

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-440/85049(DRS)

Docket No. 50-440

License No. CPPR-148

Licensee: Cleveland Electric Illuminating Company
Post Office Box 5000
Cleveland, Ohio 44101

Facility Name: Perry Nuclear Power Plant, Unit 1

Inspection At: Perry Site, Perry, Ohio

Inspection Conducted: July 23 through 26, 1985

Inspector: *W. J. Key*
W. J. Key

8/14/85
Date

Approved By: *D. H. Danielson*
D. H. Danielson, Chief
Materials and Processes Section

8/15/85
Date

Inspection Summary

Inspection on July 23 through 26, 1985 (Report No. 50-440/85049(DRS))

Areas Inspected: Unannounced safety inspection to review HVAC installation documentation, and perform a walkdown of the as-built systems. This inspection involved a total of 32 onsite inspector-hours and 8 off-site inspector-hours by one NRC inspector.

Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted

Cleveland Electric Illuminating Company (CEI)

*E. Riley, NQAD General Supervisor
*G. Parker, NQAD Contract Supervisor
*J. Lehman, Staff Analyst
*F. Stead, NED Manager
*B. Ferrel, Licensing Engineer
*K. R. Pech, General Supervising Engineer
S. Hurley, Quality Engineer
R. Czyzewski, Lead Quality Engineer

Robert Irsey Company (RICO)

J. Yemma, Construction Quality Supervisor

*Denotes those attending either the entrance/exit or both meetings.

2. Heating, Ventilating and Air Conditioning (HVAC)

Inspection Objectives

The purpose of this inspection was to determine from a review of as-built drawings, specifications, procedures, and documentation that installation of safety-related HVAC systems were in compliance with NRC requirements, licensee commitments and the referenced codes and standards. The design of the HVAC systems was by Gilbert Associates and the installation contractor is Robert Irsay.

a. Specifications

The inspector reviewed Gilbert specification SP-4549-00, dated June 6, 1977 through Revision 2, dated June 30, 1983. The following codes and standards are referenced and form a part of this specification:

- ° AMCA-No. 500, Air Moving and Conditioning Association.
- ° American Concrete Institute (ACI) 301-72 Specification for Structural Concrete for Buildings.
- ° American National Standards Institute (ANSI) N45.2.1, N45.2.2.
- ° ASHRAE-33-64, Method of Testing for Rated Forced Circulation, Air Cooling Coils and Air Heating Coils.

- ASHRAE-52-68, Method for Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter.
- ASME Code, Section I, Power Boilers and Section IX, Welding and Brazing Qualifications.
- American Society for Testing Materials (ASTM) A-36, Specification for Structural Steel
- ASTM A-123, Specification for Zinc (Hot-Galvanized) Coatings.
- ASTM A-525, Specification for General Requirements of Zinc Coated (Galvanized) Iron or Steel Sheet, Coils.
- ASTM A-526, Specification for Zinc Coated Carbon Steel Sheet of Commercial Quality.
- ASTM A-527, Specification for Zinc Coated Carbon Steel Sheet Lock Forming Quality.
- ASTM D-1056, Specification for Sponge and Expanded Cellular Rubber Products.
- ASTM A-167, Specification for Corrosion-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- ASTM A-240, Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Fusion-Welded Unfired Pressure Vessels.
- American Welding Society (AWS) AWS-D1.1, 1975, Structural Welding Code.
- AWS-D1.3, 1978, Specification for Welding Sheet Steel in Structures.

b. Procedures

The inspector reviewed the RICO procedures identified below for conformance to specification, NRC, Code and Standards requirements:

(1) Welding Procedures

- WP-707-1, Revision 4, Shielded Metal Arc (SMAW) Welding of Carbon Steel.
- WP-707-2, Revision 2, SMAW of Carbon Ductwork and Accessories.
- WP-707-4, Revision 1, Gas Metal Arc Welding (GMAW) of Carbon Steel.
- WP-707-5, Revision 2, GMAW of Stainless Steel Ductwork and Accessories.

- WP-707-6, Revision 0, SMAW Plug Welding of Galvanized to Carbon Steel.
- WP-707-7, Revision 1, SMAW Plug Welding of Carbon Support to Stainless Steel Sheet.
- WP-707-8, Revision 0, GTAW of Stainless Steel Tubing.
- DCB-1, Revision 7, RICO, Seismic Safety-Related Duct Construction Brochure.

(2) Quality Control Procedures (QCP)

- QCP-6-8/707, Procedure for the Installation of HVAC Instrument Tubing and Supports.
- QCP-10-4/707, Revision 3, Procedure for Control of Welding Filler Materials.
- QCP-3-1/707, Revision 3, Qualification, Certification, and Training of RICO QC Technicians.
- QCP-4-2/707, Revision 0, RICO As-Built Drawing Procedure.
- QCP-6-4/707, Revision 2, Installation and Inspection of Safety-Related Drilled in Concrete Expansion Anchors.
- QCP-10-3/707, Revision 4, Welder Qualification.
- QCP-11-5/707, Revision 4, Inspection of Seismic Supports.
- QCP-4-1/707, Revision 1, Instructions for Preparation and Review of Drawings and Fabrication Tickets.
- QCP-6-1/707, Revision 1, Instructions for Shop Fabrication of Ductwork.
- QCP-7-1/707, Revision 0, Procedure for Document Control.
- QCP-11-6/707, Revision 2, Procedure for HVAC System Walkdown Inspection.
- QCP-16-1/707, Revision 4, Procedure for Nonconformance Control.
- QCP-18-1/707, Revision 3, Instructions for Maintenance and Turnover of QA Records.

c. Certifications and Qualifications

Certification and training of RICO QC technicians was to the requirements of procedure No. QCP-3-1/707 and the AWS Welding Code. The inspector reviewed certification and qualification records of the past and present RICO QC technicians (inspectors) and welders listed below:

(1) Quality Control Technicians

<u>Name</u>	<u>Level</u>
J. J. Kovacs	II
T. A. Dakin	II
J. F. Yemma	II
R. D. Adams	II
R. A. Klarkowski	II

(2) Welders

<u>Name/Stamp</u>	<u>Process</u>
H. Wunsch, P2	SMAW/GMAW
D. Pavisich, P3	SMAW/GMAW
G. Hlifka, P10	SMAW/GMAW
E. Bennett, P18	SMAW/GMAW
K. Gyure, P21	SMAW/GMAW
D. Carrigan, P39	SMAW/GMAW
R. Anderson, P75	SMAW
R. Tichener, P58	SMAW/GMAW
D. Palajac, P37	SMAW
T. Schmel, P22	SMAW
J. McCollim, P15	SMAW

d. HVAC System Walkdown

Using the HVAC as-built drawings and the seismic support (hanger) fabrication sketches listed below the inspector performed a walkdown of the installed safety-related systems, examining supports for conformance to RICO fabrication sketches, design drawings for location, and ductwork for conformance to RICO duct brochure:

(1) Design Drawing D-936-164-B

- ° Support No. Q-DS-CC-3009
- Support Design No. 12
- System M-23, MCC Switchgear and Miscellaneous Electrical Equipment Area

- ° Support No. Q-DS-CC-3001
Support Design No. 53
System M-23
- ° Support No. Q-DS-CC-3002
Support Design No. 11
System M-23
- ° Support No. Q-DS-CC-3061
Support Design No. 12
System M-23

(2) Design Drawing No. D-936-765-H

- ° Support No. Q-DS-CC-3137
Support Design No. 52
System M-49, Smoke Venting
- ° Support No. Q-DS-CC-3106
Support Design No. 1
System M-23
- ° Support No. Q-DS-CC-3080
Support Design No. 1
System M-23

(3) Design Drawing No. D-936-739-E

- ° Support No. Q-DS-CC-4049
Support Design No. 50
System M-49
- ° Support No. Q-DS-CC-4053
Support Design No. 50
System M-49
- ° Support No. Q-DS-IB-4109
Support Design No. 15
System M-49

(4) Design Drawing No. D-936-738-G

- ° Support No. Q-DS-IB-4011
Support Design No. 53A
System M-49
- ° Support No. Q-DS-IB-4016
Support Design No. 50
System M-49
- ° Support No. Q-DS-IB-4012
Support Design No. 15
System M-49

(5) Design Drawing No. D-936-734-E

- ° Support No. Q-DS-IB-2045
Support Design No. 53
System M-15, Annulus Exhaust Gas Treatment
- ° Support No. Q-DS-IB-2023
Support Design No. 10
System M-40, Fuel Handling Area Ventilation

(6) Design Drawing No. D-936-730-C

- ° Support No. Q-DS-IB-1011
Support Design No. 10
System M-15
- ° Support No. Q-DS-IB-1003
Support Design No. 1
System M-15
- ° Support No. Q-DS-IB-1002
Support Design No. 27
System M-15
- ° Support No. Q-DS-IB-1001
Support Design No. 7
System M-15

(7) Design Drawing No. D-936-733-D

- ° Support No. Q-DS-IB-1076
Support Design No. 9
System M-40

(8) Design Drawing No. D-936-767-B

- ° Support No. Q-DS-CC-4166
Support Design No. 51
System M-21, Controlled Access and
Miscellaneous Equipment Area
- ° Support No. Q-DS-CC-4206
Support Design No. 54
System M-21
- ° Support No. Q-DS-CC-4216
Support Design No. 54
System M-21
- ° Support No. Q-DS-CC-4226
Support Design No. 54
System M-21

- Support No. Q-DS-CC-4234
Support Design No. 54
System M-21
- (9) Design Drawing No. D-936-752-B
 - Support No. Q-IM-49-C001B
Support Design (for fans)
System M-49
 - Support No. Q-IM-49-C001A
Support Design (fans)
System M-49
- (10) Design Drawing No. D-936-747-C
 - Support No. Q-DS-IB-7059
Support Design No. 9
System M-49
 - Support No. Q-DS-IB-7060
Support Design No. 8
System M-49
- (11) Design Drawing No. D-936-725-G
 - Support No. Q-DS-AB-3166
Support Design No. 18
System M-47, Steam Tunnel Cooling
 - Support No. Q-IM-47-C001A
Support Design (fan)
System M-47
 - Support No. Q-DS-AB-3165
Support Design No. 2
System M-47
- (12) Design Drawing No. D-936-771-J
 - Support No. Q-DS-CC-6191
Support Design No. 53
System M-25, Control Room
- (13) Design Drawing No. D-936-770-D
 - Support No. Q-DS-CC-6070
Support Design No. 10
System M-25
 - Support No. Q-DS-CC-6108
Support Design No. 9
System M-25

- ° Support No. Q-DS-CC-6059
Support Design No. 9
System M-24, Battery Room Exhaust
- ° Support No. Q-DS-CC-6055
Support Design No. 18
System M-24
- ° Support No. Q-DS-CC-6092
Support Design No. 7
System M-24

e. HVAC Documentation

The inspector reviewed HVAC installation and testing records included in the system turnover packages listed below:

- ° Turnover Package No. 474
System M-15, Annulus Exhaust Gas Treatment
- ° Turnover Package No. 389
System M-25, Control Room
- ° Turnover Package No. 341
System M-26, Control Room
Emergency Recirculation
- ° Turnover Package No. 405
System M-40, Fuel Building Ventilation
- ° Turnover Package No. 360, 1 and 2
System M-23/M-24, Motor Control Center
Switchgear and Miscellaneous Equipment
Area Plus Battery Room Exhaust

f. Conclusions

Based on this inspection, including review of specifications, drawings, procedures, personnel certifications and qualifications, installation documentation and system walkdown, the inspector determined that the installed HVAC systems met the specification and referenced codes, standards, and NRC requirements.

No violations or deviations were identified.

3. Exit Interview

The inspector met with the licensee site representatives (denoted in Persons Contacted paragraph) at the conclusion of the inspection on July 26, 1985. The inspector summarized the scope and findings of the inspection noted in this report, and discussed the likely informational content of the report with regard to documents or processes reviewed during the inspection. The licensee did not identify any such documents/processes as proprietary.