

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-346/77-03

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

Davis-Besse Nuclear Power Station
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: January 3, 11-14, and 25-27, 1977

Principal Inspector: *T. N. Tambling for*
R. D. Martin

2/17/77
(Date)

Accompanying Inspectors: *T. N. Tambling*
T. N. Tambling

2/17/77
(Date)

W. J. Cook
for
R. J. Cook

2/17/77
(Date)

W. E. Kohler
for
J. E. Kohler

2/17/77
(Date)

Other Accompanying Personnel: W. S. Little

Reviewed By: *R. C. Knop*
R. C. Knop, Chief
Reactor Projects Section 1

2/17/77
(Date)

8002030147

SUMMARY OF FINDINGS

Inspection Summary

Inspection on January 3, 11-14 and 25-27, 1977 (Unit 1, 77-03): Review of completed preoperational test results, inspector witnessing of the inspection of the reactor internals following the completion of Hot Functional Testing, and review of Containment Leak Rate Test results and details. No 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

IE Inspection Report No. 050-346/76-20

This inspection report described an infraction for which there were two examples.

The inspector had previously (Report No. 050-346/76-24) verified that the corrective action described in the licensee response regarding the violation of Construction Work Permit controls had been completed.

The corrective action regarding the reevaluation of the insulation covered surfaces of the reactor coolant system had been completed. (Paragraph 10.a., Report Details)

Other Significant Findings

A. Systems and Components

1. The Hot Functional Testing sequence of the facility was concluded on January 7, 1977.
2. Unresolved Item: The licensee is to reevaluate the identification of the containment isolation valves for Penetration 29 because of the addition of normally open valves DH10 and DH26 to that line.

B. Facility Items (Plans and Procedures)

None identified during this inspection.

C. Managerial Items

The licensee informed the inspector of the reorganization of the QA staff by the creation of and assignment of personnel to the positions of Operations QA Supervisor, QC Supervisor, and Field QA Supervisor.

D. Deviations

None identified during this inspection.

E. Status of Previously Reported Unresolved Items

1. IE Report No. 050-346/76-01 (pg. 6)

This report referred to revisions required to procedure TP 2400.40 to bring it in conformance to the information in tables 7A-7F of the FSAR. During this inspection, the inspector reviewed Revision 1 (proposed) of that procedure to be reviewed by the SRB during its next scheduled meeting. No deficiencies were noted during the review by the inspector, and this matter is considered closed.

2. IE Report No. 050-346/76-01 (pg. 8)

This report referred to the licensee's statement that an Administrative Procedure was under development which would address the periodic review of procedures referenced in the proposed Technical Specifications. During this inspection the inspector verified that AD 1805.02 "Periodic Review of Station Procedures" was under development, being currently reviewed by QA, having been recommended on January 25, 1977 by the SRB. This matter is considered closed.

3. IE Reports No. 050-346/76-23 and 76-24

These reports referred to the licensee developing suitable controls over the lubricating oil used in the High Pressure Injection (HPI) pump bearings. During this inspection the inspector verified that the lubrication manual for equipment No's P58-1,2 (HPI pumps), as of Revision 2, dated December 5, 1976, contained appropriate oil specifications. This matter is closed.

4. IE Report No. 050-346/76-24 (pg. 8)

This report indicated the need to update the procedure for TP 130.06 "Polar Crane Acceptance Test." During this inspection the inspector verified that Revision 1 (dated January 3, 1977) had been approved. The inspector has no further questions on this matter.

Management Interview

- A. This inspection period included several individual inspections, the results of which are included herein. Accordingly, management interviews were held on three separate occasions, and are summarized below.
- B. Management Interview of January 3, 1977
1. The following persons attended:
 - J. Evans, Station Superintendent
 - R. Brown, Assistant Engineer
 - G. Hurrell, Senior Assistant Engineer
 - J. Buck, Operations Quality Assurance Supervisor
 2. Matters discussed and comments were as follows:
 - a. The inspector summarized his review of leak rate test results for valves tested in a direction opposite to DBA conditions. (Paragraph 7.a., Report Details)
 - b. The inspector summarized his review of the equipment hatch leak testing procedure of the licensee. The inspector indicated that the licensee would be requested to describe the manner in which the procedure governing equipment hatch leakage would address applicable Technical Specification requirements in his response to the letter transmitting this inspection report. (Paragraph 7.b., Report Details)
 - c. The inspector summarized his review of the maintenance controls applicable to containment isolation valve maintenance. The inspector indicated that the licensee would be requested to provide a description of the method by which he would establish:
 - (1) When leak rate testing of a containment isolation valve would be required following valve maintenance.
 - (2) The basis for the acceptance criteria by which the testing of such a repaired valve would be judged adequate.

This description will be requested in a response to the letter transmitting this inspection report. (Paragraph 7.c., Report Details)

- d. The inspector summarized his discussions regarding the computation of the sum of local leak rate testing results. The inspector indicated that the licensee will be requested to provide a description of the mechanism or procedural control by which the licensee computes the sum of local leak rate test results in a response to the letter transmitting this inspection report. (Paragraph 7.d., Report Details)
- e. The inspector summarized his findings with respect to the future testing of the containment isolation valves associated with the decay heat system suction line. (Paragraph 7.e., Report Details - see also Management Interview of January 27, 1977)
- f. The inspector summarized his review of the licensee's Integrated Leak Rate Test Report. (Paragraph 7.f., Report Details)

C. Management Interview of January 14, 1977

- 1. The following persons attended:
 - J. Evans, Station Superintendent
 - B. Beyer, Maintenance Engineer
- 2. Matters discussed and comments were as follows:
 - a. The inspector stated that conversations with the Harnischfeger crane inspector revealed it was necessary to ensure an adequate supply of Molykote BR2-5 grease on the gear tooth contact surfaces. The licensee stated they planned to have a representative from Harnischfeger witness the heavier pulls. (Paragraph 6.b., Report Details)
 - b. The inspector informed the licensee that several accelerometer leads were found destroyed on the wire bundle located at the Northend. The licensee stated these leads were for prototype testing of the sample holder tubes and that they did not receive information from B&W on this type testing. (Paragraph 6.d., Report Details)
 - c. The inspector stated that a complete family of measurements of the plenum set-up would have been desirable. However, essentially no information exists pertaining

to what the upper internal structure fit-up should be. The licensee stated that clearances were in the original vessel internals inspection procedure but claimed to be not necessary by B&W and were subsequently removed. The licensee indicated they would try to get the required dimensions to ensure adequate internal clamping forces.

- d. The inspector stated that the NRC would be interested in examining the internals prior to assembly and fuel loading. The licensee acknowledged the comment.
- e. The inspector indicated concern that the loose parts monitor would not give good indications of core barrel motion because of the lack of generating coherence and phase shift correlations. (Paragraph 11, Report Details)
- f. The inspector admonished the licensee to thoroughly clean and examine head closure studs as some indication of surface oxidation was noted. The licensee stated that they planned to clean the studs and threaded holes and would consider sealing the annulus area outboard of the studs which exists between the vessel and head flange surfaces. (Paragraph 5.d., Report Details)
- g. The inspector and the licensee discussed the steps being taken by the licensee to control steam generator water chemistry during this period of cold shutdown.

D. Management Interview of January 27, 1977

1. The following persons attended:

- L. Roe, Vice President, Facilities Development
- J. Evans, Station Superintendent
- E. Novak, General Superintendent, Power Engineering and Construction
- J. Lenardson, Manager of Quality Assurance
- C. Domeck, Project Engineer
- J. Buck, Quality Assurance Supervisor
- C. Daft, Quality Control Supervisor
- W. Green, Assistant to Station Superintendent

2. Matters discussed and comments were as follows:

- a. The inspector informed the licensee that he had completed discussions with his management, and it had been concluded that the requirements of T.S. 4.7.1.2.a.1 regarding testing of the Auxiliary Feedwater Pump represented an

exception to T.S. 3.0.4. This testing is to be performed after entering Mode 3 as soon as 925 psia steam is available.

(The inspector understands that the value of 925 psia is to be corrected to a value appropriate to this facility via discussions between NRR and the licensee.)

- b. The inspector indicated that he had closed out the items remaining from the inspection report No. 050-346/76-00 regarding Test and Measuring Equipment Controls, and Maintenance activity controls. (Paragraphs 1.a. and 1.b., Report Details)
- c. The inspector indicated that he had reviewed the minutes of recent meetings of the SRB and the CNRB. No significant deficiencies were noted during this review when compared to commitments of the licensee. (Paragraph 2, Report Details)
- d. The inspector summarized his review of completed and approved Test Procedure results. The inspector informed the licensee that his review of approved non-safety related test procedure results indicated that the licensee appeared to be as thorough in his review of these results as he has been in those safety related packages reviewed thus far. The licensee acknowledged the inspector's observations. (Paragraph 3, Report Details)
- e. The inspector noted that inspectors Martin and Tambling had received general orientation training. (Paragraph 4, Report Details)
- f. The inspector indicated which procedures the licensee has yet to submit for his review in approved form for the licensee to meet his commitments under Regulatory Guide 1.68. (Paragraph 5, Report Details)
- g. The inspector generally reiterated the results of the witnessing of the reactor internals inspection summarized previously in this report. (See Management Interview of January 14, 1977)
- h. The inspector generally reiterated the results of the inspection relative to the containment leak rate test results described previously. (See Management Interview of January 3, 1977)

In addition, due to a recent further review, the inspector pointed out that T.S. Table 3.6-2 indicates that the Containment Isolation Valves for Penetration 29 are DH11, DH12, DH1517 and DH1518. Review of a recent P&ID shows this not to be possible due to the open valves DH10 and DH26 which bypass DH1517 and DH1518. This definition must be reviewed and revised as appropriate, including appropriate testing.

The licensee indicated that he would initiate appropriate corrective action with NRR as required.

- i. The inspector summarized his review of the methods to be used by the licensee to evaluate the retesting of tested systems. (Paragraph 8, Report Details)
- j. The inspector summarized his findings with respect to the status of outstanding and overdue Audit Finding Reports. (Paragraph 9, Report Details)
- k. The inspector informed the licensee of his intent to notify NRR that he had reviewed the proposed removal of the ATI circuit from the SFAS, and that, in his view, this constituted adequate assurance that inadvertent reactivation of erroneous ATI signals would now be prevented.
- l. The licensee summarized his findings with regard to the actions taken relative to a prior item of noncompliance. (Paragraph 10, Report Details)
- m. The inspector summarized the comments developed during a portion of this inspection relative to the licensee's vibration and loose parts monitor system. The licensee indicated his confidence that the system would provide the operational capability that was desirable. In response to the inspector's inquiry as to whether or not the licensee planned to accumulate simultaneous power range monitor outputs as suggested by a staff member during the inspection, the licensee indicated he would consider the observation, but he would not commit to such measurement at this point. (Paragraph 11, Report Details)

REPORT DETAILS

Persons Contacted

The following persons, in addition to those listed under the Management Interview section of this report, were contacted during this inspection:

R. Brown, Assistant Engineer
G. Hurrell, Senior Assistant Engineer
J. Hartigan, Assistant Engineer
G. Meyer, Assistant Engineer
G. Humphreys, Instrument and Control Engineer
D. Hitchens, Assistant Engineer
D. Briden, Chemist and Health Physicist
J. Hughes, QC (TECo/Bechtel)
E. Michaud, Test Program Manager (B&W)
R. Mueller, Harnischfeger Service Representative
D. Borer, Bechtel Mechanical Field Engineer
J. Albert, Test Engineer (B&W)
D. Brimmer, Assistant Project Start-up Engineer (Bechtel)
T. Reddaway, Project Start-up Engineer (Bechtel)
H. Iskyan, Test Engineer (B&W)
J. Heaton, Bechtel QC

1. QA Program For Operations

During this inspection, the inspector verified that certain actions discussed during the QA for Operations inspection of April 26-29, 1976 (IE Inspection Report No. 050-346/76-06) were completed.

a. Test and Measurement Equipment Control

Pages 11 and 12 of that report discussed certain issues regarding this area. The inspector found that:

- (1) The licensee has revised the FSAR and the QAP2120 Series of Quality Assurance Procedures to conform to ANSI N45.2 - 1971.
- (2) The licensee has established controls over the handling of test equipment from the time it is found to be past due for calibration.
- (3) The licensee has revised AD184) (Revision 1, dated June 25, 1976) to permit the use of tag control to provide for control of defective and/or out of calibration equipment.

With the review of these actions, the inspector has no further questions regarding the licensee's quality assurance program for station operation controls over test and measuring equipment. The continuing review of the implementation of this program will be a part of the routine inspection program activities.

b. Maintenance

Pages 14 and 15 of that report discussed certain issues regarding this area. The inspector found that:

- (1) The licensee incorporated revisions to AD1844 (Revision 1, August 5, 1976) to provide additional guidance on the classification of maintenance (routine vs. non-routine). These revisions address the concerns discussed in the report.
- (2) The licensee has revised AD1839 (Revision 2, August 12, 1976) to expand the guidance to operational personnel regarding the precautions to be followed in removing or returning equipment to service. The revisions address the concerns discussed in the report.
- (3) The licensee's revision of AD1844 also included guidelines for the manner in which the SRB shall complete its periodic review of Maintenance Classifications.
- (4) The licensee has modified the MWO form to include the names of the individuals who completed the assigned work.
- (5) AD1844.01 (Revision 1, July 21, 1976) now include provisions which should provide assurance of the completion of scheduled preventive maintenance activities.
- (6) The revision to AD1844 has deleted the requirement for the review of Maintenance Classifications by the Station Superintendent.

With the above actions, the inspector has no further questions regarding the maintenance program portions of the licensee's QA Program for Station Operations. The review of the implementation of this program will be a part of the regular inspection program activities.

2. Review Group Activities

The inspector reviewed a sampling of the minutes of the Company Nuclear Review Board (CNRB) and the Station Review Board (SRB). The following is a list of the minutes reviewed:

a. CNRB:

<u>Meeting</u>	<u>Date</u>
8	September 30, 1976
7	August 26, 1976
6	July 29, 1976
5	June 24, 1976

(The inspector noted that a meeting of the CNRB was underway on January 27, 1977 during this inspection.)

b. SRB:

<u>Meeting</u>	<u>Date</u>
265	December 18, 1976
264	December 17, 1976
263	December 14, 1976
262	December 9, 1976
261	December 7, 1976
260	December 3, 1976
259	November 30, 1976
258	November 26, 1976
257	November 23, 1976
256	November 19, 1976
255	November 18, 1976

No deficiencies were noted when reviewing these minutes against current commitments of the licensee regarding meeting frequencies, quorum, material reviewed, action taken and personnel participating in review activities.

3. Completed And Approved Test Procedure Results

The inspector reviewed the following test procedure packages for completeness with regard to:

- a. Meeting acceptance criteria.
- b. Appropriate management review and approval.
- c. Conformance to the requirements of administrative procedures.

The review of these test procedure packages included reviews of temporary procedure changes, QC Verification sheets, chronological logs, deficiency reports, and other related material. No significant deficiencies were noted during this review.

TP130.03	Shop Area Crane
TP200.01	Reactor Internals Vent Value Removal and Replacement, Exercise and Inspection Test
TP200.09	SG Secondary Hydro Test
TP268.01	Intake Structure and Traveling Screen Acceptance Test
TP268.02	Screen Wash System Acceptance Test
TP270.03	Auxiliary Boiler Feedwater and Make-up Acceptance Test
TP281.02	Lube Oil Transfer, Purification and Storage System
TP302.01	Incore Instrument Handling Test
TP309.01	Start-up Test Panel
TP330.07	CRD Voltage Regulator Checkout and Main AC Transformer Acceptance Test
TP400.09	Instrument AC Acceptance Test

4. General Orientation Training of Inspectors

Two of the inspectors attended the licensee class on General Orientation Training and subsequently obtained security identification badges which permits them unescorted access within the protected area but not including vital areas.

5. Status of Completed Test Procedures

The inspector informed the licensee that approved copies of the following test procedures are yet to be provided to the inspector for his review:

TP301.01	NI Preoperational Calibration
TP710.01	Zero Power Physics Testing
TP800.00	Power Escalation Sequence Controlling Procedure
TP800.04	Natural Circulation Test
TP800.18	Power Imbalance Detector Correlation Test
TP800.31	Vibration and Loose Parts Monitor

Submission of these procedures will satisfy the licensee's commitments under Regulatory Guide 1.68. The licensee was informed that due to the recent decision which obligates the licensee to conduct the Natural Circulation Test (TP800.04), the licensee will not be required to provide an approved copy of that procedure prior to fuel loading.

6. Test Witnessing Activities - Reactor Internals

a. General

As a part of the start-up program, the licensee performed a vessel internals inspection prior to hot functional testing and was obligated to perform a similar internals inspection after completion of hot functional testing. An inspection was performed to review the internals inspection for evidence of excessive core barrel and plenum assembly motion, vessel internal component fit, and to witness critical aspects of the inspection program. Removal of the reactor head and initial examination and measurements of relative plenum assembly vertical position were witnessed during this inspection. Plenum assembly components were not removed at this time. However, examination of vessel internal components is planned at a later time.

b. Polar Crane Tests

An inspection of the containment polar crane revealed that greater than normal wear has been experienced in the lifting gear drive train. Harnischfeger recommended that until the drum set has been replaced and the gear train aligned, that the gear backlash not be adjusted and that the gears be coated with Molykote BR2-5 grease. Harnischfeger also advised that they be notified for the heavy vessel head removal pulls scheduled for January, 1977. A representative of Harnischfeger was available during load cell calibration to evaluate any encroachment on crane integrity. Calibration of the load cell was accomplished by sequentially adding one containment missile shield (each weighing approximately 50 tons) until a total weight of nominally 150 tons was lifted. Test data results from the load cell calibration were examined.

Discussions with the Harnischfeger representative revealed that the worn gears were showing full tooth contact. The Harnischfeger representative stressed the importance of coating gear contact surfaces with Molykote BR2-5. The Harnischfeger representative also indicated that he would be inspecting the crane during the removal of the reactor vessel head and any other heavy pulls associated with the vessel intervals inspection.

c. Reactor Vessel Head Removal

The reactor vessel head was removed during the evening of January 13, 1977. The breakaway force indicated on the load

cell was 320,000 bb_f and the pull force varied between 318,000 and 319,000 lb_f . The crane load was higher than the indicated pull force as the indicated value does not contain allowances for the lifting rig weight which is estimated at 10.4 tons. The Harnischfeger representative was available during the head removal to inspect the crane. The inspector witnessed the head removal.

d. Internals Inspection

After vessel head removal and pedestal positioning, the exposed plenum assembly and contact flange surfaces were physically examined. The vessel head showed indications of being in contact with the plenum assembly but essentially no indentation of the head plenum contact surface was noted. The internal O-ring seal showed evidence of leaking. The licensee indicated that the leaking seal was known to exist during hot functional testing.

The exposed plenum assembly was examined for signs of excessive motion. No worn key and/or key ways or worn flange surfaces were observed. The plenum assembly was not removed to allow examination of contact surfaces at this time.

Prior to assembly for hot functional testing, the licensee measured the relative vertical height of the plenum assembly with respect to the vessel flange at eight locations around the flange circumference. The relative vertical height at these same locations were measured after head removal. The technique used during the initial measurements appeared to yield questionable data. Therefore, a longer "gage block" (bar stock) was used. The measurements appear to indicate that a slight downward vertical displacement has transpired since initial assembly. The clearances required to maintain design clamping force were not known by the licensee.

During examination of the plenum assembly upper regions, several clad leads in a wire bundle located at the North (W) axis were noted to have the clad upturned, insulation missing and the broken wire exposed. These clad wires are attached to transducers used in prototype testing of Surveillance Specimen Holder Tubes by B&W. The licensee did not know when the wires failed or the impact on the Surveillance Specimen Holder Tube tests as B&W was conducting the tests.

Examination of the threaded stud holes in the reactor vessel flange indicated that the studs had been exposed to excessive moisture. The licensee stated that during hydrostatic

testing a failed fitting could have allowed water to enter the annulus area around the closure stud bolt circle where the reactor vessel and head flanges are not in contact. The actual condition of the closure studs was not examined as they had not been removed from the head flange.

7. Review of Containment Overall Leak Rate Test (OLRT) Results

The inspector met with and discussed the results of his review of matters associated with the OLRT report submitted by the licensee.

a. Valves Tested in Direction Opposite to DBA Conditions

The licensee identified a group of penetrations whose design did not permit them to be tested in the direction of the Design Basis Accident. These penetrations are listed below:

<u>Penetration</u>	<u>Description</u>	<u>Valve Type</u>
a. P3,4	CCW inlet/outline line	Butterfly
b. P8A-J	Containment Vessel Vacuum Breaker	Butterfly
c. P19	High Pressure Injection Line	Check Valve
d. P25,26	Containment Spray Line	Globe
e. P33,34	Containment Vessel Purge Inlet/Outlets	Butterfly
f. P51	Hydrogen Purge System Exhaust	Butterfly
g. P56	Reactor Coolant Pump Seal Water Return	Globe
h. P68B, 71,73B and 74	Containment Air Sample	Ball

According to 10 CFR 50, Appendix J, Section III.C.1, test pressure shall be applied in the same direction as that when the valve would be required to perform its safety function, unless it can be determined that the results from the tests for a pressure applied in a different direction will provide equivalent or more conservative results.

During the inspection, the licensee made a presentation to support the testing of the above referenced group of valves with respect to 10 CFR 50, Appendix J, Section III.C.1. The presentation consisted of the following arguments.

Ball/Globe Valves: These valves are bidirectional and the leak tightness is not affected by the direction of the applied pressure. Reverse direction testing produces equivalent results.

Butterfly Valves: Butterfly Valves are rotating valves on a horizontal shaft. Pressure applied in either direction tends to seat half the valve and unseat the other half. Reverse direction testing produces equivalent results.

Check Valve: The stop check valve in question is contained in the high pressure injection line. Testing in the opposite direction tends to unseat the valve. Accident pressure would tend to seat the valve. Reverse direction testing produces more conservative results.

The inspector accepted the validity of the licensee's reverse direction testing as being in accordance with 10 CFR 50, Appendix J, Section III.C.1 and considers this item to be closed out.

b. Equipment Hatch

The licensee has committed to leak test the equipment hatch prior to power ascension following the last equipment hatch opening during preoperational testing or during an outage.

However, there are no specific acceptance criteria on maximum allowable equipment hatch leakage other than the general criteria contained in 10 CFR 50, Appendix J: Sum of local leak rate tests shall be less than $.6L_a$; or contained in the Davis-Besse Technical Specifications: The sum of the local leak rates for penetrations classified as bypass (Table 3.6-1) shall be less than $.015L_a$.

Additionally, the licensee's equipment hatch procedure does not reference any specific acceptance criteria, or either of the two general criteria referenced above. Consequently, during the performance of an equipment hatch local leak rate test, the operator would have no direct way of knowing whether any technical specifications or regulations are being exceeded.

The inspector requested and the licensee committed to propose a method for tracking the equipment hatch leakage as a function of the above two referenced general criteria. A description of this procedure will be requested in a response to this inspection report.

c. Maintenance Procedures for Valve Repair

Procedures involving repair of safety related containment isolation valves do not include a mandatory local leak rate test following valve repair. Only a general statement that a local leak rate test will be performed as necessary is contained in the procedures for guidance.

10 CFR 50, Appendix B, Section V, "Instructions, Procedures, and Drawings," states that procedures shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The licensee committed to provide a procedure which would include the acceptance criteria he would use for determining when maintenance on a safety related containment isolation valve was adequate and specifically when a local leak rate test would be required. A description of this procedure will be requested in a response to this inspection report.

d. Computing the Sum of the LLRT Leakage

The acceptance criteria governing maximum allowable leakage from containment isolation valves specified in Technical Specification Table 3.6-2 or in bypass leakage Table 3.6-1 is that the sum of leakage from valves or penetrations be less than .6La and that the sum of the bypass leakage be less than .015La.

The licensee has adapted the convention of summing the leakage per penetration by including only the maximum leakage value when two valves are in series. The convention used in summing the leakage is important because it governs when a valve repair is necessary. The inspector accepts the convention used by the licensee.

Because the computation of the sum of the local leak rate tests is critical in determining whether valve repair is necessary, the inspector requested and the licensee committed to provide the mechanism he will use to track the results of local leak rate tests. For consistency in determining how to compute this sum in future, the summing technique described above and the tracking mechanism to be utilized should be provided in a procedure. A description of this mechanism will be requested to be included in a response to this inspection report.

e. Decay Heat System

10 CFR 50, Appendix J, Section III.A.1.d requires that containment isolation valves which are part of fluid systems normally

filled with water (post-LOCA) be subjected to Type C leak rate testing. The licensee has indicated that requirements for having this system in service, when fuel in the vessel and decay heat removal is necessary, will preclude the possibility of future Type C leak tests. The licensee was informed that a specific exemption to the requirements of Appendix J would have to be obtained.

During a subsequent review of this penetration (No. 29), and a comparison of the valve locations as shown on a recent revision of a Piping and Instrumentation Diagram (M-033, Revision 22), it was noted that a modification to the valving arrangement at this penetration was in progress.

Technical Specification Table 3.6-2 lists valves DH1517 and DH1518 as two of the isolation valves for this penetration. However, the licensee is adding normally open, manual valves DH10 and DH26 which serve to bypass valves DH1517 and DH1518. This modification thus negates the isolation function of these two valves. The licensee was informed that a redefinition of the isolation valves for Penetration 29 will have to be established and approved, and that appropriate local leak rate testing will have to be conducted.

f. Review of Integrated Leak Rate Test Report

During the inspection the licensee's report describing the results of the 1976 Davis-Besse Integrated Leak Rate Test were reviewed. The inspector has no further questions regarding this item.

8. Review of Construction Work Permit Activity

The Construction Work Permit (CWP) system is an administrative mechanism by which the licensee controls and reviews the work performed by construction work forces on systems which have been turned over to the operating staff for test and operations activities.

The inspector intended to review the status of these CWP's to evaluate what retesting of safety related systems might be called for since a substantial number of CWP's were issued upon the completion of the Hot Functional Testing Sequence. However, this inspection activity was deemed unnecessary because the inspector, upon his arrival at the site, was informed that the licensee had already taken the following actions with regard to these concerns:

- a. All Field Change Packages (FCP) and system Revision Notices (SRN's) will be reviewed by the Test Leader who has responsibility for testing of a system to perform an initial evaluation as to whether a revised test of that system is required.
- b. If the Test Leader concludes that a revised test is not required, the Station Review Board (SRB) will review that recommendation and advise the Station Superintendent accordingly.
- c. If the Test Leader concludes that a revised test is necessary, the SRB will not review that decision directly, but will retain its involvement by reviewing the revised test procedure which will have to be prepared.
- d. All additional FCP's and SRN's generated in the future (during the preoperational testing phase) will be similarly handled.

The inspector noted that these review activities will be inspected during subsequent inspections, and the licensee was encouraged to assure that these activities were adequately documented.

9. Status of Audit Finding Report (AFR) Close-outs

The inspector reviewed the licensee's AFR records to determine the rate at which AFR responses were being processed and closed out. The inspector was aware of the following licensee actions in this regard:

- a. Memo December 23, 1976, J. Evans to his senior staff calling for increased actions to clear AFR's.
- b. Corrective Action Request No. 5-76 (January 23, 1976) from QA to L. Roe requesting action on his part to accelerate the clearing of AFR's.
- c. Memo of January 4, 1977, L. Roe to his senior staff calling for increased actions to clear AFR's.

The inspector noted that there are now (as of close of this inspection) 19 AFR's which are listed as overdue, and a substantial number which are not yet complete, but not yet overdue. The inspector recognized that a period of unusually high workload for all personnel existed during November and December due to the Hot Functional Testing activities and preparations for Operator Licensing Exams. In view of this, the inspector requested and received a commitment from the licensee that the status of AFR's would be reviewed, and a realistic schedule of completion would be

established between the QA staff and the audited organizations, and the schedule subsequently adhered to. This schedule will be available for review by the inspector during the next scheduled inspection.

10. Noncompliance Review

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 the corrective action was as follows:

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- (a) Item A: During this inspection, the inspector reviewed the marked-up insulation drawings showing reactor coolant system insulation installed without cleaning of the piping, and that which was subsequently removed and inspected. The inspector also reviewed the Field Inspection Reports (of the cognizant BCM QC Inspector) for the period November 24, 1976. This item is closed.
- (b) Item B: This item was previously closed during the inspection reported in IE Report No. 050-346/76-24.

11. Vibration and Loose Parts Monitoring

The techniques used for vibration and loose parts monitoring were examined. The licensee has taken vibration spectral data (accelerometer output) from ten selected excore locations in the 0-512Hz range. The accelerometers are located on the lower reactor vessel, reactor vessel head, steam generators and reactor coolant pumps. Additional data has been obtained in the higher frequency range of nominally 10kHz for the reactor coolant pumps. The licensee does not appear to have the capability of obtaining time dependent coherence and phase relationship data with the Loose Parts Monitoring System. This may limit the ability to detect subtle core barrel and associated component motion. A licensee representative indicated they planned to take simultaneous Brush Recorder traces of the excore neutron detector outputs during reactor power escalation testing for comparison reasons. (See January 27, 1977 Exit Interview test in this report for further comments on this matter.) The licensee stated that B&W had performed independent noise and vibration monitoring tests but had not yet received the B&W analyses.