

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

Report of Construction Inspection

RO Inspection Report No. 050-346/74-02

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

Davis-Besse Nuclear Power Station
Oak Harbor, Ohio

License No. CPPR-80
Category: A

Type of Licensee: PWR (B&W) - 872 Mwe

Type of Inspection: Special, Announced

Dates of Inspection: February 13-15, 1974

Dates of Previous Inspection: January 8-10, 1974 (Construction)

Principal Inspector:

M. W. Dickerson
M. W. Dickerson

3-18-74
(Date)

Accompanying Inspector: D. W. Hayes

D. W. Hayes

3/19/74
(Date)

Other Accompanying Personnel: None

Reviewed By: W. E. Vetter, Chief
Reactor Construction Branch

W. E. Vetter

3-19-74
(Date)

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SUMMARY OF FINDINGS

Enforcement Action

A. Violations

One of the activities at the Davis-Besse site appears to be in violation of AEC regulations and in non-conformance with the Quality Assurance Program, as identified below, and is considered to be of Category III severity.

10 CFR Part 50, Appendix B, Criterion VII, states, in part, that: "Documentary evidence that material and equipment conform to the procurement requirements shall be available at the nuclear power plant site prior to installation or use

Babcock and Wilcox Purchase Order No. 027780LK, dated November 4, 1970, requires that the decay heat removal coolers be designed and manufactured to ASME Section III - 1968, with Addenda through Winter 1969 for the tube side and ASME Section VIII - 1968 for the shell side.

Babcock and Wilcox Procedure No. 9A-107-1, Revision 6, Receipt Inspection and Procedure for Tagging, prescribes as one of the requirements for acceptance of Q-listed items a Quality Assurance Release stating that the requirements of the original purchase order and associated changes have been met and identifies any contingencies and waivers.

Contrary to the above requirements, decay heat removal cooler, DH-HX1B, has been installed without either a manufacturer's data report or a Quality Assurance Release available for review at the site which specifies that a manufacturer's data report exists for this vessel. (Paragraph 3.b)

B. Safety Matters

No safety matters were identified.

Licensee Action on Previously Identified Enforcement Matters

A. Lack of Weld Inspection Procedure for Class 1E Welds (RO Inspection Report No. 050-346/74-01)

During the previous inspection, it was found that support and seismic welds, associated with Class 1E equipment, were being inspected

without benefit of written procedures or instructions. Moreover, no documentation was available to establish that all the subject welds were being inspected. This item remains open pending receipt and review of the licensee's response to the notice of violation.

B. Failure to Follow Class 1E Weld Control Procedures (RO Inspection Report No. 050-346/74-01)

During the previous inspection, documentation was not available to establish that welding operations, associated with Class 1E electrical equipment, were being controlled in accordance with applicable procedures. This item remains open pending receipt and review of the licensee's response to the notice of violation.

Design Changes

No new design changes were identified.

Unusual Occurrences

No unusual occurrences were identified.

Other Significant Findings

A. Current Findings

1. The primary purpose of this inspection was to review the status of a "stop work order" covering electrical Class 1E support and seismic welding and to evaluate implementation of the electrical contractor's quality assurance program in other areas (other than welding) for Class 1E electrical work. (Paragraph 1, Report Details)
2. Toledo Edison Company (TECO) indicated that, to date, the electrical contractor has pulled 16 Class 1E cables and approximately 80% of the cable trays have been installed.
3. TECO reported that, as of February 4, 1974, a significant Bechtel Corporation (Bechtel) organization change has been made in that the Bechtel project quality control engineer for Davis-Besse now reports directly to the Bechtel quality control manager at Gaithersburg, Maryland. Previously, the project quality control engineer reported to the Bechtel project construction manager at the site.

B. Unresolved Matters

Class 1E Electrical Cable Trays

During the inspection, it was learned that procurement and receipt of electrical cable trays for Class 1E electrical cable was no longer considered Q-listed (Class 1E). (The tray installation is still considered as Q-listed.) No information, verbal or documented, was made available in regard to the basis for this decision. The licensee was informed that this matter was considered unresolved pending satisfactory review of the engineering justification of this action.

C. Status of Previously Reported Unresolved Matters

1. Westinghouse Electric Corporation (W) High Pressure Injection Pump Motors (RO Inspection Report No. 050-346/74-01)

During the previous inspection it was reported by W that the subject motor acceleration time was 0.46 seconds at 70% rated supply voltage whereas the specification requires the motors to accelerate their drives to normal operating speed within six (6) seconds at this voltage.

During this inspection the licensee indicated that a resolution of the pump motor deficiency was underway by W. This matter remains open pending a satisfactory resolution of the deficiency.

2. Weld Material Certifications (RO Inspection Report No. 050-346/74-01)

During the previous inspection, the Babcock and Wilcox (B&W) weld material certification record book was found to have certifications that did not clearly establish conformance to ASME Code requirements. In addition, the legibility of the certificates was unacceptable. During this inspection, a review of the weld certification record book established that legible records, which clearly establish conformance to ASME Code requirements are now available. This matter is considered closed.

Management Interview

- A. The following persons attended the management interview at the conclusion of the inspection.

Toledo Edison Company (TECO)

L. E. Roe, Vice President - Power
E. C. Novak, Chief Mechanical Engineer
J. D. Lenardson, Quality Assurance Engineer
G. W. Eichenauer, Quality Assurance Field Representative
E. A. Wilcox, Quality Assurance Field Specialist
K. M. Cantreil, Quality Assurance Engineer
*N. L. Wadsworth, General Superintendent - Power Construction

Bechtel Corporation (Bechtel)

H. A. Ablondi, Project Quality Assurance Engineer

*Part time.

B. Matters discussed and comments, on the part of management personnel, were as follows:

1. The inspector reviewed the purpose of the inspection in the electrical area. The meeting members were informed that, in view of the deficiencies identified in the Bechtel audit reports, dated September 21, 1973, and January 7, 1974, relative to the Fischback and Moore, Incorporated (F-M) Class 1E welding activities, it appeared that F-M had not fully understood, nor implemented, the requirements of the quality assurance program for Class 1E work in progress. The inspector added, however, that corrective action completed to date was considered responsive and that it appeared that Class 1E welding, now being performed, met requirements. The inspector further stated that it was his understanding, from discussion with the F-M representative, that procedure revisions, relative to Class 1E weld inspections, were planned to more definitively state the weld acceptance criteria and documentation requirements. Also, that F-M would establish that all Class 1E welds, completed to date, have been inspected and met specification requirements. The licensee stated that they were in the process of resolving this matter.

In regard to other Class 1E electrical activities, the inspector stated that the results of a review of installation and inspection procedures, records, and observations of work, indicated that no deficiencies existed which had not previously been identified by Bechtel and subsequently corrected.

2. The inspector briefly reviewed the status of previously identified unresolved matters, including the satisfactory resolution of B&W weld material certifications.

3. The inspector stated that, during a review of records relative to Class I components, it was established that the data package for decay heat removal cooler DH-HX1B did not contain a manufacturer's data report, as required by ASME Sections III and VIII, nor did the certification state that a data report for DH-HX1B was available at the manufacturer's (B&W) plant. Moreover, since the cooler had been installed, this appeared to be a violation of 10 CFR Part 50, Appendix B, Criterion VII and in nonconformance with the TECO quality assurance program. The licensee acknowledged the comment and stated that they would review the matter with B&W.

REPORT DETAILS

Persons Contacted

The following persons, in addition to individuals listed under the Management Interview Section of this report, were contacted during the inspection.

Toledo Edison Company (TECO)

B. R. Beyer, Maintenance Engineer

Bechtel Corporation (Bechtel)

J. J. Ford, Quality Assurance Engineer
T. A. Kamann, Quality Control Engineer - Documentation
K. P. Matthai, Senior Field Engineer - Electrical
T. P. Ridley, Jr., Project Field Electrical Engineer
W. C. Lowery, Quality Control Engineer - Electrical
W. B. Daly, Lead Welding Engineer
D. K. Lewis, Quality Control Engineer - Records
B. M. Tubin, Electrical Field Engineer

Fischback and Moore, Incorporated (F-M)

D. M. Moeller, Quality Control Manager
J. D. Binford, Quality Control Lead Man
D. A. Tisdale, Electrical Inspector
Q. L. Waite, Welding Inspector

Babcock and Wilcox Company (B&W)

J. W. Marshall, Quality Control Supervisor
C. R. Hilling, Quality Control

ITT - Grinnell Corporation (Grinnell)

L. A. McGuire, Project Manager
D. R. Giguere, Quality Control Manager
S. J. Miller, Quality Control Engineer
C. (NMI) Keller, Quality Control Engineer - Receiving

Results of Inspection

1. Electrical - QA/QC Program

a. General

As indicated previously, the primary purpose of the electrical inspection was to review the status of a "stop work order" for Class 1E support and seismic welding. A second purpose of the inspection was to evaluate implementation of the electrical contractor's quality assurance program in other areas. The F-M Quality Control Manual, approved on November 14, 1972, was used to evaluate the implementation. This manual is presently under revision and RO:III will review the revised manual for conformance to TECO and Bechtel QA manuals, and to 10 CFR Part 50, Appendix B, when the revised manual is authorized for use. During the implementation review, the inspector was informed, by F-M, that the organization presently at the site would be augmented by two additional electrical inspectors, in approximately two months, due to the expected increased site activity.

b. Class 1E Support and Seismic Welds (RO Inspection Report No. 050-346/74-01)

During the previous inspection, on January 8-10, 1974, a "stop work order" was issued by Bechtel in regard to Class 1E support and seismic welds performed by F-M. The "stop work order" was the result of deficiencies identified during an audit performed by Bechtel inspectors on January 7, 1974. (Some of the deficiencies were repeat items previously identified in a Bechtel audit performed on September 21, 1973.)

During the current inspection, disposition of the "stop work order," which was lifted on February 6, 1974, was reviewed. The results of this review are discussed below.

(1) Deficiencies (Identified During the Bechtel Audit)

(a) Failure to follow F-M Quality Assurance Procedure No. 1 (QAP-1) Revision 0, in that:

- i) No records were available to establish that the welding inspector had verified all fitups, electrodes or other filler materials, and welder qualifications, prior to welding operations.

- ii) Each welder was not issued an identifying stamp, nor were other means provided to establish weld to welder traceability.
 - iii) The welding inspector did not counterstamp welding records to verify acceptability of the weld operation.
 - iv) Unused welding electrode was not discarded or returned to the applicable rod storage oven at the end of each shift, and electrodes not being used were not kept in portable ovens.
 - v) A portable oven, containing Type E7018 welding electrodes, was observed to be unheated (i.e., not plugged in).
 - vi) Records were entered on forms different than those specified.
 - vii) Welding electrodes were not issued by the stockroom clerk, but were withdrawn directly from the oven by the welders.
- (b) Lack of evidence to establish that code "preheat" requirements were met.
 - (c) Lack of evidence to establish that the weld rod storage oven temperature was maintained above the 250°F minimum.
 - (d) Procedure QAP-1 requires that a welder's qualification be renewed when there is reason to question his ability to make welds that meet specifications. Since weld to welder traceability was not maintained, this procedure requirement could not be met.

NOTE: During the previous inspection on January 8-10, 1974, the RO inspector established, through other records, that the subject welders were properly qualified and that their qualifications were current.

(2) Resolution

- (a) A series of meetings were held between F-M, Bechtel, TECO QA/QC, and TECO management personnel. As a result of these meetings:

- i) Nonconformance reports (NCR's) were issued by F-M covering each of the deficiencies. Disposition of the NCR's were properly reviewed and approved in accordance with established Bechtel and F-M procedures.
 - ii) F-M prepared instructions for "Q-listed" equipment welding. The instructions delineated the requirements of QAP-1 relative to Class 1E welding.
 - iii) The instructions were reviewed with F-M craftsmen in a meeting held February 4, 1974. In addition, each craftsman was issued a copy of the instruction.
- (b) The applicable welding code requires the base metal be preheated to at least 70°F and that this minimum temperature be maintained during welding when the initial base metal temperature is below 32°F. The instructions for Q-listed equipment welding requires that the preheat requirement be verified and documented by the welding inspector at the time he verifies weld fitup.

NOTE: During the review of this matter, by Bechtel and F-M personnel, no evidence could be found to indicate that the initial base metal temperatures were below 32°F. The buildings were enclosed and heated during, and prior to, the subject welding. Other temperature records, such as those entered on "Megger" data sheets, covering the time span involved, support this conclusion.

- (c) The instructions now require that weld rod storage and portable oven temperatures be verified as meeting requirements bimonthly. Calibrated thermometers are to be used and the results documented.
- (d) Since weld-to-welder traceability is now being maintained, means to identify questionable or defective welds to the welder are provided. Any need for welder requalification requirements can now be established.

During the period when the "stop work order" was in effect for F-M Class 1E welding, Bechtel inspectors identified two apparent violations of the order. The first occurred on January 4, 1974. Investigation established that the welding involved was Class I work and that the craftsmen involved apparently were not aware of the order. Corrective action included issuance of an NCR,

verbal reinstruction of F-M welders in regard to the "stop work order," and inspection of the weld to verify that it met code requirements. The NCR was properly processed and approved, and the weld was inspected and accepted. Investigation of the second incident, which occurred on January 21, 1974, established that the weld involved had been incorrectly identified as Class I.

During the current inspection, the inspectors determined that F-M had initiated a program to establish that all Class 1E welds, performed prior to the January 8, 1974, stop work order issued to F-M by Bechtel, met applicable requirements. While this effort was underway, only preliminary, unconfirmed results of weld inspection had been accumulated. The F-M program for weld reinspection involves both liquid penetrant examination and visual inspection. The scope and results of this weld inspection effort are to be fully reviewed by the inspector during the next routine site inspection.

A review of records, discussions with Bechtel and F-M personnel (including the F-M shop welding foreman and the stockroom clerk) and observations by the inspectors indicated that F-M Class I welding work was now being performed in accordance with applicable procedures and codes.

Two possible procedure shortcomings were discussed with the licensee's representatives in that the weld inspection instructions did not clearly indicate weld accept-reject criteria or the documentation requirements (i.e., forms to be used). The F-M representative indicated that the procedure would be revised to be more definitive in these areas.

In response to questioning, the F-M representative also stated that it was F-M's intention to establish that all Class 1E welds had been visually inspected and met requirements.

c. Review of Quality Control System

Procedures and specifications (listed below) were reviewed for installation and installation inspection of Class 1E conduit, cable trays, and electrical cable. Procedures include requirements for inspecting cable tray installations for proper:

- (1) type and size, (2) routing, (3) protection, (4) assembly and installation, and (5) identification. Requirements for inspection of cable installations include verification that: (1) the conduit and raceways are installed, inspected, and are clean and unobstructed,

- (2) proper lubricants are used and pull tensions are not exceeded,
- (3) cable installed is as specified and is properly identified,
- (4) routing is correct for proper separation, and (5) cable is free from visual damage and cable ends are sealed following installation.

During an inspection conducted on November 29 and 30, 1972 (RO Inspection Report No. 050-346/72-06) specifications and other design data, available at that time, did not clearly establish how the following commitments would be satisfied:

- (1) Minimum requirements for separation and protection of redundant system cables in potential fire and missile areas.
- (2) Provisions to avoid vertical stacking of redundant trays.
- (3) Provisions to prevent routing nonvital cables with vital cables associated with more than one redundant system.

During the current inspection, specifications, procedures, and drawings reviewed indicated that provisions have now been established to meet these commitments.

Provisions to prevent routing, or locating, power cables (above 150 volts) in cable spreading, relay, and control rooms were not reviewed during this inspection, but are to be reviewed during future routine electrical inspections.

d. Procedures and Specifications Reviewed

- (1) F-M Procedure No. E-14-6a.001, "Installation Procedure for Class 1E Conduit, Fittings, Trays, Hangers, and Supports," Revision 0, July 9, 1973.
- (2) F-M Procedure No. E-14-7a.001, "Procedure for Inspection of Electrical Installation of Hangers and Supports (Including Conduit, Fittings, and Trays)," Revision 0, July 17, 1973.
- (3) F-M Procedure No. E-14-6c.001, "Procedure for Installation of Class 1E Cables," Revision 2, October 15, 1973.
- (4) F-M Procedure No. E-14-7c.001, "Procedure for Inspection of Installation (Cable Pulling) of Class 1E Cable," Revision 2, November 28, 1973.

- (5) Bechtel Technical Specification No. 7749-E14, Revision 3, October 15, 1973.
- (6) Bechtel Drawings E-320A, "Electrical Standards and Details."
- (7) Bechtel Drawings E-11A, Electrical Numbering Systems."

e. Record Review

(1) Cable

Vendor test records were reviewed for cable Nos. 1PAC12CEA, 1PAC112A and 1PAC108A. Tests performed included: (1) radiation resistance, (2) flame resistance, and (3) physical and electrical properties. Test results were reviewed by Bechtel Engineering and verified as meeting requirements. Other cable records reviewed included certification of production techniques and receiving inspection reports.

(2) Cable Trays

Specifications required that two randomly selected sections of Class 1E cable trays be load tested in accordance with NEMA Standard VE-1-1971, Part 3, to verify conformance to requirements. Certified test results were reviewed which established that the trays met requirements.

(3) Drawing Control

Fifteen drawings in use at work locations were randomly selected for a check to verify that the proper drawing and revision number were in use. These were all checked with the master print file and drawing list and verified as the proper drawings. Included in the review were field sketches, which were established to be in use in conformance with Bechtel Field Instruction DB-13, Revision 0, Field Instruction For Field Sketches, dated January 25, 1974.

(4) Motor Control Center MCC-E11A

The data package for MCC-E11A was reviewed by the inspector and determined to be acceptable. However, NCR No. 420, relative to documentation for production tests and production inspection reports is still open. The documents reviewed included Specification No. 7749-E-8, Revision 0, dated December 22, 1971; Material Receiving Inspection Report

dated September 21, 1972; Statement of Conformance dated February 4, 1972; NCR No. 420, Test certification to NEMA Standard Publication IC-1 dated December 12, 1972; and seismic test certification dated December 12, 1972.

(5) Cable Pull Cards

Cable pull cards and inspection records for all Class 1E cables pulled to date (16 cables) were reviewed by the inspector. All appeared to be complete and were appropriately signed and dated. Traceability of the cable to receiving and test records is available through use of cable reel cards. The cable pull card information included the cable number, date installed, routing, cable code, from and to (terminations), system number, drawing number, number of cables, lengths, and who installed the cable. The inspection records information includes the inspector, date, raceway checklist(s) complete, conduit/raceway length measurement, Class 1E circuit identification, conduit/raceway clean and unobstructed, lubricant used, cable pull tension, cable free from visual damage, cable identification tags, cable ends sealed, and sufficient pigtailed.

The cable pull cards and inspection records for the following cables were reviewed:

<u>Cable No.</u>	<u>Date Installed</u>	<u>Cable No.</u>	<u>Date Installed</u>
3PACD01A	10/30/73	1PAC112A	11/14/73
1PAC109A	11/6/73	2PAD113A	10/30/73
1PAC108A	11/5/73	2PAD112A	11/8/73
1PAC113A	10/30/73	2PAD111A	11/8/73
2PAD11DFA	11/7/73	2PAD109A	11/6/73
1PAC11CEA	11/7/73	2PAD12DFA	11/7/73
1PAC12CEA	11/7/73	1PD104A	2/7/74
2PAD108A	11/6/73	1PD104B	2/7/74

f. Observation of Work - Installed Power Cables

Three power cables, 1PAC112A, 1PAC12CEA, and 1PAC108A, were selected for observation of proper routing and identification of cables and raceways. Cable 1PAC112A (Cable Code A62 from cable reel No. 30688) was observed to be properly tagged and routed through properly tagged raceways from AC112 (switch gear C1, cubicle 12) through raceways No. 36009A, 36009B, 36009C, and

36009D to MP0421 (decay heat pump motor No. 421). Cable 1PAC12CEA (Cable Code AG2 from cable reel No. 30688) was observed to be properly tagged and routed through a properly tagged raceway from AC1CE1-2 (switch gear C1, Unit Substation E1) through raceway No. 36304A to XCE1-2 (transformed No. 2 Unit Substation E1). Cable 1PAC108A (Cable Code AG2 from cable reel No. 4270) was observed to be properly tagged and routed through a properly tagged raceway from AD108 (switch gear D1, cubicle 8) through raceway No. 36307A to ACD03 (transfer switch CD, cubicle 3).

2. Other Class I Piping - Main Steam

a. General

Main steam piping within the reactor containment is to be installed by B&W, while Grinnell will install steam piping outside the reactor containment. Both contractors' QA programs for welding and piping have been evaluated previously and are documented in RO Inspection Reports No. 050-346/73-01 and No. 050-346/73-04.

The main steam piping, designed and fabricated to the requirements of ASTM Code Section III, Class 2, Summer 1971 Addenda, was received onsite by Grinnell.

Four spool pieces for the main steam system were randomly selected and the documentation, identified below, was reviewed for each spool piece. With one exception, no deficiencies were identified. The exception involved failure to fully complete the receiving inspection report for one of the selected spool pieces.

b. Record Review

The following records were reviewed for main steam pipe spool pieces No. 3A-EBB-1-1, 3A-EBB-1-6, 3A-EBB-1-12, and 3A-EBB-1-18:

- (1) Receiving inspection reports.
- (2) Isometric drawings.
- (3) Material certifications for pipe, fittings, weld insert rings, welding wire, and electrodes.

- (4) Material and shop weld NDE reports.
- (5) Welder, inspector, and NDE personnel identification.
- (6) Weld and NDE procedures.
- (7) Furnace load sheets and heat treatment records.
- (8) Manufacturer's Code Data Reports.
- (9) Bill of materials.
- (10) Deviation reports (shop).

As stated above, no significant deficiencies were identified. The records were readily retrievable and appeared to have been properly reviewed and approved. The spool pieces, on receipt, were found to meet requirements by Grinnell, and no quarantine or nonconformance report was required. Procedures for identification and quarantine of nonconforming materials, however, do exist.

In regard to the lack of proper documentation concerning one receiving inspection report (i.e., failure to properly identify the spool piece as Q-listed and to document its condition on receipt for cleanliness, protective coating, and marking) the Grinnell representative stated that this matter would be reviewed with receiving inspection personnel. In addition, he added that other receiving reports would be reviewed for similar omissions.

c. Observations

Three of the four selected spool pieces were inspected for proper storage, protection, cleanliness, and identification. No discrepancies were identified. The spool pieces were on dunnage, and end covers were observed to be in place. The fourth spool piece, No. 3A-EBB-1-6, had been moved from the storage yard into the reactor building and was inaccessible for close visual examination.

3. Other Class I Components - Steam Generators, Pressurizer, Reactor Coolant Pumps, and Decay Heat Removal Coolers

a. Review of QC System

The B&W QC system for Class I components was determined to be acceptable for receipt inspection and handling, special handling

and storage precautions, quarantine of nonconforming parts, installation specifications and procedures, use of expertise in installation, and installation inspections. Acceptability was established by selective examination within the following:

- (1) B&W QA Manual for Nuclear Power Plant Components, Copy No. 3, issued to TECO February 17, 1973.
- (2) B&W QC Manual for TECO, NSS-14, Copy No. 3, issued to TECO February 15, 1973.

b. Records Review

Records for steam generators SG-1A (No. 55-11) and SG-1B (No. 55-12), the pressurizer (No. 620-0014-59), RC pump No. P1A2 (Serial No. 0242), and decay heat removal coolers DH-HX1A and DH-HX1B were reviewed by the inspector and established as being acceptable for all of the components, with the exception of decay heat removal cooler DH-HX1B. Installation of the reactor coolant pumps, the pressurizer, and the steam generators remains to be completed. At the present time, temporary upper supports are being utilized for the steam generators pending receipt and installation of the permanent supports.

Records reviewed were those for material and fabrication certifications, including conformance with chemical, physical, NDE, and other test specifications included in the purchase order, the application, and the specifications for each piece of equipment. As indicated previously, the data package for decay heat removal cooler DH-HX1B did not include a manufacturer's data report (U-1) nor did the quality assurance release (certification) dated July 6, 1972, specify that a manufacturer's data report was available for this vessel. This is in contrast to the data package for decay heat removal cooler DH-HX1A, which included both a copy of the data report and certification of the manufacturer's code data report on the certificate of conformance dated November 1, 1971. Purchase Order No. 022780LK, dated November 4, 1970, requires that the decay heat removal coolers be designed and manufactured to the requirements of ASME Section III - 1968, with Addenda through Winter 1969, and Section VIII - 1968, which specify the requirement for the manufacturer's data report. This deficiency was pointed out to the licensee as an apparent violation of 10 CFR Part 50, Appendix B, and as a nonconformance with the B&W QA program. The latter requires that documentary evidence, that the component conforms to the

procurement requirements, be available at the site prior to installation or use. In this case, installation of the decay heat removal cooler DH-HX1B was completed on February 17, 1973, and released for piping.

Records relevant to the components which were reviewed are as follows:

- (1) Steam Generator (RC-SG1A and SG-1B, No. 55-11 and No. 55-12)
 - (a) B&W PO No. 620-0014, dated March 5, 1971, and changes 1 through 14.
 - (b) B&W Specification No. CS-3-33/0570, Once Through Steam Generator, dated May 8, 1970.
 - (c) B&W Specification No. CS(F)-3-33/NSS-14/1170, Steam Generator, dated November 1970.
 - (d) B&W Specification No. CS(F)-3-92/NSS-14/1070, Reactor Coolant System, dated October 30, 1970.
 - (e) B&W Specification No. CS-3-150/0570, Feedwater Heater, dated May 22, 1970.
 - (f) Engineering Change Authorization, No. SC-44, dated November 12, 1970.
 - (g) Engineering Change Authorization, No. SC-45, dated November 12, 1970.
 - (h) Receipt Inspection Reports, dated March 22, 1973, through February 7, 1974.
 - (i) Certificate of Conformance, dated January 30, 1974.
 - (j) Manufacturer's Code Data Report for SG-1A, dated August 30, 1973, and for SG-1B, dated August 30, 1973.
 - (k) Field Procedure No. 07, Unloading Steam Generators.
 - (l) Report of Inspection (Storage) No. 18919 and No. 18920, dated June 18, 1973, to February 8, 1974 (Monthly Inspection).
 - (m) Field Construction Procedure No. 09, Set Steam Generators, Revision 2, dated August 24, 1973.

(2) Pressurizer (Serial No. 620-0014-59)

- (a) B&W PO No. 620-0014, dated March 5, 1971, and Changes 2-25.
- (b) B&W Specification No. CS(F)-3-32/NSS-14/1170, Pressurizer, dated November 25, 1970.
- (c) B&W Specification No. CS(F)-3-92/NSS-14/1070, Reactor Coolant System, dated October 30, 1970.
- (d) B&W Specification No. CS-3-32/0570, Pressurizer Vessel, dated May 15, 1970.
- (e) B&W Specification No. CS(F)-3-32/NSS-14/0572, Pressurizer, dated May 22, 1972.
- (f) B&W Specification No. CS(F)-3-92/NSS-14/0372, Reactor Coolant System, dated March 21, 1972.
- (g) B&W Specification No. CS-3-32/0570, Pressurizer Vessel, dated May 15, 1970.
- (h) B&W Specification No. 3002/NSS-14/0472, Reactor Coolant System Foundation and Nozzle Loading, dated April 7, 1972.
- (i) Engineering Change Authorization, No. SC-46, dated November 12, 1970.
- (j) Certificate of Conformance, dated October 27, 1972.
- (k) Manufacturer's Code Data Report, dated March 23, 1972.
- (l) Receipt Inspection Report, dated July 2, 1973, for the heater bundles and report dated June 6, 1972, for the pressurizer.
- (m) Storage Inspection Records (Monthly) from June 6, 1972, to present.
- (n) B&W Storage Procedure No. 9A117-2, dated September 7, 1971.

(3) Reactor Coolant Pump No. PLA2 (Serial No. 0242)

- (a) B&W PO to Byron Jackson, No. 022297LW, dated May 15, 1970, including 17 change orders.

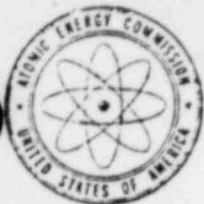
- (b) B&W Specification No. 1036/0569, Reactor Coolant Pumps, dated May 1969.
 - (c) Certification for Driver Mount, dated April 26, 1973.
 - (d) Certification for Casing, dated October 25, 1972.
 - (e) Certification for Internals, dated May 21, 1973.
 - (f) B&W Monthly Storage Summary Report, dated January 1974 (Surveillance notation regarding Pump components).
 - (g) Field Construction Procedure No. 19, Revision 3, dated September 18, 1973, including records of installation to date.
- (4) Decay Heat Removal Coolers, DB-HX1A and DB-HX1B
- (a) B&W POS No. 022780LK to Atlas Industrial Manufacturing Company, dated November 4, 1970.
 - (b) B&W Specification No. 1024/0769, Heat Exchangers for Auxiliary System Service, dated July 25, 1969, as amended by Engineering Change Authorization No. SC-32, dated October 1, 1970, Appendix A, dated October 12, 1970, and Appendix B, dated October 12, 1970.
 - (c) B&W Specification No. CS-3-106, General Technical Specification for All Components Used in Auxiliary Systems, dated October 3, 1968, and amended by Engineering Change Order No. SC-16, dated June 4, 1970.
 - (d) B&W Specification No. CS-5-95, General Specification for Cleanliness of Nuclear Reactor System and Components, dated May 29, 1968.
 - (e) B&W Specification No. 1107/NSS-14/0470, Seismic Design Analysis, dated April 24, 1970.
 - (f) B&W Specification No. 1152/1069, Nuclear Qualification Program Requirements, dated October 21, 1969.
 - (g) Certificate of Conformance for DB-HX1A, dated November 1, 1971, and for DB-HX1B, dated July 6, 1972.

(h) Manufacturer's Code Data Report for DB-HX1A, dated October 8, 1971.

(i) Installation Inspection Report (Installed per Drawing M-125, Revision 4, and Drawing M-130, Revision 2) dated February 17, 1973.

4. Sun Shipbuilding and Dry Dock Company

The licensee verified that the Sun Shipbuilding and Dry Dock Company did not furnish any material, equipment, components, or supports for the Davis-Besse plant. This effort was performed pursuant to Headquarter's memo, "Defective Support Structure Manufactured By Sun Shipbuilding and Dry Dock Company," dated January 23, 1974.



UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

TELEPHONE
(312) 858-2660

A. RO Inspection Report No. 050-346/74-02

Transmittal Date : March 20, 1974

Distribution:
RO Chief, FS&EB
RO:HQ (5)
DR Central Files
Regulatory Standards (3)
Licensing (13)
RO Files

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RO:HQ (4)
L:D/D for Fuels & Materials
DR Central Files
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B. RO Inquiry Report No. _____

Transmittal Date : _____

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RO Files

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RO:HQ
DR Central Files
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C. Incident Notification From: _____
(Licensee & Docket No. (or License No.))

Transmittal Date : _____

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