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

REGION III

Report of Operations and Preoperational Radiological Protection Inspection

IE Inspection Report No. 050-346/75-22

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: PWR (B&W) 906 MWe

Type of Inspection: Routine, announced

Dates of Inspection: December 1-3, 1975

Principal Inspector: R. Martin 12/18/75 (Date)

Accompanying Inspectors: R. C. Knop 12/18/75 (Date)

L. R. Greger 12/19/75 (Date)

Other Accompanying Personnel: None

Reviewed By: R. C. Knop, Section Leader
Reactor Projects No. 1
12/22/75 (Date)

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SUMMARY OF FINDINGS

Inspection Summary

Inspection on December 1-3, 1975, (75-22): Review of status of preoperational test program, flushing program and test procedure development; reinspection of corrective actions taken by licensee with respect to previous items of noncompliance; review of status of radiological protection procedures, facility preparation, instrumentation receipt, and training program. No new items of noncompliance identified during this inspection.

Enforcement Action

No items of noncompliance with NRC requirements were identified during this inspection.

Licensee Action on Previously Identified Enforcement Items

A. IE Inspection Report No. 050-346/75-05

The inspector verified that the corrective action described in the licensee response had been completed. This item is considered to be closed. (Paragraph 7.a, Report Details)

B. IE Inspection Report No. 050-346/75-17

The inspector determined that the corrective action for the deviation had been completed. This item is closed. (Paragraph 7.b, Report Details)

The inspector noted corrective action for the infraction has been completed except that the instruction to the TECo staff regarding witness points had not been documented. This item remains open.

C. IE Inspection Report No. 050-346/75-19

The inspector determined that corrective action for both deficiencies had been completed except the instructions given flushing participants and Tagging Supervisors was not documented. This item remains open. (Paragraph 7.c, Report Details)

Other Significant Findings

A. Systems and Components

SFAS cabinets being readied for preoperational testing. Testing

expected to begin in two to three weeks. Reactor vessel being readied for trial fit-up of vessel internals.

B. Facility Items (Plans and Procedures)

Licensee indicates all Administrative Procedures are now in some stage of development. No identified procedures remain to be drafted. When completed, an Administrative Procedures Manual will be issued and controlled in a manner similar to the licensee's Quality Assurance Manual.

C. Managerial Items

None identified during this inspection.

D. Noncompliance Identified and Corrected by Licensee

None identified during this inspection.

E. Deviations

None identified during this inspection.

F. Status of Previously Reported Unresolved Items

1. The commitment of the licensee to establish a method for assuring the sampling of systems in a lay-up status (Inspection Report No. 050-346/75-14) was reviewed during this inspection. (Paragraph 8, Report Details) No significant deficiencies were noted and this matter is considered closed.

2. Inspection Report No. 050-346/75-14 (Page 3) indicated that the licensee was to clarify the types and numbers of operator licenses to be obtained by the staff members reporting to the Technical Engineer. The inspector noted that he had received Revision 16 to the facility FSAR and that this matter was resolved based on that revision.

3. Inspection Report No. 050-346/75-12 (Page 2) noted that the FSAR described the fire protection system jockey pump as a 30 gpm unit while a 12 gpm unit was installed. The inspector noted that he had received Revision 16 to the FSAR which changed the description to agree with the installed equipment. This matter is considered resolved.

4. Inspection Report No. 050-346/74-09 (Page 4) indicated that the licensee would review the job descriptions of personnel at the site and the type of operator license they would obtain and would resolve with the office of Nuclear Reactor Regulation

any questions raised by this review. The inspector noted that he had received Revision 16 to the FSAR which clarified these matters. This item is considered resolved.

Management Interview

A. At the conclusion of the inspection, management interviews were conducted with Mr. Murray, Operations Engineer and members of the licensee's staff.

B. Matters discussed and comments were as follows:

Management interview of December 2, 1975:

1. The inspector summarized the review he conducted to assess the licensee responses to enforcement items. (Paragraph 7, Report Details) The inspector summarized those aspects of this review which will remain open.

2. The inspector summarized his review of the system by which the licensee will control the chemistry of systems placed in a "lay-up" status. (Paragraph 8, Report Details)

3. The inspector summarized his review of the licensee's method to protect turned over circuits from unintentional modification during construction activities. He indicated his concern that the systems by which systems or components are returned to construction for repair or modification still do not adequately assure that such repairs or modifications will receive an appropriate review of matters such as protection of system cleanliness, continued validity of previous test results, and the extent of new or repeated testing which may be required. The licensee acknowledged the inspector's comments and agreed to look into the matter further.

4. The inspectors noted that a substantial number of radiation protection related procedures remained to be completed. (Paragraph 13, Report Details)

5. The licensee agreed to revise the area radiation monitor calibration procedure to include calibration points within the normal operating range of the instruments. (Paragraph 15, Report Details)

6. The inspectors acknowledged the progress made by the licensee in receipt and installation of radiation related instrumentation. (Paragraph 15, Report Details)

7. The inspector stated that he would inspect the licensee's radwaste equipment early in 1976. The licensee stated that current

projections called for the radwaste systems to be completed by approximately March, 1976.

Management Interview of December 3, 1975:

1. The inspector indicated that he had conducted a tour of the facility to observe the status of preparations for preoperational testing.

2. The inspector indicated that he had conducted a walk-down of a portion of the service water system accompanied by the Test Leader for the service water system preoperational test.

   a. The inspector understands that the source valves mounted on restricting orifices in the return headers, (Paragraph 2.b, Report Details) have been added to the Master Punch List. The inspector cautioned the licensee to periodically reinstruct personnel conducting walk-downs to assure that the system and the Master Punch List are in accord rather than just verifying that the items on the Punch List appear on the system being turned over.

   b. The inspector understands that NCR-768 (Paragraph 2.c, Report Details) is being added to the Master Punch List. The inspector requested and received a commitment that the licensee would (1) review the circumstances which permitted this NCR to be on the system for a prolonged period without being added to the punch list and (2) would review for adequacy the recently instituted system to preclude repetition of (1). This matter will be followed closely by the inspectors.

3. The inspector indicated that he had received a briefing on the status of Test Program Planning.

4. The inspector reviewed the status of the Flushing Program. The inspector requested and received commitments on the following issues:

   a. The licensee will review and appropriately approve the cleaning methods being used on containment vessel penetrations such as the vacuum relief valves and the ventilation system ductwork which is not covered by cleaning procedures.

   b. The licensee will review and determine appropriate steps to be taken to assure that the previously

performed construction cleaning of the core flood tank systems has not been compromised prior to completing the appropriate cleaning procedure documentation.

5. The inspector reviewed the activities of the Quality Assurance Quality Control groups relative to preoperational testing activities. The inspector indicated that subsequent to the inspection, he would contact the Manager of Quality Assurance to obtain a commitment relative to providing a management method by which regular completion of the audit and surveillance activity commitments of the licensee can be assured. (By telephone conversation of December 8, 1975, the inspector requested and received such a commitment from the licensee).

6. The inspector indicated that he had provided comments on selected test procedures to staff members of the licensee.

REPORT DETAILS

Persons Contacted

The following persons were contacted during this inspection:

Toledo Edison Company

J. Evans, Station Superintendent
T. Murray, Operations Engineer
D. Briden, Chemist and Health Physicist
W. Green, Assistant to Superintendent
B. Beyer, Maintenance Engineer
J. Orkins, Instrument Engineer
S. Kensicki, Test Leader
W. Mills, Assistant Engineer
L. Grime, Inspection Engineer
K. Cantrell, Operations Quality Assurance Engineer
P. Narducci, Quality Control Engineer
J. Buck, QA Staff member
R. Franklin, Training Coordinator

Bechtel (Startup)

T. Reddaway, Project Startup Engineer
J. Landon, Flushing Coordinator

Babcock and Wilcox Company

E. Michaud, Test Program Manager

Results of Inspection

1. Facility Tour

The inspector conducted a tour of the auxiliary and containment buildings to observe the degree of completion of various systems and the activities in progress related to preoperational testing.

2. Service Water System

The inspector conducted a walk-down of a portion of the Service Water (SW) system including the pump strainers, main supply and return headers, and associated piping to the Component Cooling Water Heat Exchangers. Copies of the master punch list appropriate to these systems were available for review during this walk-down. The following observations are noteworthy.

a. The inspector expressed concern over the adequacy of the piping supports for the portion of the SW piping located at the west end of the service water tunnel. The Bechtel Startup personnel provided the inspector with a copy of a hanger certification which indicated that the temporary and installed hangers located on the system at the time of turn-over to the licensee had been analyzed as being adequate for all planned hydrostatic and preoperational testing. The inspector was informed that such certifications are provided by the construction management for each fluid system released to the licensee for testing. The inspector indicated that this information would be reviewed further.

b. The inspector observed that four small temporary source valves were located on the taps of the orifice flanges which hold the two restricting orifices in the SW system return headers. These valves were not shown on the drawings or the system punch list. Discussions with the licensee led the inspector to caution the licensee that his personnel should exercise diligence in assuring that the punch list utilized during system turn-over walk-downs adequately reflects the as-found conditions of that system. The inspectors were informed that these valves were added to the punch list during the inspection to assure that their disposition would be resolved.

c. The inspector noted a "hold" tag on the cable to the strainer motor on SW strainer 1-3. This tag referred to NCR-768 identified on September 17, 1975. Inspection of the punch list did not disclose any reference to this NCR. This NCR had been written by Bechtel Construction Management (BCM) personnel subsequent to turnover of the system, and approximately 2½ months prior to this inspection. The inspector was informed that the Project Startup Engineer was added only recently to the distribution of the weekly report which summarized NCR's written by BCM. The staff of the start-up Engineer is now reviewing these reports to identify NCR's written against turned-over equipment, and will add these to the affected punch lists. The inspector requested and received a commitment that the licensee will review the adequacy of the above procedure and all other related procedures to provide sufficient assurance that NCR's written after a system has been turned over will be reflected in the master punch list for that system.

3. Test Program Status

The inspector was given a status report on the preoperational test program. He was informed that the SFAS cabinets had been

turned over during this inspection and that preoperational testing was likely to begin in two to three weeks. No preoperational tests have been conducted since the last operations inspection. The inspector was given an updated copy of the schedule for the project based on data current as of November 3, 1975. The inspector informed the licensee that the recent FSAR Revision 16, which changed the classification of the fuel oil transfer system, will require that this system now be given a preoperational rather than an acceptance type of test. The licensee acknowledged that he understood that to be the case.

4. Flushing Program

The inspector reviewed the status of the flushing program.

The inspector determined that cleaning of the vacuum breakers and the ventilation penetrations into the containment building are being cleaned on the basis of verbal instructions from the flushing coordinator. The inspector requested and received a commitment from the licensee that these instructions would be documented, and would receive appropriate review to assure that the cleaning methods being used will not have deleterious long-term effects on these penetrations. The inspector will review the adequacy of the licensee's actions during a subsequent inspection.

The inspector learned that the core flood tank systems were construction cleaned, but the appropriate documentation (the control copy of the cleaning procedure) was not completed. (The construction cleaning of this system is to be accepted as the final cleaning). Moreover, the inspector learned that water from the reactor vessel, during the vessel baseline inspection, leaked past a line seal into one of the 14-inch core flood lines. The inspector requested and received a commitment from the licensee that an appropriate evaluation of the present state of cleanliness of the core flood system will be conducted and reviewed prior to completing the documentation accepting the system as clean. The actions of the licensee in this matter will be reviewed during a subsequent inspection.

5. QA/QC Department Activities

The inspector reviewed the activities of the QA/QC department personnel relative to preoperational testing. The authority and responsibilities of QA/QC personnel, surveillance audits and inspection activities, the involvement of QA/QC personnel in corrective actions taken relative to test deficiencies, and QA/QC personnel training were discussed. The inspector determined the following:

a. Instructions for quality control personnel are still under

development. The inspector will follow the progress of the licensee in this area.

b. Neither the surveillance activities of the QC staff nor the audit activities of the QA staff are controlled by a management control method which would assure that the functional areas for which the licensee has made surveillance and audit commitments will be covered on a regular basis. (By telephone conversation of December 8, 1975, the inspector requested and received a commitment from the licensee that a suitable control method would be developed.

6. Test Procedure Reviews

The inspector provided comments on the following test procedures to staff members of the licensee:

TP 120.01	Fuel Handling System Preoperational and Functional Test.
TP 120.02	Fuel Handling System Dry Handling and Indexing Test.
TP 200.02	Surveillance and Radiation Specimen Handling Functional Test.
TP 200.16	Pressurizer Level Verification.
TP 203.08	BWST Preoperational Test.
TP 205.03	High Pressure Injection System Functional Test.
TP 220.03	Spent Fuel Pool Cooling and Purfication System Preoperational Test.
TP 2400.26	Containment Radiation Level Inputs to SFAS Preoperational Calibration.

7. Followup on Items of Noncompliance

During record reviews, observations and discussions with the licensee, the inspector verified the distribution, review, and timeliness of the licensee response to enforcement items. The inspector determined that the status of corrective action was as follows:

a. IR - No. 050-346/75-05

In response to item B.1 and B.3 the inspector determined that the FSAR had been revised as stated in the response.

In response to item B.2 that TP 401.01.1 had been approved by the Manager QA.

The inspector verified that the administrative procedures had been approved as stated in response to item B.4.

b. IR - 50-346/75-17

(1) Deviation - The inspector verified that all of the QAPs had been approved as stated in the licensee's response.

(2) Infraction - The inspector verified that QCI-3102 had been issued as stated in the response and that one of the two auditors in question had been certified in accordance with that procedure. The other individual is no longer acting in an auditors capacity.

The inspector determined that the QC individual for the witnessing of hold points did have the proper training and experience, but that his certification was not completed properly. The licensee stated the certification would be corrected.

The inspector determined that instruction to the QC staff had not been completed as stated in the licensee response. An unapproved draft of the instruction (QCI-3110) was reviewed by the inspector and appeared adequate. The Quality Control Engineer stated that the instruction would be issued prior to any witness or hold points being performed by the QC staff. This item remains open.

c. IR - 50-346/75-19

The inspector determined that the corrective action was as stated in the licensee response except that instructions to the flushing participants and tagging supervisors was not documented. The licensee stated that this would be completed immediately. This item remains open.

8. Lay-up of Flushed Systems

During a previous inspection[1/] a commitment was received from the licensee stating that a method would be developed for determining lay-up status and sampling requirements for flushed systems.

During this inspection it was noted that AD 1835.00 was revised to include requirements to be included in site flushing procedures. These requirements included method of lay-up, recirculation frequencies (if any) and sampling requirements.

1/ IE Inspection Rpt No. 050-346/75-14.

A review of three flushing procedures indicated that these requirements were included. The inspector stated that the implementation of the sampling program would be reviewed during a subsequent inspection.

9. Control Over Previously Tested Components

During a previous inspection[2/] the licensee stated that further controls would be implemented to ensure that tested circuits would not be disturbed without formal subsequent testing.

The inspector reviewed AD 1803.01 (Control of Electrical Circuits After Interim Release) during this inspection. The inspector stated that the method of markings for turned over systems appeared to be adequate; however, the methods of turning the equipment back to construction, maintaining quality control, and subsequent retesting of the systems were not adequate.

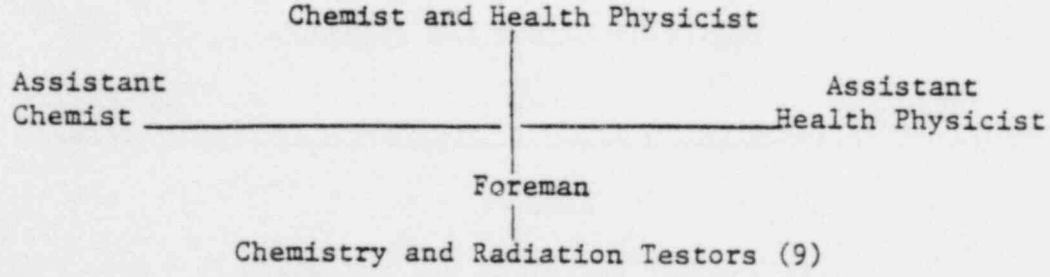
The licensee stated that the inspector's concern would be reviewed.

10. Radiological Protection Program

The licensee's administrative and procedural controls for implementation of the radiation protection program were examined during this inspection. This examination included a review of management control aspects, including organization structure, responsibilities, and authorities. The status of radiation protection training activities, facility construction, and instrument and equipment acquisition was also examined.

11. Radiological Protection Organization

The licensee's Chemistry and Health Physics Department organization remains unchanged from the previous radiation protection inspection. The assistant Health Physicist position remains unfilled. All other department positions are currently filled. The departmental organization is as follows:



The licensee's audit program will include both internal (Davis-Besse) and external (Toledo Edison) audits of radiation protection activities. Contractor audits are to be performed by the Toledo

2/ IE Inspection Report No. 050-346/75-06.

Edison quality assurance organization. The audit activities will be examined further during a subsequent inspection.

12. Radiological Protection Training

Since the preceding radiation protection inspection, chemistry and radiation protection personnel have received only general and refresher training. According to licensee personnel, specialized radiochemistry training will be conducted soon. The radiation safety portion of the general orientation training has essentially been completed for station personnel. The five subparts of the general orientation training (radiation safety, industrial safety, station security, quality assurance, and station emergency plan) are in the process of being videotaped for training of contractor personnel as well as new station employees. The licensee's procedures require an annual requalification in the five areas covered by the general orientation training. According to the licensee, station personnel (other than clerical) have received additional health physics training totaling approximately sixty hours.

13. Radiological Protection Procedures

Approximately one third of the licensee's radiation protection related procedures remain to be completed. The inspector reviewed the licensee's "Radiation Protection Manual" and the following procedures which had been finalized since the preceding radiation protection inspection.

"Guides and Limits for Airborne Radioactivity" (HP 1601.02)
"Methods to Reduce Radiation Exposure" (HP 1601.05)
"Process and Area Radiation Monitoring System Test" (TP 0360.01)

No major discrepancies were noted during the reviews. The required review and approval procedures were noted to have been followed for the basic procedures as well as for several recent procedure revisions.

14. Radiological Protection Facilities

The licensee's access control area, counting room, laundry, radiochemical laboratory, and calibration room were examined during this inspection. First aid and health physics monitor rooms, protective clothing storage, survey instrument storage, portal monitors, hand and foot monitors, decontamination wash fountains and showers, and locker facilities are contained within or adjacent to the access

control area. The facilities examined were in conformance with the descriptions contained in the FSAR.

15. Radiological Protection Instrumentation and Equipment

The licensee has received most of the expected inventory of portable survey instrumentation. Approximately one dozen survey instruments and two airborne monitors remain to be received. Approximately 50% of the licensee's counting room equipment is on site and in various stages of installation. Respiratory protection equipment has been ordered but has not yet arrived onsite. Protective clothing has likewise been ordered; some, but not all, has arrived onsite. Planned equipment inventories, which conform to the FSAR commitments, appear to be adequate in supply.

The area radiation monitor installation is essentially complete. Original system design did not include a reflash capability for the control room annunciator. The licensee is currently pursuing this problem. The proposed area radiation monitor calibration procedures were examined and appear to be adequate with the exception that they did not include any calibration points within the normal operating range of the instruments. Calibration documentation will be examined during a subsequent inspection.

The licensee intends to use both TLD badges and pocket dosimeters for personal monitoring. Approximately 80% of the pocket dosimeters have arrived. The licensee stated that the TLD badge service would be commenced soon for a limited number of personnel. Stay time calculations will be relied upon to determine neutron exposures, although neutron dosimeters will also be available.