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

REGION III

Report No. 50-346/79-16

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: July 9-12 and August 9, 1979

Inspector: L. R. Greger LRGreger 8/30/79

Approved By: L. R. Greger, Acting Chief LRGreger 8/30/79
Fuel Facility Projects and
Radiation Support Section

Inspection Summary

Inspection on July 9-12 and August 9, 1979 (Report No. 50-346/79-16)
Areas Inspected: Routine, unannounced inspection of radioactive waste systems, including: effluent releases, records and reports of effluents; effluent control instrumentation; procedures for controlling releases; containment air-cleaning systems; reactor coolant water quality; solid radioactive waste; and licensee action on previous inspection findings. The inspection involved 60 inspector-hours onsite by one NRC inspector.
Results: Of the eight areas inspected, no items of noncompliance or deviations were found in seven areas; one apparent item of noncompliance was found in the remaining area (infraction - failure to review and approve procedures - Paragraph 11).

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DETAILS

1. Persons Contacted

**D. Briden, Chemist and Health Physicist
D. Eldred, I&C Coordinator
J. Greer, Quality Assurance Supervisor
J. Hodgson, Assistant Engineer
*W. Mills, Chemical and Radiation Protection Engineer
**T. Murray, Station Superintendent
J. Rudolf, Assistant Engineer
*R. Scott, Chemistry and Radiochemistry Supervisor
J. Zell, Operations Support Engineer

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

*Denotes those attending July 21, 1979, exit interview only.
**Denotes those attending both July 21 and August 9, 1979, exit interview.

2. General

This inspection, which began at 12:45 p.m. on July 9, 1979, was conducted to examine the licensee's radioactive waste program and related activities for compliance with regulatory requirements. The inspection included review of licensee records and reports, discussions with licensee personnel, and observation of plant activities by the inspector.

3. Licensee Audits

The inspector reviewed the licensee's audit activities pertaining to the radwaste management program since the previous radwaste inspection (July 1978). No formal audits were conducted during this period. With one exception, the corrective actions from the previous radwaste management audit (Report No. 534) had been completed. This item will be reviewed further during a future inspection.

No items of noncompliance or deviations were identified.

4. Radioactive Liquid Effluent

The inspector selectively reviewed the licensee's Liquid Release Permits and monthly computer release summaries for the period from July 1978 through July 1979. No releases exceeding the technical specification limits were identified. Liquid releases averaged less than 1% of the technical specification limits over the period reviewed. Liquid effluent quantification consists of prerelease gross beta and

gamma isotopic analyses and analyses of composite release samples for tritium, gross alpha, strontium-89 and strontium-90. The licensee continues to calculate MPC fractions for releases based on gamma isotopic and gross beta analyses. A minor inconsistency in use of the gross beta results continues. The inconsistency has not significantly affected compliance with the technical specification requirements. No discrepancies from the technical specification surveillance requirements were identified.

- Although no positive controls exist to prevent exceeding the ten-curie technical specification limit for certain radwaste tanks, no evidence that the limit has been exceeded was identified.

The liquid radwaste treatment equipment has operated satisfactorily during the preceeding 12 months. Several radwaste pumps failed during or shortly after system startup and were replaced with substitute pumps. The original type pumps have not yet been received for reinstallation. One (of two) boric acid evaporator continues to be out of service (since startup) in need of parts, including pumps. An additional DWDT isolation valve, necessitated because of leakage by the installed isolation valve, had not yet been installed.

The turbine building sump is normally automatically pumped to the storm drain system, which is monitored, for release. No radioactive liquid is intentionally routed to the secondary side of the plant. In case of identified steam generator leakage, the turbine building sump would be taken off automatic control and batch released after sampling. If radioactivity is detected in the turbine building sump, the condensate backwash receiving tank, or the condensate demin holdup tanks, the tank contents can be routed to the radwaste system for treatment.

No items of noncompliance or deviations were identified.

5. Radioactive Airborne Effluent

The inspector selectively reviewed the licensee's airborne gaseous, particulate, and iodine sampling and release records for the period from July 1978 through July 1979. No releases exceeding the technical specification limits were identified. Airborne releases continued to average less than 1-2% of the technical specification limits. Quantification methods remain unchanged from those reported in a previous inspection report. Gaseous effluents via the plant vent are quantified from grab samples. The licensee will develop a method for insuring that significant anomalous releases occurring between the grab samples are quantified. This matter will be reviewed further during a future inspection.

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Except for air ejector gamma and tritium sampling, no discrepancies from the technical specification surveillance requirements were identified. The air ejector monitoring system was inoperable during most of the period reviewed during this inspection. Consequently, sampling of air ejector exhaust has not been conducted. This omission has been documented by the licensee.

The gaseous radwaste treatment equipment continues to operate satisfactorily. Approximately two waste gas decay tanks are released and one containment purge is conducted per month. Although no positive controls exist to prevent exceeding the 45,000 curie technical specification limit per waste gas storage tank, no evidence that the limit has been exceeded was identified.

Several minor inconsistencies were identified in Procedure AD 1805.03. These items were discussed with licensee personnel and will be reviewed during future inspections.

No items of noncompliance or deviations were identified.

6. Effluent Reports

The inspector reviewed the licensee's semiannual radioactive effluent reports for 1978. Selective comparison of the reported radioactive effluents with the licensee's analysis records did not reveal any discrepancies.

No items of noncompliance or deviations were identified.

7. Effluent Control Instrumentation

Gaseous and liquid effluent and process monitor surveillance records for the period from June 1978 through June 1979 were selectively reviewed for compliance with the technical specification requirements for operability, trip setpoints, calibrations, and testing. Except as noted below, no surveillance discrepancies were noted.

Monitors RE 744 (condensate demineralizer backwash pump discharge) and RE 1003A&B (condenser vacuum pump discharge) were out of service for at least part of the time period reviewed. With these exceptions, the licensee's records indicate that calibrations and functional tests were performed at the required frequencies. The condenser vacuum pump discharge monitors were in service at the time of this inspection. The status of other process monitors which have experienced problems in the past[1/] was as follows (at time of inspection):

a. Containment post-accident monitors (RE 5029 and 5030) - operating; but modification or replacement of pump necessary for reliability.

1/ IE Inspection Report No. 50-346/79-03.

b. Service water monitor (RE 8432) - operating; modification completed.

c. Unit storm sewer monitor (RE 8442) - remains inoperable; a change in the monitor location is being pursued.

The acceptability of a 50.59 review performed by the licensee in response to a previous noncompliance citation regarding RE 1003A&B[2/] has not been resolved. This item will be reviewed further during a future inspection. Specific calibration techniques were not reviewed during this inspection. These items will be reviewed in detail during a future inspection.

No items of noncompliance or deviations were identified.

8. Procedures for Controlling Releases

The inspector reviewed those revisions to effluent control procedures effected since the previous radwaste inspection (July 1978) for adherence to the licensee's procedure control system and for their effect on the licensee's radwaste management program. The changes do not diminish the effectiveness of the licensee's radwaste program. The specific items noted in the previous inspection report of radwaste activities (50-346/78-18) had been reviewed by the licensee and acted upon as necessary.

No items of noncompliance or deviations were identified.

9. Reactor Coolant Water Quality

The inspector selectively reviewed licensee records for compliance with technical specification requirements for reactor coolant activity and radiochemistry surveillance.

Primary coolant activities typically have remained less than 0.1% of the technical specification limits for both dose equivalent I-131 and gross activity. Typical EBAR values have averaged about 0.5 MeV. No radioiodine has been detected in the secondary coolant. No discrepancies from the radiochemistry surveillance requirements were identified.

No items of noncompliance or deviations were identified.

10. Air Cleaning Systems

The inspector selectively reviewed the operability and surveillance records for the following ventilation systems for the period since the previous radwaste inspection (July 1978): containment purge, containment recirculation and cooling, containment hydrogen purge,

2/ IE Inspection Report No. 50-346/78-18.

emergency ventilation, control room emergency ventilation, radwaste ventilation, refueling ventilation and laboratory hood ventilation.

The most recent inplace HEPA (DOP) and charcoal (Freon) testing and laboratory charcoal (methyl iodide) testing was conducted in April 1978. The results of this testing was reviewed previously.[3/] According to the licensee's records, the containment purge supply and/or exhaust isolation valves were open for approximately 22 hours during the preceding 365 days (90 hours allowed in modes 1-4).

There are no radiation monitors in the containment cooling and recirculation ventilation systems. Therefore the systems are not susceptable to inadvertent isolation due to high ambient radiation levels.

No items of noncompliance or deviations were identified.

11. Solid Radioactive Waste

The licensee continues to utilize a contractor to solidify radwaste (principally evaporator bottoms). The solidification process (urea formaldehyde - UF) is performed in shipping liners located in the refueling building track alley. Approximately two to three liners are processed per month. According to the licensee's records, approximately one curie of processed radwaste was shipped to licensee burial sites during the period from July 1978 through July 1979. In addition to the UF solidified radwaste, about 4 curies of dry waste was shipped to licensed burial sites during the same period.

Although the contractor was following written procedures for the UF solidifications, these procedures had not been reviewed and approved by the licensee. Such review and approval is required by Technical Specification 6.8.2. This is a noncompliance item.

One type B shipment of radioactive material was made during the period reviewed. No discrepancies from the NRC regulatory requirements pertaining to type B shipments were identified.

It was noted, however, that the licensee's records of the determinations required by 10 CFR 71.54 needed revision to more clearly reflect the results of the required determinations. This item was discussed in the exit interview.

12. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) on July 21 and August 9, 1979. The inspector summarized the scope and findings of the inspection including the noncompliance item. In response to certain items discussed by the inspector the licensee:

3/ IE inspection Report No. 50-346/78-18.

a. Acknowledged the inspector's remarks that the usefulness of the monthly computer summary would be enhanced by the addition of a printout of the "% MPC" for each batch. (Paragraph 4)

b. Stated that a procedure would be adopted to quantify significant anomalous gaseous releases from the plant vent (i.e., releases occurring during the interval between grab samples). (Paragraph 5)

c. Acknowledged the inspector's remarks that the liquid release hand calculation described in procedure AD 1850.01 is not in total agreement with the results of the computerized calculation. (Paragraph 4)

d. Agreed to formally evaluate the alarm setpoint for RE 5052 to confirm that the alarm setpoint is adequate to secure the release before the technical specification limit is exceeded. (Paragraph 7)

e. Stated that the minor problems noted in procedure AD 1805.03 would be resolved. (Paragraph 5)

f. Stated that the record system for type B shipments would be reviewed and revised to ensure that the items specified in 10 CFR 71.62 are easily identifiable. (Paragraph 11)

g. Acknowledged the inspector's comments that urea formaldehyde solidified radwaste is known to potentially contain significant quantities of free water. As such, unless the absence of free water can be reasonably assured, the waste must be shipped and transferred in accordance with DOT and NRC regulations pertaining to free water. (Paragraph 11)

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