



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30303

Report No.: 50-346/83-18

Licensee: Toledo Edison Company  
 Toledo, OH 43652

Docket No.: 50-346

License No.: NPF-3

Facility Name: Davis-Besse Nuclear Power Station, Unit 1

Inspection at Davis-Besse site near Port Clinton, Ohio

Inspector: *N. Economos* 8/29/83  
 N. Economos Date Signed

Approved by: *J. J. Blake* 8/30/83  
 J. J. Blake, Section Chief Date Signed  
 Engineering Program Branch  
 Division of Engineering and Operational Programs

SUMMARY

Inspection on August 9-12, 1983

Areas Inspected

This routine, unannounced inspection involved twenty-two inspector-hours on site in the areas of inservice inspection (ISI), records review, observation of work and work activities including eddy current examination of once through steam generator (OTSG) tubes and ultrasonic examination of reactor vessel upper core barrel bolts.

Results

In the areas inspected, no violations or deviations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*C. T. Daft, QA Director
- \*E. F. Doerr, Supervisor, Code Inspection
- J. S. Singer, Senior QC Inspector

Other licensee employees contacted included technicians, security force members, and office personnel.

#### Other Organizations

##### Babcock & Wilcox

- C. E. Thompson, ISI Coordinator
- J. F. Harrington, Level II Examiner, NDE
- R. W. Matney, Level II Examiner, NDE

#### NRC Resident Inspectors

- W. G. Rogers
- P. M. Byron

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on August 12, 1983, with those persons indicated in paragraph 1 above.

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Independent Inspection Effort (92706)

#### a. Core Barrel Bolt Nondestructive Examination

Inspection of the core barrel bolts was underway at the time of this inspection. The examination was being done by B&W in accordance with inservice inspection procedure ISI-165, Rev. 2 "Ultrasonic Examination of Bolts and Studs for Crack Detection". The inspector reviewed the procedure for adequacy and technical content; discussed details of the

examination with the cognizant Level II examiner doing the examination; observed examination of approximately twenty bolts; and reviewed related qualification records for personnel and equipment. The examination was performed with a 2.25 MHz, 3/4-inch diameter straight beam transducer mounted on a spring loaded device for remote operation. The bolts were examined in place. Calibration standards consisted of three archive bolts, two of which contained machined 15% and 50% notches respectively and one notch free. Crack detection was based on loss of back reflection. B&W completed the inspection of all upper core barrel bolts (120) and found them sound.

b. High Pressure Injection Thermal Sleeve Examination

The thermal sleeves in the "A" and "B" HPI lines were radiographed to observe their position/location and examine the condition of the weld buttons. The inspector reviewed the radiographs for each of the four thermal sleeves identified as HPI-50, -51, -58 and -59 to determine the condition stated above. The inspector also compared the present radiographs with those taken on March 15, 1982. The location and weld condition were satisfactory.

Within the areas inspected, no violations or deviations were identified.

6. Inservice Inspection - Work Observation (73753)

As a followup to the work effort documented in report number 50-346/83-15, the inspector observed ISI activities described below to determine whether these activities were being performed in accordance with regulatory requirements and approved licensee procedures.

a. Ultrasonic Examination

The applicable code for this ISI is the ASME Boiler and Pressure Vessel Code, Section XI, 1977 Edition, Summer 1978 addenda and Section V, Article 5 (77S78).

The ultrasonic procedure used for this examination was ISI-120, Rev. 19, "Ultrasonic Examination of Piping and Vessel Welds Joining Similar and Dissimilar Materials". The procedure referenced ASME Section XI (74S75), which is more conservative than the applicable code in that the (74S75) edition requires volumetric (U/T) examination of the entire volume of the weld instead of the partial (1/3T) examination required by the code of record (77S78). The inspector observed in-process U/T examination of the below listed weld. The weld was identified as follows:

<u>Figure No.</u>	<u>Weld No.</u>	<u>System</u>
C5.21.1	FW-6(33B-CCB-6-6)	Low Pressure Injection

This examination was compared with the applicable procedure in the following areas:

- Availability of and compliance with approved NDE procedures
- Use of knowledgeable NDE personnel
- Use of NDE personnel qualified to the proper level
- Recording of inspection results
- Type of apparatus used
- Extent of coverage of weldment
- Calibration requirements
- Search units
- Beam angles
- DAC curves
- Reference level for monitoring discontinuities
- Method of demonstrating penetration
- Limits for evaluating and recording indications
- Recording significant indications
- Acceptance limits

b. Eddy Current (EC) Examination of OTSG, "B" Tubes

ISI activities during this refueling outage (3rd) included the eddy current examination of tubes in "B" OTSG. Data acquisition and analysis was being performed by B&W personnel. B&W approved procedure, ISI-416, Revision 6, which referenced R.G. 1.83 R/1, July 1975 and ASME Section XI (R<sup>W</sup>80), was the governing documents. The inspector observed the examination of tubes 74-1 through 74-25 and the 4-hour calibration performed at the end of tape 2 and again at the start of tape no. 3 at approximately 8:00 a.m. on August 11, 1983 on OTSG "B".

In summary, the inspection called for the EC examination of 6% randomly selected tubes along with all the tubes in the lane region of the OTSG, the outer periphery and some special interest tubes. One of the objectives of outer periphery tube examination was to determine whether the condition of the tubes near the internal auxiliary feedwater header had undergone any changes since the header had been stabilized. Approximately 1360 tubes had been identified for examination during this outage.

In addition to the aforementioned work observation, the inspector reviewed quality on site records for EC calibration standards on site, equipment/ certifications and personnel qualifications. Technicians performing the examination appeared to be thoroughly familiar with procedural requirements and adequately qualified to perform their assigned tasks.

Within the areas inspected, no violations or deviations were identified.

## 7. Inservice Inspection, Data Review and Evaluation, (73755)

Records of completed nondestructive examinations were selected and reviewed to ascertain whether: the method(s), technique and extent of the examination complied with the ISI plan and applicable NDE procedures; findings were properly recorded and evaluated by qualified personnel; programmatic deviations were recorded as required; personnel, instruments, calibration blocks and NDE materials (penetrants, couplants) were designated and qualifications/certifications were on file. The applicable Code for this activity was as discussed in paragraph 6 above. Records selected for this review were as follows:

<u>FIGURE</u>	<u>COMPONENT/WELD</u>	<u>EXAMINATION METHOD</u>
B7.70.29	HPI Valve B96-2 1B1	U/T
B11.10.9.4	R.C. Drain System Support #31-CCB-16-H5	U/T
C5.21.1	Pipe to Elbow, FW-6 Low Pressure Injection	U/T
*C3.40.132	Support Attachment	M/T
B5.50.1	S.E. to Nozzle, RCPI-2-1	U/T
C5.21.76	Pipe to Elbow	U/T

Rejectable fabrication type defects identified by this inspection increased the sample size of inspections as required by the code. Also, three re-cordable indications (laminar) identified in the base material and in the weld of figure C5.21.76 were being evaluated by the contractor's Level III examiner as per code and procedural requirements.

Within the areas inspected no deviations or violations were identified.