U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/82-20(DETP)

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

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

Facility Name: Davis-Besse Nuclear Power Plant, Unit 1

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

Inspection Conducted: August 2-6, 1982

Inspectors: D. E. Miller for — 8/24/82

W. B. Grant — 8/24/82

Approved By: L. R. Greger, Chief — 8/24/82
Facilities Radiation
Protection Section

Inspection Summary:

Inspection on August 2-6, 1982 (Report No. 50-346/82-20(DETP))
Areas Inspected: Routine, unannounced inspection of operational radiation protection, radwaste, and transportation programs, including: testing of air-cleaning systems, audits, radiation protection procedures, qualifications and training, exposure control, in-plant radiation protection program, advanced planning and preparation, instruments and equipment, and transportation. The inspection involved 64 inspector-hours onsite by two NRC inspectors.
Results: No items of noncompliance or deviations were noted.

DETAILS

1. Persons Contacted

*T. Murray, Station Superintendent
*S. Quennoz, Assistant Station Superintendent - Operations
*D. Briden, Chemist and Health Physicist
*F. Miller, Nuclear Engineering Manager, TECo
*L. Young, Nuclear Licensing Supervisor, TECo
*R. Naylor, Senior Systems Engineer, TECo
*J. Greer, Quality Assurance Supervisor - Operations
*D. Eldred, Maintenance Specialist
*W. Mills, Chemical and Radiation Protection Engineer
*M. Horne, Health Physics Supervisor
*R. Scott, Chemistry Supervisor

*T. Peebles, NRC Senior Resident Inspector
*W. Rogers, NRC Resident Inspector

The inspectors also contacted several other licensee employees during the inspection.

2. General

This inspection, which began at 1:00 p.m. on August 2, 1982, was conducted to examine the operational radiation protection, radwaste, and transportation programs. The inspection included tours of several radiologically controlled areas. Radiological controls, postings, and housekeeping appeared to be generally good.

3. Chemistry and Health Physics (C&HP) Department Organization

Since the last inspection (50-346/81-19), conducted on December 13-16, 1981, an environmental technology section has been added to the C&HP department. The duties of the new section include management of meteorological and environmental data, and preparation of effluent reports. The section has a staffing of four.

The remainder of the C&HP department has been notably stable since the last inspection, with promotions within being the only changes.

4. 10 CFR 19.12 Training

Initial training, General Orientation Training (GOT) and Radiological Controls Training (RCT), remains as described in Report No. 50-346/81-11. Based on the time delay encountered by the inspector in completing the training needed for unescorted site access, it appears that modification of the initial training program is warranted for individuals with nuclear plant experience at other facilities.

According to the licensee, and a selective records review, no individual has exceeded 1200 mrem quarterly whole body dose during 1982.

8. Internal Exposure Control

The licensee's internal exposure control program remains as described in Report No. 50-346/81-11 except that a recently purchased chair-type whole body counter is now being routinely used. The previously used contract whole body counter is being retained as a back-up until reliability of the chair-type is established. Procedures for operation and calibration of the chair counter will be reviewed during a future inspection.

According to the licensee, and review of selected records including airborne activity surveys, contamination surveys, radiation exposure permits, and whole body counting results, no exposures greater than the 40 MPC-hour control measure were indicated.

No items of noncompliance or deviations were identified.

9. Surveys

The inspector selectively reviewed records of direct radiation, contamination, airborne, and locked radiation area surveys performed by the licensee during CY 1981 and 1982. Routine surveys were conducted at the frequencies specified in the licensee's procedures.

No items of noncompliance or deviations were identified.

10. Effluent Control Instrumentation

The inspectors selectively reviewed the following records of calibration and functional testing of effluent and process radiation monitoring instrumentation conducted during 1982.

RE	1822	Radioactive Waste Gas Discharge
RE	2024 & 2025	Station Vent Stack
RE	5403	Fuel Handling Building Exhaust System
RE	8433	Collection Box Outlet to Lake

Calibrations and tests appear to have been adequately performed at the required frequencies.

No items of noncompliance or deviations were identified.

11. Testing of Air-Cleaning Systems

The inspectors selectively reviewed records of operability and surveillance testing conducted during 1982 on the following ventilation systems: containment purge, containment recirculation and cooling, containment hydrogen purge, emergency ventilation, and control room emergency ventilation.

While attending an RCT presentation, the inspectors noted that subjects recommended in Regulatory Guide 8.29 "Instruction Concerning Risks from Occupation Radiation Exposure" have been adequately added to the presentation. Except for some minor errors and inconsistencies, the RCT is comprehensive and well presented.

No items of noncompliance were identified.

5. Radiation Protection Procedures

The inspector reviewed the following radiation protection procedures added or revised since the inspection conducted on October 13-16, 1981.

HP	1601.03	Rev. 7	Radiation Exposure Permits
HP	1601.04	Rev. 9	Radiation, Contamination, and Airborne
HP	1601.05	Rev. 4	ALARA
HP	1605.02	Rev. 9	Respiratory Equipment
HP	1605-03	Rev. 0	Canberra Whole Body Counting System
HP	1607.01	Rev. 6	Shipping Radioactive Material
HP	1607.04	Rev. 4	Storage of Radioactive Material
HP	1605.03	Rev. 1	Industrial Radiography

They appear to be compatible with regulatory requirements and FSAR commitments. No problems were noted.

6. Licensee Quality Assurance Audits

Two audits of chemistry and health physics were conducted during 1932 by a QA representative who is a former supervisor in the chemistry and health physics department. Audit 836-1, conducted January 22 through February 5, 1982, examined control and calibration of measuring and test equipment and respirator fitting and equipment testing. One finding was made and corrective action completed. Audit 886-1, conducted during May 1982, examined whole body counting, and receipt, transfer, and storage of radioactive material. One finding was made and corrective action completed.

The 1982 audit of radwaste management was conducted in July, but documentation was not available for review during this inspection. The previous radwaste management audit, completed in May 1981, examined administrative procedures and shipping of radioactive material. Two findings were made and corrective actions completed.

No items of noncompliance or deviations were identified.

7. External Exposure Control

The licensee's external exposure control program remains as described in Report No. 50-346/81-11. According to licensee personnel, progress has been made in development of a computerized records system, but no implementation date has been established.

Inplace HEPA (DOP) and charcoal (freon) testing and laboratory charcoal (methyl iodide) testing was conducted in April through June 1982. Testing results show that HEPA and adsorber bank removal efficiencies are acceptable.

Operability and efficiency testing appear to have been adequately performed at the required frequency.

No items of noncompliance were identified.

12. Instruments and Equipment

Since the last inspection (October 1981), four National Nuclear Corporation portal monitors have been received and installed at the exit side of the guardhouse. These monitors each utilize three plastic scintillators, one in a foot panel and one in each side. Calibration of these monitors will be reviewed during a future inspection.

13. Solid Radioactive Waste and Transportation

The inspectors verified that the licensee possessed current requirements of the commerical burial sites and current copies of the Department of Transportation and Nuclear Regulatory Commission Regulations for the transfer, packaging, and transport of radioactive material.

Records of radwaste shipments for 1982 to date were reviewed for compliance with 49 CFR 170-189 and 10 CFR 71. Reports of quality assurance audits conducted since the last inspection (October 1981) were reviewed. No problems were noted.

The licensee is evaluating methods of providing additional packaged radwaste storage facilities. The current 250 drum outside storage pad has been sufficient, but additional space may be needed in the future.

In an effort to minimize solid radwaste volume, the licensee is restricting what may be taken into radiologically controlled areas. Also, the licensee plans to order a box compactor which compacts dry active waste into metal boxes.

No items of noncompliance were identified.

14. TMI Action Plan Item II.F.1 Attachment 3, Containment High-Range Radiation Monitor

Two sealed ion chamber gamma monitors with a maximum range of 10^8 rad/hr have been installed in containment. The monitors read out in the control room. The inspectors reviewed the preoperational testing of the monitors, including calibrations. The calibrations met the criteria specified in NuReg 0737. Reactor operator training is currently being conducted by the test engineer. Minor system testing deficiencies

concerning malfunctioning electronic components will be reviewed by the NRC Senior Resident Inspector when corrected. Upon adequate correction of the testing deficiencies, these monitors should satisfy the NuReg 0737 criteria.

15. Reactor Coolant System Leakage Detection Monitor

Reactor coolant system leakage detection monitors RE-2024 and RE-2025, which continuously sample and monitor the containment vessel atmosphere, have been replaced by a new broad range particulate, iodine, and noble gas monitoring and sampling system manufactured by Kaman Instrumentation Corporation.

The inspectors reviewed the testing and calibration of the particulate and noble gas portion of the new monitor's normal range, which is required for reactor coolant system leak detection by Technical Specification Table 3.3-6. During the inspection, the licensee was unable to verify that: (1) the monitors met the range requirements of FSAR 5.2.4.6; (2) the noble gas monitor had been adequately fluid calibrated and relatable secondary calibration methods had been established; and (3) the check source supplied for calibration of the particulate monitor was directly relatable to a primary calibration. These matters were discussed at the exit meeting. The licensee was informed that these matters required resolution before the plant entered Mode 4.

On August 12, 1982, by telecon, the licensee stated that the necessary onsite calculations had been completed and the calibration information received from the equipment vendor. This information was forwarded to the inspector for review. The forwarded information resolved the noted inspector concerns.

Since this instrumentation was not required for Modes 5 and 6, no items of noncompliance or deviations were found.

16. Facility Change and Design Reviews

Because of the problems concerning the detection range and calibration of the reactor coolant leakage detection monitors discussed in Section 15, the inspectors asked the licensee what technical and ALARA design reviews of this equipment had been performed by C&HP. According to the licensee, there is no formal procedure for chemistry and health physics group review of facility change requests and design packages for technical and ALARA considerations. The licensee stated that a new procedure, in the review process, is designed to formalize review requirements. The licensee stated that such reviews are now being performed by the C&HP group. This matter was discussed at the exit meeting.

17. Exit Meeting

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on August 6, 1982, and by phone with Mr. Briden on August 12, 1982. The inspectors summarized the scope of the inspection. In response tc inspector comments, the licensee:

a. Stated that the need to provide a better method of granting unescorted facility access to individuals with nuclear plant experience at other facilities would be reviewed. (Section 3)

b. Stated that the inspectors' concerns regarding requirements for and testing of the new reactor coolant leak detection instrumentation would be promptly investigated. This matter has since been resolved. (Section 15)

c. Acknowledged the inspector's comments concerning the need for C&HP department to perform technical and ALARA reviews of facility change requests and design packages. (Section 16)