

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

REGION III

Report No. 50-358/80-03

Docket No. 50-358

License No. CPPR-88

Licensee: Cincinnati Gas and Electric  
139 East 4th Street  
Cincinnati, OH 45201

Facility Name: Wm. H. Zimmer Nuclear Power Plant

Inspection At: Zimmer Site, Moscow, Ohio

Inspection Conducted: January 22-24, 1980

Inspectors: *T. E. Vandel*  
T. E. Vandel

2-21-80

*E. J. Gallagher*  
E. J. Gallagher

2-21-80

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

2-21-80

Inspection Summary

Inspection conducted January 22-24, 1980 (Report No. 50-358/80-03)

Areas Inspected: Followup review of previously identified noncompliance and unresolved matters; review of the licensee response to I&E Bulletin 79-02; and review of procedures relative to the containment structural integrity test. The inspection involved 32 inspection-hours on site by two NRC inspectors.

Results: One item of noncompliance was identified, an infraction, regarding lack of compliance with design requirements in approved test procedures.

8004210142

## DETAILS

### Persons Contacted

#### Principal Licensee Employees

- \*B. K. Culver, Project Manager
- \*J. C. Herman, Structural Engineer
- \*D. C. Kramer, QA&S Engineer
- \*W. W. Schwiers, Manager, Quality Assurance
  - R. P. Ehas, QA&S Engineer
  - J. F. Weissenberg, QA&S Engineer
  - R. L. Wood, QA&S Engineer

#### Principal Contractor Personnel

- \*K. R. Baumgarten, QA Manager HJK
- \*R. Marshall, Project Manager HJK

#### U.S. Nuclear Regulatory Commission

- \*F. T. Daniels, Resident Inspector

\* Denotes those present at the exit interview

Personnel of Cincinnati Gas and Electric Company (CG&E), H. J. Kaiser Company (HJK), and other construction personnel were contacted during the inspection.

#### Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (358/79-14-24): Incomplete review of testing of watertight doors. This item was further inspected during July 17-20 and 24-25, 1979 and the closeout of this is included at the end of page six of Report No. 50-358/79-23. The inspector has no further questions regarding this item.

(Closed) Noncompliance Item (358/79-14-08): Lack of corrective action and closeout of audit findings. Further review was conducted of audit report No. 253 and the closeout of the six identified deficiencies. Correspondence showed that all deficiencies, relating to other auditors, had previously been corrected and closed, leaving only the cited auditor in report item number 4.c. During this inspection, the inspector learned that the auditor involved had completed a re-review of the procurement documents package utilizing the proper checklist (Form QAS-106) on January 16, 1980. A surveillance audit report was completed of this activity on January 23, 1980 establishing acceptability of the re-review, and closing the last previous audit (Report No. 253, item 4.c) deficiency. The inspector accepted this as being sufficient corrective action to close the noncompliance item.

(Closed) Noncompliance Item (358/79-14-15): Audits of calibration not sufficiently comprehensive. During this inspection, the inspector learned that a re-audit for calibration traceability had been included in an internal report No. 409 by addendum dated January 24, 1980. This addendum reported the results of auditing for calibration traceability as follows:

1. Gage blocks S/N 762740
2. Deadweight tester S/N 1JA 45228
3. Torque meter S/N 1010
4. Partial immersion thermometer S/NE-73161

All items reviewed were determined to be traceable to the National Bureau of Standards. It was further learned that this quality element would be again audited during 1980. The inspector concurred that this noncompliance item had been resolved.

(Closed) Unresolved Item (358/79-29-01): Deep draft pumps long term prototype test. The inspector reviewed test results data of operational test performed on the high pressure core spray (HPCS) pump equipment number E22-C001 S/N 0872133. The data reviewed by the inspector included the following:

1. Certificate of Compliance, signed by Cameron Test Dept. representative and approved by a General Electric Co. (GE) inspector on May 11, 1976, stating that the endurance test was conducted in accordance with agreement between Ingersoll Rand and General Electric.
2. NPSH Test results
3. Endurance Test results

It is noted that the tests were witnessed by a GE representative and the results accepted by not only GE but Sargent and Lundy (S&L) as well. The inspector concluded that this prototype test appeared adequate.

(Open) Noncompliance Item (358/79-12-01): Welding completed without completion of inspection points. As of this inspection, the inspector learned that the committed review of all restraints within primary containment has been completed and that a nonconformance report (No. E-2203) has been issued. This report consisted of 16 pages of 53 separate items of deficiencies. No disposition of the deficient items has been prepared yet. Further review will be conducted during future inspections.

(Upgraded) Unresolved Item (358/78-03-02): Inadequate structural integrity test procedure. Please see paragraph 1 of the Functional or Program Areas Inspected section of this report for the details of this item.

## Other Inspection Areas

### 10 CFR Part 50, Section 50.55(e) Reportable Deficiencies

The inspector reviewed activities that have taken place regarding the following reported deficiencies:

#### Gould, Inc. Defective Nema 3 Starters

A work request (WR 00228) signed on November 26, 1979 was issued to check all motor control centers for defective contactors. This work was completed on November 28, 1979 with a total of 22 size three Gould starters of six different motor control centers checked for date stamp numbers identified by Gould as being among the defective type and for carrier clearance (.015"). Only one contactor carrier was found that had a clearance problem. (Breaker AB 1A-4E, standby liquid control pump 1A). It was established that this carrier assembly was replaced with a new carrier supplied by Gould Inc.

The inspector concluded that this reported deficiency has been adequately corrected.

#### I&E Bulletin 79-02

I&E Bulletin 79-02 response was discussed with the licensee during this inspection. The RIII concerns are addressed in paragraph 2 of the Functional or Program Areas Inspected section of this report.

### Functional or Program Areas Inspected

#### 1. Review of Containment Structural Integrity (SIT) Procedure

The inspector performed a review of the Zimmer plant Containment Structural Integrity Test procedure to verify that the procedure includes the requirements of Regulatory Guide 1.18, ASME Section III, Division 2, Article CC-6000, 1977 Edition and the licensee FSAR commitments.

This item was previously reviewed in Report No. 358/78-03-02 dated January 30-31, 1979 and was considered an unresolved matter. This followup was to verify the corrective action taken to the subject unresolved matter. It was determined that the procedure PRP-05 had been fully approved by engineering and quality assurance as of April 5, 1979. The procedure did not incorporate the applicable design requirements set forth in the CG&E FSAR and ASME Section III, Division 2 code.

This matter is considered an item of noncompliance with 10 CFR 50, Appendix B, Criterion XI (Test Control) as described in detail in the Notice of Violation attached to the letter of this report (358/80-03-01).

2. Evaluation of Licensee Response to IE Bulletin 79-02

An evaluation and inspection was performed of the licensee's response to IE Bulletin 79-02, pipe support base plates using concrete expansion anchor bolts. Previous inspection of this item is documented in NRC inspection reports 358/78-18, 358/7822 and 358/79-03 performed prior to issuance of the subject bulletin.

- a. Item 1 regarding the developing of anchor bolt loads including base plate flexibility has been reviewed by the NRC staff (NRR). Their review indicates that the bolt stiffness used in the flexibility analysis is not acceptable in that the stiffness used is too low. In addition the staff intended the flexibility analysis to use the maximum design load rather than four times that load as indicated in Section 3.3.1 of the July 6, 1979 submittal. This item is considered unresolved (358/80-03-02).
- b. Item 2 required the licensee to verify that a minimum factor of safety of four for wedge type anchors and five for shell type anchors exist between bolt design load versus bolt ultimate loads. The licensee's response is considered unacceptable in that a minimum factor of safety of two was used for emergency and faulted conditions. This item was brought to the attention of the licensee and is considered unresolved pending submittal of a revised response (358/80-03-03).
- c. Item 3 required the design requirements for anchor bolts to withstand cyclic loads. The licensee's response indicated that the base plate design used Operating Basis Earthquake event. The bulletin intended the licensee to use Safe Shutdown Earthquake (SSE) event. The licensee's response is considered unacceptable pending submittal of a revised response to include the effects of SSE loading. The item is considered unresolved (358/80-03-04).
- d. Item 4 required the licensee to perform a field verification of base plate installations using concrete expansion anchors. The licensee did establish a field inspection program to verify installation of the expansion anchors. The program has identified a significant number of nonconformances and deficiencies.

The S&L procedure DDC-328 Section 2.2.2 requires "one bolt per hanger shall be inspected for torque and minimum embedment. If this selected bolt is unacceptable, all bolts of the hanger shall be inspected." This inspector questioned the validity of the one bolt per hanger sample in view of the significant number of nonconformances identified on the first bolt inspection.

The inspector requested the licensee to develop a summary identifying the nonconformance number, the hanger support effected, a description of the nonconformance, and the status of the nonconformance in order to evaluate whether a 100% inspection is required. This item is considered unresolved pending the above review (358/80-03-05).



- e. Item 5 required the licensee to determine the extent that concrete expansion anchors were used to attach piping systems to masonry block walls. In addition, this item required a list of systems, the number of supports, line size and accessibility of supports attached to block walls.

The licensee's response indicates the use of block walls to support piping systems; however, is incomplete in that the information requested was not included in the response.

The inspector determined by S&L letter (SLC-11991) dated January 9, 1979 that the Zimmer plant has 311 masonry block walls that are used to support pipe supports.

This item is considered unresolved pending submittal of the required information requested by Item 5 of the subject bulletin (358/80-03-06).

The subject of concrete expansion anchors used in block walls to support cyclic loads is under review by the NRC staff.

#### Unresolved Items

Unresolved matters are items about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance or deviations. Unresolved matters disclosed during this inspection are discussed in paragraph 2 of the Functional or Program Areas Inspected section of this report.

#### Exit Interview

The inspectors met with site staff representatives (denoted in the Persons Contacted paragraph) at the conclusion of the inspection on January 24, 1980. The inspectors summarized the scope and findings of the inspection and emphasized the concern regarding the inadequate Containment Integrity Test procedure that had been reviewed and approved by licensee personnel.