

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-440/82-03(DETP); 50-441/82-03(DETP)

Docket Nos. 50-440; 50-441

License Nos. CPPR-148; CPPR-149

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

Facility Name: Perry Nuclear Power Plant, Units 1 and 2

Inspection At: Perry Site, Perry, OH

Inspection Conducted: February 23-26, and March 8-10, 1982

Inspectors: *K. D. Ward*  
K. D. Ward

3/31/82

E. H. Nightingale

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

3/31/82

Inspection Summary

Inspection on February 23-26, and March 8-10, 1982 (Report No. 50-440/82-03 (DETP); 50-441/82-03(DETP))

Areas Inspected: Shop weld radiographs; preservice inspection (PSI) procedures, work activities, nondestructive examination (NDE) personnel certifications and data; previous inspection findings and IE Bulletin 80-08 activities. The inspection involved a total of 49 inspector-hours onsite by two NRC inspectors.

Results: Of the areas inspected one apparent violation was identified. (Failure to comply with ASME Code requirements in radiographic examinations - Section II, paragraphs 3.a. and 3.b.)

## DETAILS

### Persons Contacted

#### Cleveland Electric Illuminating Company (CEI)

\*E. Riley, General Superintendent  
\*M. Edelman, Manager, Nuclear Engineering  
\*R. Farrell, Manager, QA  
\*C. Hubboch, QE  
\*H. Walls, Jr., Senior NDE Administrator  
\*A. Bradshaw, Level III  
\*J. Bowser, NDE  
\*K. Combs, Senior Engineering Aide  
C. Wirtz, Senior Engineering Aide

#### Pullman Power Products (PPP)

J. McPherson, NDE Supervisor (Level II)  
J. Steele, Level III

#### Newport News Industrial Corporation (NNICo)

T. Payne, Level III

#### Hartford Steam Boiler Engineering and Insurance Co. (HSB)

L. Laps, Authorized Nuclear Inservice Inspector (ANII)

The inspector also contacted and interviewed other licensee and contractor employees.

\*Denotes those present at the final exit interview March 10, 1982.

### Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (440/80-04-01; 441/80-05-01): Result of Dikkers valve radiography. Nuclear Engineering Service Company (NES), contracted by General Electric Company (GE) performed a 100 percent review of Dikkers radiographs on the Perry safety relief valves (SRV) and spares manufactured by Dikkers Valve Company. GE stated that the quality of the radiographs is adequate for film interpretation and the radiographic review revealed that two of the Perry valves contained discontinuities; "Porosity" and "Hot Tears" in the caps. These units are to be returned to G.E. for replacement. Some density variations not within Code requirements were found. Therefore, reradiography was performed on 20 of Grand Gulf Unit 1 SRV valves in areas (3-4-5) and (10-X-Y). This reradiography was performed for information only to provide an additional level of confidence and did not reveal any unacceptable discontinuities. SRV's for Perry are of identical manufacture, including no change in patterns or casting

process, as stated by GE's Manager of QC Engineering, Valves and Piping Components, as those for Grand Gulf Unit 1 and exhibited similar radiographic anomalies. As part of the original G.E. procurement documents, all valves were subjected to a 1.5X design pressure hydrostatic test and performance verification test under full steam and flow conditions. Each valve was determined operable and structural integrity was sound. The raised adjusting bolt pads on approximately 80 valve bodies, similar to those used at Perry, were reradiographed by the Dikkers Valve Company. This reradiography did not reveal any unacceptable discontinuities. Stress was calculated for Perry safety relief valves. There was no indication of any region with excessive stress or inadequate thickness. In general, the stresses are well below the prescribed code limits. Where radiographs display density variations out of specification limits, the location on the casting is that of substantial extra thickness or of rapidly changing cross section. Perry NDE personnel reviewed 100% of five Dikkers radiographic packages each for Units 1 and 2. The 15 packages totaled 1290 film equalling approximately 30% of the 57 packages for Perry. No rejectable indications were found. In March 1981, the CEI Senior NDE Administrator performed a review of a new radiographic technique established by G.E. and Dikkers. He reviewed the new technique radiographs and reviewed the 20 reradiographs of Grand Gulf Unit 1 Valves performed by G.E. and Wiley Labs. The radiographs using the new technique indicated more radiographic coverage in those areas of question than on the old radiographs. Some of Perry Spares were reradiographed at Dikkers using the new technique.

A review of those film revealed extensive improvement over the old technique. All radiographs reviewed were acceptable by Perry. In June 1981, two audit personnel visited G.E. San Jose and performed a document review on ten of the Dikkers Document Packages for Perry. There were items of concern relating to the documents, that G.E. has assured corrections of before document package delivery. Overall, the document packages were acceptable. Perry acknowledges that the Dikkers valves do not meet all code requirements relating to radiography, particularly in the areas where the casting is of substantial extra thickness or rapidly changing cross sections. Investigations made and actions taken by the licensee establish that two Perry valves have rejectable material discontinuities and that there may be no rejectable material discontinuities existing in the other Perry Dikker's safety relief valves.

(Open) Noncompliance Item (440/81-09-01; 441/81-09-01): Penetrameters not shimmed. To date, the Pullman shop radiographic review is approximately 55% complete and may be completed in June 1982.

#### Licensee Action on IE Bulletin

(Open) IE Bulletin 80-08. The inspector reviewed the interim response and NDE records. RIII will review the licensee's final response to IE Bulletin 80-08 on NDE of penetrations.

#### Functional or Program Areas Inspected

The functional and program areas inspected are identified in Sections I and II.

## Section I

Prepared by K. D. Ward

Reviewed by D. H. Danielson, Chief  
Materials and Processes Section

### Preservice Inspection

#### 1. General

Reference: NRC Report No. 50-440/81-04; 50-441/81-04, (PSI)  
NRC Report No. 50-440/81-09; 50-441/81-09, (PSI)

#### 2. Procedure and Program Review

The inspector reviewed the following procedures:

- . NES, Ultrasonic Examination Procedure General Requirements, 80A0182, Revision 1
- . NES, Liquid Penetrant Examination Procedure, 80A0183, Revision 1
- . NES, Visual Examination Procedure, 80A0184, Revision 0
- . NES, Magnetic Particle Examination Procedure, 80A0185, Revision 0
- . NES, Ultrasonic Examination Procedure for Ferritic Piping Welds, 80A0186, Revision 1
- . NES, Ultrasonic Examination Procedure for Austenitic Piping Welds, 80A0187, Revision 1

No items of noncompliance or deviations were identified.

#### 3. Material and Equipment Certification

The inspector reviewed the certification documents relative to the following items:

- . Ultrasonic instruments, calibration blocks, transducers and couplant
- . Liquid penetrant, magnaflux materials, penetrant, cleaner and developer

No items of noncompliance or deviations were identified.

4. NDE Personnel Certifications

The inspector reviewed the following NES NDE personnel certifications in accordance with SNT-TC-1A, 1975 Edition.

<u>Name</u>	<u>UT</u>	<u>PT</u>
R. Bott	II	II
N. Callahan	II	II
P. Anderson	I	II
J. Montanari	I	II
M. Shallis	II	II

No items of noncompliance or deviations were identified.

5. Observation of Work and Review of Data Reports and Audits

- . The inspector observed an ultrasonic examination (UT) of weld #0152, RHR #1E12 and had discussions with personnel during the examination. These observations included calibration, performance of the UT and the documentation.
- . The inspector reviewed data reports and determined that they demonstrated that the QA/QC requirements were met.
- . The inspector reviewed NES audit of NES PSI site activities dated December 22, 1981 and CEI audit of NES PSI activities dated October 9, 1982.

No items of noncompliance or deviations were identified.

## Section II

Prepared by E. H. Nightingale

Reviewed by D. H. Danielson, Chief  
Materials and Processes Section

### Radiographic Activities

#### 1. Procedure and Program Review

The inspector reviewed the following procedures:

- . Twenty PPP Procedure Qualification Records
- . General Welding Standard (GWS-III) dated August 6, 1981
- . Welding Procedure Specifications:
  - IT8A-III-1-BR-2
  - ITA-III-1-KI-12, dated April 1, 1981
  - IT1-III-1-KI-12, dated February 5, 1979
- . PQR-RT-2 Co<sup>60</sup> - dated October 28, 1981
- . Radiographic Testing Inspection of Weldments - IX-RT-5, dated November 13, 1981
- . Penetrant Testing - IX-PT-1-W75 dated October 2, 1981
- . Magnetic Particle Testing - IX-MT-W75 dated April 1, 1980
- . Ultrasonic Testing - IX-UT-1, dated August 14, 1980
- . Visual Testing - X-11, dated February 16, 1981

No items of noncompliance or deviations were identified.

#### 2. NDE Personnel Certifications

The inspectors reviewed the following NDE certifications in accordance with ASNT-TC-1A, 1975 Edition.

##### PPP

<u>Name</u>	<u>Level</u>	<u>Discipline</u>
James Miller	II	RT, MT, PT
James McVey	II	RT, MT, PT
Randy McDonald	I	PT
John Bearer	I	PT

<u>Name</u>	<u>Level</u>	<u>Discipline</u>
Dwayne Denlinger	I	PT
John Horvarth	II	PT
John Wargelin	II	RT, PT
James McPherson	II	RT, MT, PT
John Steele	III	RT, MT, PT, UT (Ass't QA MGR)
John Miller	III	RT, PT, MT, UT (QA MGR)

#### NNICo

<u>Name</u>	<u>Level</u>	<u>Discipline</u>
J. E. Rodriguez	II	RT
S. N. Hand	II	RT

No items of noncompliance or deviations were identified.

### 3. Interpretation of Shop Radiographs

- a. In the Unit 1 Recirculation Systems Loops A and B, the inspector reviewed radiographs and reports of the following shop welds in accordance with ASME Section III, 1974 Edition, Summer 1975 Addenda.

<u>Assembly #</u>	<u>Item #</u>	<u>Unit #</u>	<u>Weld #</u>
OM-61-18X		0076	D
OM-61-17X	6A1	0014	D
OM-61-21X	8A1	0019	B
OM-61-19X	7A1	0018	A
OM-61-16X	5B1	0082	(Various)

The inspector found the following discrepancies:

- . Assembly #OM-61-17X, weld #D, area E-F-G on the radiograph. This area will be re-radiographed utilizing very fine grain film to obtain better resolution, sensitivity and definition in order to resolve a possible linear indication. This is an unresolved item pending completion of reexamination. (440/82-03-01)
- . Assembly #OM-61-19X, Weld #A, area H-I-J-K on the radiograph, has a possible linear indication. This indication will be dispositioned after visual examination of the weld. This is an unresolved item. (440/82-03-02)
- . Assembly #OM-61-21X, Weld #B, area P-S-B on the radiograph has the lead location markers located in the area of interest which could mask a defect. ASME Section V, 1974 Edition, Summer 1975

Addenda, paragraph T-235.2 require that the location markers locate the area of interest accurately. This is a violation identified identified in the Appendix. (440/82-03-03)

- b. The inspector reviewed radiographs and reports that were accepted by CEI and NNICo referenced in NCR's #17-152, #17-777, #17-195, #17-254 and #17-268 which had been closed.

The inspector found the following discrepancies:

- . Weld #WN 1-1, area 20-21. The radiographs reveal approximately 13 areas of lack of fusion and excessive slag. ASME Section III, 1974 Edition, Summer 1975 Addenda, paragraph NE-5321 states that incomplete fusion and excessive elongated indications (slag) are unacceptable.
- . Weld #WM 1-1, area 31-30. Repair four (R-4) radiograph was not correctly identified in area repaired. ASME Section V, 1974 Edition, Summer 1975 Addenda, paragraph T-235.2 requires that the location markers locate the area of interest accurately.
- . Weld #WN 1-1, area 31-30, repair 6 (R-6). The radiograph reveals a crack in the weld. ASME Section III, 1974 Edition, Summer 1975 Addenda, paragraph NE-5321 states that cracks are unacceptable.

The above three items are a violation identified in the Appendix A together with the same violation in paragraph 3.a. (440/82-03-03)

Except as noted above, no items of noncompliance or deviations were identified.

#### Unresolved Matters

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 items disclosed during this inspection are discussed under Section II, paragraph 3.a. and 3.b.

#### Exit Interview

The inspector met with site representatives (denoted in Persons Contacted paragraph) at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection noted in this report.