U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/85024(DRSS)

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 6-9, 1985

Inspector: M. Schumacher for A. G. Januska 8/22/85
Date

Approved By: M. Schumacher for M. C. Schumacher, Chief 8/22/85
Independent Measurements and Environmental Protection Section
Date

Inspection Summary

Inspection on August 6-9, 1985 (Report No. 50-346/84024(DRSS))
Areas Inspected: Routine, announced inspection of confirmatory measurements including a liquid sample split and laboratory quality control; followup of Performance Appraisal Team findings regarding review of procedures and adherence to procedures; and licensee followup on items identified in previous inspections. The inspection involved 33.5 inspector-hours onsite by one NRC inspector.
Results: One apparent violation was identified (Severity Level V, Supplement I violation - failure to implement a written procedure - Section 5).

## DETAILS

1. Persons Contacted

*L. Storz, Plant Manager
*W. O'Connor, Operations Superintendent
*T. Murray, Assistant Vice President, Nuclear
*S. Smith, Maintenance Supervisor
*M. Beier, Quality Engineering Supervisor
*S. Widman, Senior Licensing Specialist
*R. Scott, Chemistry and Radiochemistry Supervisor
*M. Horne, Health Physics Supervisor
J. Ferguson, Health Physics Specialist
W. Armstrong, Chemistry and Health Physics Foreman
W. Widenheft, Chemistry and Health Physics Group Leader
R. Edwards, Senior Chemistry and Rad Tester
R. Rogers, Senior Chemistry and Rad Tester
W. Frazer, Emergency Planning Supervisor

*Denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

a. (Closed) Unresolved Item (50-346/84-19-20): Failure to perform procedure specified actions for counting equipment that exceeded control limits on daily performance checks. Investigation of this item resulted in issuance of a citation as discussed in Section 5.

b. (Closed) Unresolved Item (50-346/84-19-21): Failure of Station Review Board (SRB) to review certain procedures used for analyses of liquid and gaseous effluents. Review of this matter with licensee representatives indicated that controlling and safety-related radiological procedures receive detailed review by the SRB. Other more detailed procedures, such as the ones in question, are regarded as instructions in the sense used in Regulatory Guide 1.33. Such procedures receive review by the Section Head (an SRB member) who forwards them to the SRB for decision as to the need for further SRB review. The station has maintained a computer listing of procedures and their SRB review status since preoperation. This practice appears to satisfy the licensees technical specifications and avoids overburdening the SRB with unnecessary detail.

c. (Closed) Open Item (50-346/84-21-01): Insure airflow in laboratory fume hoods is adequate. The licensee repaired the hoods, made face velocity measurements, and reported the results to Region III. During the inspection, the inspector noted that the hoods are marked specifying the maximum opening allowed during use.

d. (Closed) Open Item (50-346/84-21-02): Analyze liquid sample for H-3, Sr-89, Sr-90 and report results to Region III. Comparative results are presented in Table 1 and comparison criteria are outlined in Attachment 1. The inspector noted that the Sr-89 and Sr-90 results received from the licensee were reported as lower limit of detection (LLD) values that were higher than those allowed by Technical Specifications. Investigation into the reason for these results and the consequence of their use, performed during the inspection, revealed that (1) the size of the sample was much smaller than normal for this type of an analysis which will increase the LLD and (2) the results were not used for T/S related reporting. Further review of release data for 1984 and 1985 to date supplied by the licensee's analytical contractor verified that all liquid composite results reported were in compliance with T/S requirements in Table 2.4-1.

e. (Closed) Open Item (50-346/84-05-01): Prepare procedure defining responsibilities for implementation of 10 CFR 61 requirements. The inspector reviewed procedure AD 1842.00.6. Section 4.4.4 states "The Radwaste and Decon Supervisor is responsible for supervising radwaste disposal activities and ensure compliance to state and federal regulations pertaining to radwaste shipments."

f. (Closed) Open Item (50-346/84-05-02): Train auditors in area of 10 CFR 61 prior to conducting audits. Quality Assurance has a fully qualified auditor to perform radwaste audits. The individual appears to be qualified due to previous nuclear experience, certification in the National Registry of Radiation Protection Technicians and has attended a "Transportation Disposal Workshop" given by a waste disposer.

g. (Closed) Open Item (50-346/84-05-03): Prepare procedure for the tracking of shipments to burial site and investigation of lost shipments. A major modification of HP 1607.01 "Shipping Radioactive Materials" was made which addresses requirements of 10 CFR 20.311 retracking of shipments and investigation of lost shipments.

3. Confirmatory Measurements Sample Split

A sample of a Detergent Waste Drain Tank was split with the licensee. The licensee agreed to analyze his portion for gamma emitters, gross beta, H-3, Sr-89 and Sr-90, and report the results to Region III (Open Item 50-346/85024-01).

No violations or deviations were identified.

4. Audits

The inspector reviewed TED QA Audits No. 1370 and No. 1407 dealing with compliance of the licensee's analytical contractor to his QA manual and radwaste management. All audited areas appeared to be acceptable.

No violations or deviations were identified.

5. QA/QC of Analytical Measurements

An unresolved item reported as the result of a Performance Appraisal (PAS) inspection regarding Quality Control was investigated during this inspection. A review of daily instrument check log sheets and the graphic presentation of source counts for Beta Counter No. 2.7.61 substantiated that during the period of April 17 and June 27, 1984 the licensee failed to (1) perform recounts on 11 of 13 occasions after source counts were outside the ± 3s boundary and (2) tag out the instrument for checkout or recalibration when a count could not be obtained that fell within the ± 3s boundary. This appears to be a violation of licensee procedure RC 4528.00.3, "Efficiencies for Radiation Detectors," and, thereby, with Technical Specification 6.8.1.a which requires adherence to procedures for control of measuring and test equipment. (Violation 50-346/85024-02)

Daily instrument check log sheets from August 1984 to date for Beta Counter No. 2.7.61, and an alpha, a beta and a liquid scintillation counter in the counting room were selectively reviewed. Since the PAS inspection very few instances of not plotting a daily test were noted and in no case was a value > ± 3s not plotted. In addition the gamma spectroscopy system QC data was reviewed. A daily energy check is performed for nine energy lines from 121 to 1407 kev in accordance with RC 4502.00 and net count areas for 344 and 1408 kev are plotted. Both tests have limits which require recalibration or direct the analyst to "stop measurement." All data examined was current and complete.

A Senior Chemistry and Rad Tester assigned the QC overview performs a daily verification of QC checks and arranges for repair and calibration of equipment when needed. Discussion with this individual and an examination of the daily QC review indicate a positive effort has been made to prevent a recurrence of the above reported violation.

The licensee revised RC 4528.00.3 to strengthen the requirement to complete definite actions if a result fails outside the ± 3s boundary. The inspector discussed the benefit of dividing this procedure into an efficiency and a QC procedure and expanding the QC procedure to describe the QC review. Also discussed was a method of communicating to an analyst who finds and notes an instrument beyond ± 3s the steps taken to return it to service. The licensee acknowledged the inspectors comments.

The licensee participates in a quarterly cross check program for gross alpha, gross beta, H-3, Sr-89, Sr-90 and gamma emitters in liquid with a contractor. As a result of two consecutive nonconservative disagreements for Ce-141 in 1984 an instruction dealing with multiplet resolution of Ce-141 was issued and no further disagreements occurred. Gross alpha and gross beta analyses have had instances of repetetive disagreements but the last result examined (second quarter 1985) contained all agreements.

One violation was identified in this area.

6. Exit Interview

The inspection findings were discussed with licensee representatives (Section 1) at the close of the inspection on August 9, 1985. The inspector discussed the investigation of an unresolved item now considered an apparent violation of T/S 6.8.1.a which was identified in a 1984 PAS inspection.

The QC program since the PAS inspection was also discussed and comments made by the inspector acknowledged.

During the exit interview, the inspector discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. Licensee representatives did not identify any such documents or processes as proprietary.

Attachments:
1. Table 1, Confirmatory Measurements Program Results - 3rd Quarter 1984
2. Attachment 1, Criteria for Comparing Analytical Measurements

TABLE 1

U S NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

CONFIRMATORY MEASUREMENTS PROGRAM
FACILITY: DAVIS-BESSE
FOR THE 3 QUARTER OF 1984

| | | ------NRC------- | | ----LICENSEE---- | | ---LICENSEE:NRC---- | | |
|---|---|---|---|---|---|---|---|---|
| SAMPLE | ISOTOPE | RESULT | ERROR | RESULT | ERROR | RATIO | RES | T |
| L WASTE | H-3 | 1.7E-01 | 1.0E-03 | 1.3E-01 | 0.0E-01 | 1.1E 00 | 1.7E 02 | A |
| | SR-89 | 2.1E-07 | 1.6E-08 | <2.2E-07 | 0.0E-01 | 1.1E 00 | 1.3E 01 | A |
| | SR-90 | 1.5E-08 | 5.0E-09 | <3.4E-07 | 0.0E-01 | 2.2E 01 | 3.0E 00 | N |

T TEST RESULTS:
A=AGREEMENT
)=DISAGREEMENT
*=CRITERIA RELAXED
N=NO COMPARISON

ATTACHMENT 1

CRITERIA FOR COMPARING ANALYTICAL MEASUREMENTS

This attachment provides criteria for comparing results of capability tests and verification measurements. The criteria are based on an empirical relationship which combines prior experience and the accuracy needs of this program.

In these criteria, the judgment limits are variable in relation to the comparison of the NRC's value to its associated one sigma uncertainty. As that ratio, referred to in this program as "Resolution", increases, the acceptability of a licensee's measurement should be more selective. Conversely, poorer agreement should be considered acceptable as the resolution decreases. The values in the ratio criteria may be rounded to fewer significant figures to maintain statistical consistency with the number of significant figures reported by the NRC Reference Laboratory, unless such rounding will result in a narrowed category of acceptance.

| RESOLUTION | RATIO = LICENSEE VALUE/NRC REFERENCE VALUE |
|---|---|
| | Agreement |
| <3 | No Comparison |
| ≥3 and <4 | 0.4 - 2.5 |
| ≥4 and <8 | 0.5 - 2.0 |
| ≥8 and <16 | 0.6 - 1.67 |
| ≥16 and <51 | 0.75 - 1.33 |
| ≥51 and <200 | 0.80 - 1.25 |
| ≥200 | 0.85 - 1.18 |

Some discrepancies may result from the use of different equipment, techniques, and for some specific nuclides. These may be factored into the acceptance criteria and identified on the data sheet.