and engineering staffs.

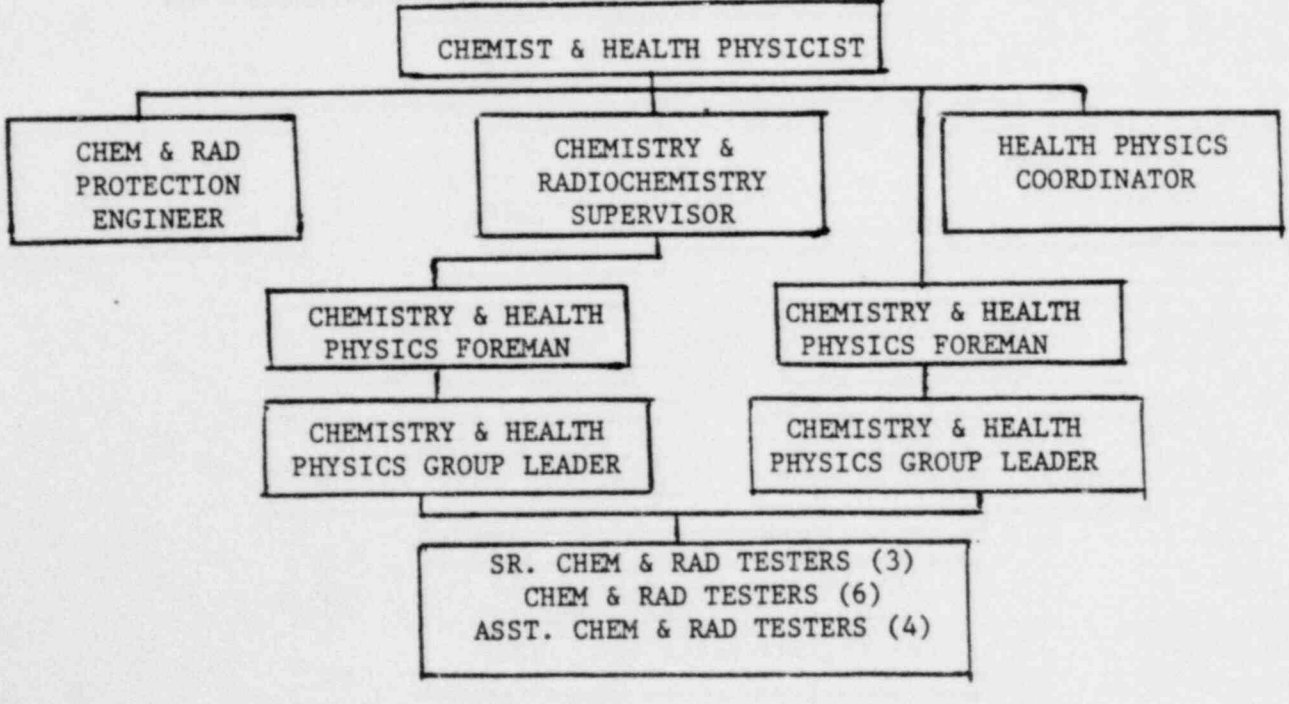
*Denotes those attending the exit interview.

2. General

This inspection, which began at 12:30 p.m. on April 3, 1978, was conducted to examine the licensee's radiation protection program and related activities for compliance with regulatory requirements.

3. Organization

The licensee's current radiation protection organization is depicted below. All positions are currently filled. Offshift radiation protection coverage is provided by at least one member of the chemistry and radiation protection organization.



No items of noncompliance or deviations were identified.

4. Licensee Audits

The inspector reviewed the audit program as related to the radiation protection and radwaste related activities. An audit of the radiation safety and chemistry areas (QAP 5110) was conducted by licensee personnel during March 1978. Review of the audit results indicated that the audit, conducted on a sampling basis, was relatively thorough for the selected items. Several additional audits of more general nature examined isolated items within the radiation protection area. A radwaste management audit (QAP 5220), although scheduled annually, had not been conducted at the time of this inspection. This item will be reviewed further during a future inspection.

The licensee had reviewed the personal monitoring TLD badge service's quality assurance program and had accepted it as meeting the licensee's quality assurance requirements.

No items of noncompliance or deviations were identified.

5. Training

The initial radiation protection orientation (GOT-1) and the additional controlled area radiation protection orientation (GOT-2) training programs have not undergone significant revision since the preceding inspection. Annual GOT-1 and GOT-2 retraining programs have been instituted. The inspector attended a GOT-2 requalification training session and reviewed the lesson plan for the GOT-1 requalification training. The annual retraining was approximately 90% complete at the time of this inspection. Selective review of the licensee's GOT-1 and GOT-2 training records did not reveal any significant discrepancies. Several items related to the content of GOT-2 training were discussed with licensee personnel for possible inclusion/revision.

Expiration of GOT-1 training is identified through security badge coding while GOT-2 training status is monitored by chemistry and health physics personnel through the radiation exposure permit (REP) system.

No items of noncompliance or deviations were identified.

6. Radiation Protection Procedures

The inspector reviewed the revisions to the Radiation Protection Manual and radiation protection procedures since the preceding inspection. The revisions did not appear to diminish the effectiveness of the radiation protection program.

Several minor procedural discrepancies were noted: (1) a lack of procedural guidance regarding extremity monitoring, (2) inconsistency between procedures and actual practices for neutron monitoring and personal exposure records, and (3) respiratory protection program discrepancies (Paragraph 9). These items will be reviewed further during a future inspection.

No items of noncompliance or deviations were identified.

7. Instruments and Equipment

Inventories and calibrations of radiation and contamination survey instruments, fixed radiation monitors, and continuous air monitors were selectively reviewed. With the exception of the continuous air monitors (CAM's), calibration and functional test frequencies were observed to conform to the licensee's technical specification and procedural requirements. According to licensee personnel, the two portable CAM's, although not currently in use due to calibration problems and minimal airborne potentials, would be calibrated for use during the upcoming outage.

A check source was observed stored in the survey instrument cabinet for use as an operational check source. Although the check source provided a means of determining that the survey instruments responded to radiation, the acceptable responses of the survey instruments were not specified.

No items of noncompliance or deviations were identified.

8. External Exposure Control

The licensee's personal monitoring program includes use of thermoluminescent dosimeters (TLD's), direct reading pocket dosimeters, and neutron doses calculated from pocket dosimeter correlations or stay time calculations. A switch from LiF to $CaSO_4$ was effected to achieve better reproducibility, according to licensee personnel. Personal dosimetry records for 1977 were reviewed; no doses in excess of 10 CFR 20.101 limits were noted. The highest individual dose observed

for calendar year 1977 was less than 500 mrems, including calculated neutron dose. Review of available records did not reveal any exposures in excess of 1250 mrems for the first quarter of 1978.

The licensee maintains completed NRC-4 forms on permanent badged personnel only. Temporary and visitor badged personnel are restricted to less than 1250 mrems per quarter and 300 mrems per quarter, respectively. Termination reports have been sent only when requested by former employees. According to licensee personnel, a decision that personnel were not likely to exceed 25% of the Part 20 quarterly personal exposure limits during 1977 had been made. Review of the personal dosimetry records through March 1978, did not reveal any whole body doses in excess of 300 mrems per quarter for personnel other than the chemistry and radiation testers.

Neutron doses are calculated by applying a factor of five correction factor to self reading pocket dosimeter results for containment entries at power. The correlation was determined using a tissue equivalent neutron detector to measure neutron doses in conjunction with gamma radiation measurements.

The licensee submits spiked TLD's to the personal dosimetry vendor quarterly. Self reading dosimeters are checked for accuracy and drift semiannually. Selective review of the licensee's TLD spikes and self reading dosimeter checks did not reveal any significant discrepancies.

No items of noncompliance or deviations were identified.

9. Internal Exposure Control

The licensee's program for control of internal exposures includes the use of protective clothing and equipment, control/reduction of surface and airborne contamination levels, and utilization of surface and airborne survey information. Whole body counting is conducted annually or more frequently if required.

The licensee notified the Director of the NRC Regional Office (RIII) by letter dated February 27, 1978, that respiratory protective equipment would first be used under the provisions of 10 CFR 20.103 on or after April 3, 1978.[1/] Respiratory protective equipment had not been required as yet at the time of this inspection. The inspector reviewed the licensee's respiratory

1/ Ltr, Murray to Keppler, dtd 2/27/78.

protection program, including procedure HP 1605.02 - Respiratory Equipment (Rev. 2), for conformance to the requirements of 10 CFR 20.103 and Regulatory Guide 8.15. The following discrepancies were identified with the licensee's respiratory program. Procedures were either not available or in need of revision regarding fitting of respirators, training of personnel, and respirator maintenance. Documentation of the medical screening was not complete nor had the licensee finalized methods for evaluating the regulatory significance of bioassay data. Several additional minor discrepancies were discussed with licensee personnel.

The licensee last whole body counted permanent plant employees during June 1977. No significant internal depositions were identified. Although the licensee intends to whole body count certain individuals both before and after use of respiratory equipment, an onsite whole body counter has not been procured.

No items of noncompliance or deviations were identified.

10. Posting, Labeling, and Control

During the inspection of the licensee's facilities, the inspector examined radiation caution sign postings, high radiation area access controls, radiation work permit usage, and survey postings for conformance to regulatory requirements and the licensee's procedures. Several instances of poor health physics practices were noted: (1) anticontamination clothing left in work areas with no identification of contamination status, (2) expired radiation exposure permit not removed from work site, (3) inconsistent use of caution sign terminology, (4) inconsistent identification of contaminated waste containers, and (5) failure to update area survey information upon removal of radwaste liners. These items will be reviewed further during future inspections.

The documents required to be posted pursuant to 10 CFR 19.11 were noted to be posted as required.

No items of noncompliance or deviations were identified.

11. Surveys

The licensee's direct radiation, contamination and airborne survey records were selectively reviewed. No significant discrepancies were identified. Surveys were noted to be

conducted at the frequencies specified by the licensee's procedures. Survey results were posted at the entrance to the radiation controlled area.

The licensee's records of sealed source leak tests and inventories were reviewed. The most recent tests were conducted during February, 1978. No leaking sources were identified.

No items of noncompliance or deviations were identified.

12. Notifications and Reports

Selected records of notifications and reports related to radiation protection as required by 10 CFR 19, 10 CFR 20, and the Technical Specifications were reviewed.

No items of noncompliance or deviations were identified.

Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on April 7, 1978, and summarized the scope and findings of the inspection. In response to certain items discussed by the inspector, the licensee:

a. Stated that a radwaste management audit was scheduled for May 1978. (Paragraph 4)

b. Agreed to review certain aspects of the GOT-2 requalification training and effect required changes. (Paragraph 5)

c. Acknowledged the inspector's comments regarding several procedural discrepancies. (Paragraph 6)

d. Stated that the portable continuous air monitors would be calibrated and used during the upcoming outage. (Paragraph 7)

e. Stated that acceptable responses of survey instruments to the operational check source would be determined and posted at the RACA storage cabinet. (Paragraph 7)

f. Stated that individuals issued temporary or permanent badges subsequent to January 1, 1978, would be assumed to have been provided with the TLD badges pursuant to 10 CFR 20.202(a). Termination reports will be issued pursuant to 10 CFR 19.13

and 10 CFR 20.408 for all terminations of temporary and permanent badged personnel subsequent to January 1, 1978. (Paragraph 8)

g. Stated that the respiratory protection program would be upgraded to the requirements of Regulatory Guide 8.15 before any required use of respiratory protective equipment. The first such use is expected to be during the outage currently scheduled to begin April 28, 1978. (Paragraph 9)

h. Acknowledged the inspector's comments regarding minor posting, labeling, and control problem areas noted during tours of the licensee's facilities. (Paragraph 10)