

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

REGION III

Report No. 50-358/80-10

Docket No. 50-358

License No. CPPR-88

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

Facility Name: William Zimmer Nuclear Power Plant

Inspection At: William Zimmer Site, Moscow, Ohio

Inspection Conducted: May 1 and 2, 1980

Inspector: *K. R. Naidu*
K. R. Naidu

5/21/80

Approved By: *D. W. Hayes*
D. W. Hayes, Chief
Engineering Support Section 1

5/21/80

Inspection Summary

Inspection on May 1 and 2, 1980 (Report No. 50-358/80-10)

Areas Inspected: Review of corrective action taken on previous items of noncompliance, status of previously identified unresolved matters, IE Bulletin and quality assurance records. The inspection involved a total of 16 inspection hours by one NRC inspector.

Results: No items of noncompliance were identified.

DETAILS

Persons Contacted

Cincinnati Gas and Electric Company (CG&E)

B. K. Culver, Project Manager
*R. P. Ehas, QA&S Engineer
D. C. Kramer, QA&S Engineer
W. W. Schwiers, Principal QA&S Engineer
J. F. Weissenberg, QA&S Engineer
R. L. Wood, QA&S Engineer

Henry J. Kaiser (Kaiser)

E. V. Knox, QA Manager
R. Marshall, Project Superintendent

Other Contractor Personnel

*G. Grosardt, Superintendent - Kramig
*L. Stewart, QC Inspector - Tech-Sil
*M. Troman, Technical Advisor - Tech-Sil

Waldinger Young & Bertke (WYB)

*D. G. Martin, Project Manager, Sheet Metal
*D. M. Steindam, Site QA Supervisor

*Denotes those who were not present at the exit interview. Other CG&E, Kaiser, and other contractor personnel were contacted during the course of the inspection.

Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (358/77-13-01) - Qualification records for electrical equipment. This item is being addressed in the compliance to IE Circular 78-08 and instrument/electrical equipment environmental qualification requirements for near term plants for operating license.

(Open) Unresolved Item (358/78-16-07) - It was previously reported that at approximate elevation 523' inside the containment, a service air line was installed about 4' above safety-related instrument lines. The licensee stated that this type of installation will be generically reviewed by S&L, the A/E. A separation Task Force Audit Team (Task Force) consisting of engineering and technical personnel designated by the licensee and S&L audited the separation of electrical equipment in the plant. The on site audit was completed on March 27, 1980 and the report finalized on

April 2, 1980. The licensee stated that a similar audit will be performed on the mechanical piping installation. Pending review of this audit, this item remains open.

(Open) Unresolved Item (358/79-03-03) - Electrical conduits attached to leak chase channels inside the containment. The licensee's evaluation will be reviewed by NRR.

(Open) Unresolved Item (358/79-03-04) - The installation of safety-related instrument hangers to containment leak chase channels. The licensee's evaluation will be reviewed by NRR.

(Open) Noncompliance (358/79-13-01) - Qualification of gasket material used in HVAC System. The licensee received a letter from Sargent and Lundy (S&L), the AE, informing them that the material used by Goodyear in the manufacture of HVAC fan flexible connections was not the same material which underwent environmental tests. The licensee, together with Waldinger, Young, and Bertke, located flexible connections manufacturer with "Viton", which successfully withstood 2.3×10^7 rads. The licensee is awaiting approval from S&L. Pending the installation of acceptable flexible connections, this item remains open.

(Open) Unresolved Item (358/79-14-01) - Check lists to verify the adequacy of the installed HVAC equipment were not complete and approved by S&L. A checklist titled "HVAC Inspection" has been developed to verify the adequacy of Mechanical Equipment Installation. Preliminary review of the checklist indicates that the intent of the verification may not be accomplished. The licensee agreed to revise the checklist. Pending review of the revised checklist, this item remains open.

(Closed) Noncompliance (358/79-28-01) - During a previous inspection, it was determined that the restoration of the cleanliness of the electrical components adjacent to the control room was not complete. The construction opening has been closed and the Zonolite area has been cleaned. The inspector observed that the panels in the control room which were exposed to the dust have since been cleaned. The cleanliness inside the control room is being maintained by cleaning the panels at various intervals.

(Open) Noncompliance (358/79-39-20) - The noncompliance consisted of two parts, namely:

- a. Modifications were being supervised by the electrical test group without being reinspected by individuals (QC) other than those who performed or supervised the activity. The relevant QACMI, E-8, was revised and Revision 10 dated April 23, 1980 states in part "The Henry J. Kaiser (HJK) Electrical QAE or his designee shall be responsible for reviewing design changes, subsequent to April 1, 1980, of essential wiring diagrams to insure that physical changes to wiring are reinspected by HJK/QA". During a training session

conducted on May 1, 1980, the test personnel were notified of the procedural changes. This plan has not been implemented. Pending review of implementation, this item remains open.

- b. The second part was whether the licensee would establish through an audit the acceptability of the modification performed prior to April 1, 1980. The licensee is in the process of scheduling an audit, this item remains open.

Other Areas Inspected

Part 21 on Ruskin Fire Dampers

It was reported that the negator type may slip out of the spring holding slot in Ruskin's vertical Curtain Type Fire Dampers, Model N1BD23. Waldinger, Young and Bertke (WYB) purchased five Ruskin Fire Dampers, Model N1BD23, which were delivered to the site during March 1980. WYB letter dated February 27, 1980 indicates that the five dampers identified as 1VX10Y, 1VX11Y, 1VC96Y, 1VC97Y, and 1VC98Y were scheduled for shipment during February 1980. WYB contacted Ruskin and requested shop modifications to the dampers to retain the spring be made prior to shipment. Ruskin informed WYB on February 26, 1980 that the modifications were completed in the shop and that the dampers would be shipped on February 27, 1980. Inspection Report dated March 6, 1980 indicates that WYB receipt inspected the fire dampers on arrival. Welding, dimensional, documentation and drawing conformance were verified; no adverse findings were identified. During discussions with WYB, it was determined that further modification to Ruskin drawing 5564 will be necessary. The modification involves installation of a guide to maintain the correct blade orientation during closure. The modification is expected to be carried out by Ruskin personnel who will be dispatched to the site.

IE Bulletin 78-01

The inspector reviewed the corrective action taken by the licensee and determined that Field Deviation Disposition Request (FDRR) No. KN-1-554 dated March 2, 1978 requests replacement of contact arms on three relays in each RPS MG set control panel. The relays involved are of CR120A type. Equipment Trouble Report (ETR) No. 793 was initiated and the contact arms replacement was verified to be complete on January 16, 1979. The inspector has no further questions in regard to the licensee's action on this bulletin.

Functional or Program Areas Inspected

1. Review of Fire and Radiation Resistant Seals Installation Activities

a. Observation of Installed Seals

The inspector observed the seal installed on penetration identified as 474 located in the Turbine Building at approximate

elevation 527 -0" at column 19 along "L" row. This penetration is identified on S&L drawing M-531 sheet 2 titled "Penetration Locations Turbine Building Plan Elevation 527'0". Seal requirements for the penetration specified on S&L drawing M-531, sheet 6, Revision W, show that the seal type is 3AA. S&L drawing M-529, Sheet 16, Revision C indicates that types 3A and 3AA seals are leaded silicone elastomer for pipe sleeves with uninsulated cold pipe or with anti-sweat insulation removed having a thermal movement of 1/4" or less.

b. Review of Inspection Records

The inspector reviewed the relevant Tech-Sil checklist sheet No. 120 dated February 2, 1979. Tech-Sil is the installation contractor. The record indicates that the seal for penetration MK474, was test piece number 200, the seal depth was 4'4" and that the seal was acceptable. Test log sheet No. 16 indicates that for test piece No. 200, the system number is 133 and that the density as determined on Scale TS-101 was 157.7 pounds per cubic foot. System log sheet 34 indicates the following constituted the mix:

Type of Material	Weight in lbs.
D.C. Sylgard, 170, Lot A, Batch EKI184F0	169.5
D.C. Sylgard, 170, Lot B, Batch EKI184F0	149.0
Sandflour, RR Type Lot A	61.5
RR Type Lot B	79.0
Lead, 572, Lot A	250.0
Lead, 572, Lot B	250.0
DC1107, Fluid added to Lot B	9.0

c. Discussions with Tech - Sil Personnel

The following information was provided by Tech-Sil personnel:

- (1) No electrical penetrations have been installed to date.
- (2) 12,300 pounds of High Density leaded gel (HDLG) was used at the site intended for penetration where a 1/4" pipe movement was predicted; in rigid seals leaded elastomer was used. However, 3200 lbs. of sealant had to be removed as unacceptable from penetrations 3063, 3069, 3070, 3071, 3072, 1210 and 1568 at elevation 546' in the turbine building because the sealant would not set. Since March 28, 1980, Tech-Sil used High Density Zinc Gel instead of High Density Leaded Gel and to date no setting problems have been encountered.

No items of noncompliance were identified in the above areas.

2. Review of Suppression Pool Modification QA Records

The inspector reviewed the following records relative to the modifications in the suppression pool involving the installation of "T" quenchers:

a. The following salient aspects were verified during the installation of baseplates identified as 19E, 20E, and 21E:

- (1) Layout of the wall plate is according to S&L drawing
- (2) Insert liner plates are as per drawings
- (3) Rebar detection was performed
- (4) Cone bore operation
- (5) Preparation of concrete surfaces
- (6) Installation of anchor bolts
- (7) Locate bolt holes to template
- (8) Installation of 2-7/16" thick wall base plate and replacement liner plates
- (9) Placement of grout and testing of the grout
- (10) Stud tensioning

The records indicate that Quality Control inspections were performed during various stages of installation, and that no unacceptable findings were identified.

b. Test report from H. C. Nutting Company dated July 2, 1979 indicates that "cone strip tests" were performed on 1-1/2" heavy hexagonal nuts (supplied by the licensee). The nuts successfully withstood 143,600 pound proof load.

c. Material Receiving Report No. 59901 indicates that the following material was received on January 1, 1980 from ACIMET Manufacturing, Cleveland, Ohio:

- (1) 207 pieces ASME SA 193 Grade B7 1-1/2" diameter 1'8-1/2" long, bolts, threaded 4" each end (8 threads per inch)
- (2) 420 pieces 1-1/2" diameter heavy hexagonal nuts ASME SA 194 Grade 7

(3) 420 pieces 1-1/2: diameter hexagonal jam nuts ASME SA 194 Grade 7

d. Review of the HJK purchase order 339985 dated March 29, 1979 indicates that the bolts and nuts should meet the requirements of ASME Code Section III 1971 Edition with the 1973 Summer Addenda. The ASME Code Section III refers to Section II for SA materials; the opening statement on ASME SA 193 states that the specification is identical to ASTM A193-70. Review of paragraph 9.2 of ASTM A193 indicates that the maximum hardness shall be Brinnel Hardness Number (BHN) 235 or Rockwell 99 for B7M bolts, which have a minimum tensile requirements of 100. Table 3A "Approximate Hardness Conversion Numbers for Non Austenitic Steels" in ASTM A 370 indicates that for approximate tensile strength of 125 Ksi the BHN should be 258. Test Certified Material Test Reports (CMTR) from ACIMET Manufacturing Company, the supplier, indicates that the BHN for the nuts is above 300 and after heat treatment for 24 hours at 1100°F is 285. The inspector requested the licensee to obtain the following information:

- (1) CMTR from ACIMET, corrected on February 12, 1980 does not provide BHN values for 1-1/2" diameter studs with heat numbers R-26, AV-20 and U-20. What were the BHNs?
- (2) The CMTR indicates that 1-1/2" nuts which originally had a BHN values of 311 and 321, were heat treated for 24 hours at 1100°F, after which the BHN values were 285. The normally recommended heat treatment time is one hour per inch thickness. Why was a 24 hour heat treatment performed?
- (3) At what locations on the bolts or nuts were the BHN measured?
- (4) How were the bolts and nuts quenched after heat treatment?
- (5) An evaluation of the BHN values of the bolts and nuts to determine that they would perform satisfactorily.

Pending receipt of the above additional information, this item is considered unresolved (358/80-10-01).

Note: Neither the ASME SA 193 and 194 nor the ASTM A 193 and 194 are clear about the exact BHN values.

No items of noncompliance were identified in the above area.

Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. One unresolved item identified during this inspection is discussed in paragraph 2.d.

Exit Interview

The inspector met with the licensee staff (denoted in the Persons Contacted paragraph) at the conclusion of the inspection on May 2, 1980. The inspector summarized the scope and findings of the inspection and the licensee acknowledged the findings.