

U. S. ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

Report of Environmental Monitoring Inspection

RO Inspection Report No. 050-346/74-08

Licensee: Toledo Edison Company  
Edison Plaza  
300 Madison Avenue  
Toledo, Ohio 43652

Davis Besse (Unit 1)  
Oak Harbor, Ohio

License No. CPPR-80  
Category: B

Type of Licensee: BW PWR 871 Mwe

Type of Inspection: Announced Preoperational Environmental  
Monitoring

Dates of Inspection: November 5-6, 1974

Dates of Previous Inspection: October 23-25, 1974 (Construction)

Principal Inspector:

*L. R. Greger*  
L. R. Greger

*11/29/74*  
(Date)

Accompanying Inspector:

*B. L. Jorgensen for*  
B. L. Jorgensen

*11/29/74*  
(Date)

Other Accompanying Personnel: R. L. Sullivan

*J. C. Pagliaro for*

*11/29/74*  
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*11/29/74*  
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## SUMMARY OF FINDINGS

Enforcement Action: None

### Licensee Action on Previously Identified Enforcement Items

No previously identified enforcement items within the scope of this inspection.

### Unusual Occurrences

None within the scope of this inspection.

### Other Significant Findings

#### A. Current Findings

This inspection included examinations of the licensee's preoperational radiological and non-radiological environmental monitoring programs. Two unresolved items were identified during this inspection: 1) the licensee will ask their contractor to substantiate the performance of gamma spectral analyses on precipitation samples containing in excess of 10 pCi per liter gross beta activity; 2) the licensee will attempt to retrieve and perform radium analyses on well water samples containing in excess of 3 pCi per liter gross alpha activity. (Paragraphs 5.a and 5.b)

#### B. Status of Previously Reported Unresolved Items

No previously reported unresolved items within the scope of this inspection.

### Management Interview

A management interview was conducted with Messrs. Evans, Stalter and Briden on November 6, 1974, and further by telephone with Messrs. Evans and Briden on November 8 and 19, 1974. The following items were discussed with the licensee representatives.

1. The inspectors discussed the general conduct of environmental monitoring and independent measurements inspections in addition to the scope of this specific inspection. The licensee was informed that another inspection would be conducted prior to commencement of plant operation at which time the licensee will be expected to have completed all preparations for implementation of the Appendix B Environmental Technical Specifications. The licensee acknowledged the inspector's comments. (Paragraphs 2 and 7)

2. The inspectors noted that the licensee was in the process of formulating implementing procedures encompassing licensee and contractor activities. (Paragraph 3)
3. The inspectors noted that preoperational terrestrial and aquatic non-radiological monitoring programs had been commenced during 1972 and 1973 and are to continue for two to five years subsequent to commencement of station operation at which time the scope of the programs would be re-evaluated. (Paragraph 4)
4. The licensee noted that it was their intent to update the radiological environmental monitoring program. (Paragraph 5.d)
5. The licensee stated that the sensitivity of the I-131 analysis for milk samples would be improved. (Paragraph 5.e)
6. The licensee agreed to remount their airborne I-131 collection traps so as to achieve vertical air flow. (Paragraph 5.f)

## REPORT DETAILS

### 1. Persons Contacted

J. Evans, Station Superintendent (Davis Besse)  
L. Stalter, Technical Engineer (Davis Besse)  
D. Briden, Chemistry and Health Physics Supervisor (Davis Besse)  
C. Mekbel, Assistant Engineer (Toledo Edison)  
W. Mills, Assistant Engineer (Davis Besse)  
P. Russel, Instrument Technician (Davis Besse)

### 2. General

This inspection consisted of an examination of the licensee's preoperational radiological and non-radiological environmental monitoring programs including sampling techniques and procedures, sample collection equipment and locations, and program results. Management control aspects including organizational structure, responsibilities and authorities, and administrative control were also examined. The licensee's FSAR and Construction Permit were used as the primary inspection criteria. The inspection did not include an examination of the licensee's contract laboratory personnel, equipment or procedures.

The licensee utilized Industrial Bio-Test Laboratories, Northbrook, Illinois to provide laboratory services for analysis of the radiological environs monitoring samples collected surrounding the Davis Besse site. Sample collections are performed by station personnel (except for three outlying sites which are serviced by personnel contracted to Industrial Bio-Test Laboratories). In addition to the Davis Besse station and Toledo Edison corporate staffs, the following groups are utilized to provide input to the non-radiological environmental monitoring programs: Center for Lake Erie Area Research, Ohio State University, Columbus, Ohio (aquatic monitoring) and the Environmental Studies Center, Bowling Green State University, Bowling Green, Ohio (terrestrial monitoring).

### 3. Procedural Controls

The licensee's administrative and procedural controls for implementation of the environmental monitoring programs to assure compliance with the monitoring requirements were examined. This examination included a review of the assignment of responsibilities and authorities for program management and implementation.

The licensee had, in various stages of preparation, formal procedures defining program administration, sample collections, equipment calibrations, and program audits. The licensee intends to review the contract laboratory's analytical procedures. These items will be examined further during a subsequent inspection.

4. Non-Radiological Environmental Monitoring

The non-radiological environmental monitoring program commenced in 1972 includes preoperational aquatic and terrestrial monitoring in the following specific areas: terrestrial flora, terrestrial fauna, soil and atmospheric environment, bird mortality, plankton and benthic organisms, fish and their feeding habits, lake hydrology, and water chemistry. Results of these monitoring programs through June 1974 were selectively reviewed by the inspectors. The licensee has apparently complied with the conditions for protection of the environment as contained in the Construction Permit. A final hydrologic survey of the lake bottom in the vicinity of the intake and discharge pipes is expected to be completed this year. The licensee intends to continue the preoperational aquatic and terrestrial monitoring programs through commencement of plant operations and subsequently for two to five years at which time the programs will be evaluated for their continuing usefulness. These areas will be examined further during subsequent inspections.

5. Radiological Environmental Monitoring

A preoperational radiological environmental monitoring program was initiated in the vicinity of the site in July 1972 and will be continued through plant operation. Results of the monitoring program through June 1974 were selectively reviewed by the inspectors. The licensee has apparently complied with the monitoring program as contained in the FSAR except as noted below.

- a. The FSAR program requires that groundwater samples be analyzed for radium if the gross alpha count is greater than 3 pCi per liter. Although several well water samples collected during 1973 and 1974 yielded gross alpha counts in excess of 3 pCi per liter, specific radium analyses were apparently not conducted. The licensee stated that the contract laboratory would be contacted and requested to perform specific radium analyses as specified in the FSAR in the future and that an attempt would be made to retrieve past samples and perform the specific radium analyses. This item will be examined further during a subsequent inspection.
- b. The FSAR similarly requires that precipitation samples be gamma scanned if the gross beta count is greater than 10 pCi per liter. Numerous precipitation samples collected during 1973 and 1974 yielded reported gross beta counts in excess of 10 pCi per liter. Gamma spectrographic results for these samples were not reported in the contract laboratory's reports. The licensee stated that the gamma analyses had been conducted and that the results of the analyses would be procured from the contract laboratory. This item will be examined further during a subsequent inspection.

- c. Clam samples apparently could not be located for collection during 1972 or 1973 but were located in 1974 (although the sampling locations were not as specified in the FSAR). The licensee intends to revise the FSAR to reflect the availability of the clams. The licensee was informed that the requirement for gathering sufficient preoperational data would be examined further during a subsequent inspection.
- d. It was noted that the licensee had not been collecting three species of wildlife semiannually as specified in the FSAR but rather had been collecting two species of indigenous animal life semiannually and one waterfowl sample on an annual basis. The licensee stated that the monitoring program as specified in the FSAR would be reviewed based upon discussions with AEC Licensing personnel and proposed Regulatory Guide 4.8 and would be revised accordingly. This item will be examined further during a subsequent inspection.
- e. At the request of the AEC in 1973, the milk monitoring program specified in the FSAR had been changed to 1) increase the sampling frequency at the nearest dairy farm from monthly to weekly (during the seasons that milking animals are on pasture) and 2) improve analytical sensitivity for the I-131 analyses to 0.5 pCi per liter at time of sample collection. The licensee had originally intended to implement these changes upon commencement of the operational phase of the monitoring program. The licensee was requested, and agreed, to commence I-131 analyses at the improved sensitivity during the pre-operational program in order to develop a basis for comparison of operational monitoring results. The licensee expected to commence analyses at the increased sensitivity by January 1975.
- f. The installation and operability of selected monitoring stations were examined. It was noted that the airborne samplers had been calibrated within the preceding three months. The samplers are equipped with inline charcoal traps for airborne I-131 collection. The traps were mounted such that the air flow through the charcoal was horizontal thereby allowing possible bypass flow if significant charcoal compaction were to occur over the weekly collection interval. The licensee had been following a rigid procedure for packing the sampler with charcoal in an attempt to prevent compaction and subsequent bypass airflow. The licensee stated that charcoal traps would be remounted such that the air flow through the charcoal would be in a vertical direction thereby eliminating any possibility of air channeling.

6. Meteorological Program

A new meteorological tower was placed into operation in August 1974; redundant meteorological data will be obtained from the old meter-

ological tower during a transition period. The remote data recording and readout equipment were not operational at the time of this inspection. No deviations from Regulatory Guide 1.23 were noted with respect to the parameters sampled, sample locations, and instrument maintenance and servicing schedules. Instrument accuracies and data recording, readout, reduction and compilation functions will be examined during a subsequent inspection.

7. Independent Measurements

The inspectors briefly discussed the independent measurements program as it will affect the licensee. Capability and verification testing procedures were explained. The inspectors stated that capability testing should be completed prior to fuel loading. The licensee agreed with the assessment of the inspectors that the capability testing procedures should be initiated three to six months prior to the projected fuel loading date to allow sufficient time for completion.