The National Board of Boiler and Pressure Vessel Inspectors

S. F. HARRISON, Executive Director

1055 CRUPPER AVENUE
COLUMBUS, OHIO 43229 U.S.A.
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1919 63rd 1982
ANNIVERSARY

May 12, 1982

Mr. Donald M. Milan, Division Chief
Department of Industrial Relations
Division of Boiler Inspection
2323 West Fifth Avenue
P. O. Box 825
Columbus, Ohio 43216

SUBJECT: National Board Audit as Requested by the State of Ohio, Division of Boiler Inspection, of the ASME Code Related Construction of the William H. Zimmer Nuclear Power Plant, Moscow, Ohio

INTERIM REPORT

Dear Mr. Milan:

The State of Ohio, Division of Boiler Inspection, in a letter dated December 9, 1981 from Mr. Donald M. Milan, Division Chief, to Mr. Earl A. Borgmann, Senior Vice President, Cincinnati Gas and Electric Company, requested the audit be initiated and to continue in effect as required (by the State of Ohio) until said plant became operational or commercial.

As a result of this request, a meeting was held in the National Board of Boiler and Pressure Vessel Inspectors' offices in Columbus, Ohio, on January 6, 1982 with representatives of the State of Ohio's Division of Boiler Inspection, Cincinnati Gas and Electric Company, Inc., The National Board of Boiler and Pressure Vessel Inspectors, and Henry J. Kaiser Company (Cincinnati Gas and Electric Company's contractor), where arrangements were made to begin the audit March 1, 1982.

On March 1, 1982, the initial National Board/State of Ohio Audit Team made up of Donald J. McDonald, Richard Jagger, Charles W. Allison, Michael Sullivan and Donald M. Milan met with the following personnel at the William H. Zimmer Nuclear Power Plant site:

B. R. Sylvia	Vice President Nuclear Operations Cincinnati Gas and Electric Company, Inc.
H. R. Sager	Manager Quality Assurance Cincinnati Gas and Electric Company, Inc.
D. J. Schulte	Director Q.A. Engineering Cincinnati Gas and Electric Company, Inc.
Bob Arthurs	Coordinator of Q.C.P. Cincinnati Gas and Electric Company, Inc.

C. H. Stanfield	Construction Manager Henry J. Kaiser Company
W. A. Hedzik	Site Q.A. Manager Henry J. Kaiser Company
J. W. Watkins	Staff Consultant Henry J. Kaiser Company
G. L. Fones	Q.A. Records Manager Henry J. Kaiser Company
M. L. Goedecke	Project Welding Manager Henry J. Kaiser Company
N. R. Vitale	Q.E. Manager Henry J. Kaiser Company
D. L. Howard	Director Q.A. Programs Henry J. Kaiser Company
P. K. Botts	Q.A. Manager Catalytic, Inc.
R. J. Fisher	Resident Project Manager Catalytic, Inc.
F. Christianson	Resident Inspector United States Nuclear Regulatory Commission
D. R. Hunter	Chief of Reactor Projects, Region III United States Nuclear Regulatory Commission
Lowell R. Burton	A.N.I. Hartford Steam Boiler Inspection and Insurance Co.

Mr. McDonald stated that the National Board Team Audit was at the request of the State of Ohio, Division of Boiler Inspection, with the concurrence of the Cincinnati Gas and Electric Company. He charged the National Board Team with conducting a comprehensive and complete independent audit into the ASME Code related construction and the Authorized Nuclear Inspector and Authorized Inspection Agency activities that are subject to the requirements of the State of Ohio (Ohio Revised Code Chapter 4104 Paragraph 4104.01). He also recognized the verification and confirmation programs that are in effect due to reports by others, and said that the National Board's activities would be independent of these; however, there probably would be some overlap. Regardless, the National Board Team is to report all "findings", assure corrective action relative to their findings, and to assure confirmation of verification and corrective action in all Code related activity for compliance with the ASME Code and State of Ohio requirements.

The State of Ohio Division of Boiler Inspection Chief, Cincinnati Gas and Electric Company, and U.S. Nuclear Regulatory Commission representatives are to be advised of the National Board Team's activities, and are to be assisted in every possible way to achieve total compliance with the Jurisdictional enforcement and Regulatory requirements.

1.0 Introduction. The results of the audit to date are as follows.

1.1 Cincinnati Gas and Electric Company, Inc. (CG&E), Dayton Power and Light, and Columbus and Southern Ohio Electric Company are the owners of the William H. Zimmer Nuclear Power Plant. It is located in Moscow, Ohio.

Cincinnati Gas and Electric Company is in possession of ASME Owner's Certificate of Authorization N-610, issued September 2, 1981 and expiring September 30, 1984 for the William H. Zimmer Nuclear Power Plant, Moscow, Ohio, Unit #1. The original issue date was March 6, 1973.

The docket date number is 50-358 (April 1970) for this 810 MWE unit. The construction permit number CPPR-88 was issued in October of 1972.

1.2 The Architect/Engineering Contractor (AE) and Subcontractors at this site are:

1.2.1) AE - Sargent & Lundy Engineers, Chicago, Illinois.

1.2.2) Henry J. Kaiser Company (formerly Kaiser Engineers, Inc.), Oakland, California, is the Prime Contractor. Henry J. Kaiser Company is the holder of NA Certificate of Authorization N-1436 and NPT Certificate of Authorization N-1437, both due to expire June 25, 1982. (Henry J. Kaiser Company has recently had a renewal survey (March 22-24, 1982)for the above Certificates). These Certificates are issued for the William H. Zimmer Nuclear Power Station, Unit #1, Moscow, Ohio only.

The A.I.A. is Hartford Steam Boiler Inspection and Insurance Company.

1.2.3) General Electric Company (G.E.), San Jose, California, is the designer of the NSSS systems. The reactor vessel is a G.E. boiling water reactor (BWR) fabricated by Chicago Bridge and Iron Nuclear, Memphis, Tennessee.

ATTACHMENT A

1.2.4) Reactor Controls Incorporated, San Jose, California -- NPT #1299-2 and NA #1300-2 field fabrication and installation of Class 1, 2, & 3 appurtenances and piping

subassemblies component supports and installation of Class 1 central rod drive housings and Class CS core support structures at the William H. Zimmer Nuclear Power Station, Moscow, Ohio only. (Certificates expired June 7, 1979). Reactor Controls left the site 1979.

The A.I.A. was Hartford Steam Boiler Inspection and Insurance Company.

1.2.5) Chicago Bridge and Iron Company, Oak Brook, Illinois, fabricated and erected the containment vessel. The containment is a General Electric Mark II design which was not inspected and stamped in accordance with ASME Code requirements nor accepted as a state special.

1.2.6) Catalytic, Inc., Philadelphia, Pennsylvania -- N-1301 (NPT) and N-1302 (NA), expiration date, February, 1985 -- installation of Class 1, 2, & 3 components, parts, appurtenances, piping subassemblies and component supports and CS core support structures at various field sites (subject to site audits). Catalytic, Inc., to the Team's knowledge, has performed no Code work and to date, has not been surveyed by ASME at the site.

The A.I.A. is Hartford Steam Boiler Inspection and Insurance Company.

1.3 Based on CG&E's letter dated February 22, 1978 (KEQ195), the following ASME Code editions and addenda were used as a basis for the team audit.

ATTACHMENT B

1.3.1) Reactor Pressure Vessel Design and Construction

Section III, 1968 Edition, with Addenda through Summer 1970 (except Paragraph N-355).

1.3.2) Phase I Piping Fabrication

Section III, 1971 Edition, with Addenda through Winter 1971.

1.3.3) Phase II Piping Fabrication

Section III, 1971 Edition, with Addenda through Winter 1972.

1.3.4) Phase II Piping and Equipment Erection

Section III, 1971 Edition, with Addenda through Summer 1973.

1.3.5) Welding Procedure & Welder Performance Qualification

Sections III and IX, 1971 Edition, with Addenda through Winter 1973.

1.3.6) Nondestructive Examination

Section III, Appendix IX, 1971 Edition, with Addenda through Summer 1973.

1.3.7) Instrument Penetration Fabrication

Section III, 1971 Edition, with Addenda through Winter 1972.

1.4 Charles W. Allison and Michael Sullivan, National Board representatives, and Donald M. Milan, State of Ohio, were the National Board Team Members the dates March 1 through March 5, 1982, with Michael Sullivan present throughout the audit to date. Other National Board Team Members present on various days throughout the audit were: Robert Holt, Michael Houle, Richard Jagger and John McLoughlin.

2.0 CINCINNATI GAS AND ELECTRIC COMPANY

NA 3220
NA 3250
NA 1210

2.1 The National Board Audit Team questioned the adequancy of a Generic Design Specification which fulfills the requirements for all piping systems. The CG&E, Sargent & Lundy, has submitted a certified Design Specification listed as Appendix A of Specification H-2255. Appendix A is dated November 11, 1976, Revision 0. The date of Specification H-2255 is August 23, 1973.

Appendix A of Specification H-2255 lists several other documents which must be used in conjunction with, and form a part of, the Design Specification.

The Registered Professional Engineer (RPE) who is certifying the Design Specification does not in all instances certify the other documents which are considered part of the Design Specifications. Nor does he certify revisions to said documents.

Further, it is difficult to determine whether or not the certifying RPE recertifies the Design Specification after a revision to the other documents which form part of the Design Specifications.

2.1.1 The National Board Audit Team is of the opinion that any revisions to the Base Design Specification or to any documents which are listed as a part of the Design Specification must be reviewed and certified by the RPE of record on the Design Specification. Further, all documents which are to be used as part of the Design Specification must be listed by revision in the Design Specification.

2.1.2 CG&E has received an interpretation from their AE. The interpretation however does not address the control of revisions to the Design Specification. Furthermore, the interpretation regarding this Code requirement did not come from ASME as required.

ATTACHMENT C

2.2 Cincinnati Gas and Electric Company procured piping subassemblies from M. W. Kellog Company, ASME N-1251 NPT Certificate of Authorization number (now Pullman Power Products, Williamsport, Pennsylvania). As part of these purchase orders, M. W. Kellog Company supplied loose material such as pipe, fittings, flanges, etc. The material was received by Kaiser and was accepted for release to construction based on a notification of release from CONAM, CG&E's source Inspection Agency.

ATTACHMENT D

NA 4441
NA 4442

2.2.1 National Board considers this procedure for the release of material by Kaiser through CG&E and/or CONAM, who do not hold N Certificates of Authorization to be in apparent non-conformance to Paragraph NA 4441, NA 4442.

2.3 CG&E, in some cases, refused to allow Henry J. Kaiser Company to perform qualification surveys of material manufacturers. CG&E insisted that only they (CG&E) could approve whom Kaiser was to qualify. In some instances Kaiser was required to place material manufacturers on the Approved Vendors List based on CG&E's "personal experience" or by virtue of appearing on the Case Register.

ATTACHMENT E

2.3.1 The National Board Audit Team considers this procedure to be an apparent non-conformance to ASME Code requirements, Paragraph NA 3451. Sub-article NA-3110 specifically states that responsibilities set forth in Section III relate only to Code compliance and not to contractual relations or legal liabilities. Cincinnati Gas and Electric Company must cease preventing Kaiser from the performance of those Code activities which are required to be performed by Kaiser's Certificate of Authorization.

ATTACHMENT F

NA 3440
NA 3451
NA 3460

2.4 CG&E has a procedure, ADMIN 3, Rev. 0, 2/21/80, "Performing Construction on Systems/Areas under EPD Control." (Electrical Production Department). This procedure has been implemented to allow CG&E to take over piping systems which are still within the jurisdiction of Kaiser and are not completed or covered on an N-5 data report from.

NA 5241

CG&E then directs the performance work on these systems or portions of systems, which in some instances may include the removal of or

addition of welds. In some cases this work has been done with the use of Kaiser craft, but neither Kaiser Q.A. or the A.N.I. has been involved in the activities or review of proposed activities. Further, there is the possibility that there have been no records kept of weld material or piping material which may have been used to make these system modifications.

ATTACHMENT G

2.4.1 It is the opinion of the National Board Audit Team that this is an unacceptable practice. This also is in conflict with NA 3440, NA 3451, NA 3460, and the specific requirements of Interpretation III-1-77-159, dated June 30, 1979. The National Board Audit Team is of the opinion that until such time that an N-5 has been completed, piping systems that are to be Code symbol stamped must remain in the custody of the NA Certificate holder.

Further, any modifications or changes to these systems shall be made under the requirements of the Q.A. program of the NA Certificate holder who is responsible for executing the N-5 data report.

All turnover packages and associated documents involving modified Code piping systems shall be reviewed to assure that no Code work has been performed by other than the holder of an appropriate Certificate of Authorization and that this modification was properly reconciled with the design specification and documented final record package.

Table NA 3120-1
NA 8124
NA 8430

2.5 Cincinnati Gas and Electric Company at present does not have an inspection contract with an Authorized Inspection Agency to provide inspection services for the Owner's activities. As of this date there has been no Authorized Nuclear Inspector auditing or monitoring the CG&E activities in the compilation of Code required documents for completion and certification of the N-3 data report form(s).

2.5.1 It is the opinion of the National Board Audit Team that by the rules of the 1971 ASME Section III, Summer 1973 Addenda of the Code, CG&E or their agent is required to have a valid inspection contract. The National Board Audit Team suggests that CG&E immediately contract with an Authorized Inspection Agency for inspection services.

2.6 The National Board Audit Team has been advised by CG&E supervisory personnel that there is a possibility that modification or repair by Catalytic, Inc. may be performed on piping systems for which Henry J. Kaiser Company has not completed the N-5 data report and stamped the system. KC-16365-Q, dated March 15, 1982, is a proposed Code Data Report Code stamping agreement between Henry J. Kaiser Company and Catalytic, Inc.

ATTACHMENT H

2.6.1 It is the opinion of the National Board Audit Team that such construction shall be in accordance with Code requirements and be acceptable to CG&E, the A.I.A., and the State of Ohio, prior to beginning construction.

2.7 The containment vessel apparently is within the scope of the State of Ohio Boiler and Pressure Vessel law regarding construction, inspection, and stamping, and there is no evidence of compliance with these requirements.

2.7.1 It is the opinion of the National Board Audit Team that CG&E contact the Boiler Pressure Vessel Division of the State of Ohio for possible resolution.

2.8 A pressure vessel Manufacturers Serial No. 276 manufactured by Lamco Industries, El Cajon, California, and installed in a "Standby Liquid Control System" Tank No. ICAIA001, Line No. ISCOIA4, I50, Dwg. No. PSK SC-1 Project Specification H-2256 was modified by replacing a 3 inch nozzle with a 4 inch nozzle.

KC-15604-Q, dated July 1, 1981. This letter was written to Mr. Donald M. Milan, Chief, Division of Boiler Inspection, State of Ohio, requesting permission for the Henry J. Kaiser Company, ASME Certificate Holder N-1437 and N-1436 to make the above modification as outlined in FDDR KN-1-1012. Permission was granted by the State of Ohio (August 13, 1981) for this modification. However, the National Board Audit Team noted the modification was made October 6-12, 1981 in accordance with FDDR KN-1-1012 Revision 3 that did not include the reinforcement pad as proposed in the original FDDR submitted to Mr. Donald M. Milan, Chief Inspector, State of Ohio. Furthermore, there is no evidence to date that the Authorized Nuclear Inspector participated in the inspection of this modification, witnessing the final hydrostatic test and signing the Data Report accepting the modification as complying with Code requirements.

ATTACHMENT I

2.8.1 The National Board Audit Team recommends that CG&E and Henry J. Kaiser Company obtain acceptance from Mr. Donald M. Milan, State of Ohio, for this modification as in the last revision. FDDR No. KN-1-1012, Revision 3 require the certificate holder's (H.J.K.) Authorized Nuclear Inspector to inspect the modification, witness the final hydrostatic test and, if acceptable, certify the Data Report.

3.0 HENRY J. KAISER COMPANY

NB 4622
Table NB
4622.1-1

3.1 A Main Steam Feedwater system PSK FW1 Line No. 1, FWOZEA18 MK43-37A to MK1B21F032A Field Weld No. K-50, WPS 3.1.47 18" Nominal 1.351" Wall, Weld Data Sheet was reviewed. The WPS specified 60°F minimum

preheat and was qualified without PWHT. The Weld Data Sheet verified these conditions.

NB-4622.1-1 requires a PWHT or a minimum preheat of 200°F for materia. over 3/4" up to 1½" thick. Neither Code requirement was met (200°F minimum preheat or PWHT). The problem is generic throughout the Feedwater system and may exist in the following systems: Residual Heat, HP Core Spray, Mainsteam and Reactor Feedwater.

ATTACHMENT J

3.1.1 It is the opinion of the National Board Audit Team that the only acceptable resolution shall be to identify all welds documented in the H. J. Kaiser Company KE-1 form (Welding Data Records) as having been welded with improper minimum preheat or using one of the improperly qualified WPS's, and to undertake actions to have them post-weld heat treated in accordance with the Code. This action of course is to be in conjunction with the required requalifications of those WPS's.

3.2 Purchase Order 7070 22506 (and further documented on non-conformance report no. E3633 R1) was released to:

LaBarge, Inc.
Tubular Division
20 South Fourth Street
St. Louis, Missouri 63102

to supply 20' 2½" Sch. 40 SA 106 Gr B ASME Section III Cl 1 pipe and 220' 4" Sch. 40 SA 106 Gr B ASME Section III Cl 1 pipe. Kaiser required: "All material contained in this order shall be manufactured by J&L Steel Corporation, Aliquippa and Pittsburgh, Pennsylvania, a purchaser-approved supplier."

NA 3451 3.2.1 There is no record of a J&L Steel Corporation, Pittsburgh, Pennsylvania, Vendor Survey, nor does J&L Steel Corporation, Pittsburgh, appear on any Kaiser AVL.

NB 2610 3.2.2 The J&L Steel Corporation CMTR for Mill Order #263 556674 does not identify which plant, Aliquippa or Pittsburgh, manufactured this material.

3.2.3 20' of 2½" SA 106 Gr B pipe was manufactured by Youngstown Sheet & Tube Company and not J&L Steel as required by this purchase order.

NA 3451 3.2.4 Material was manufactured prior to any Kaiser Vendor surveys of either Youngstown Sheet & Tube Company or J&L Steel Corporation.

NB 2130 3.2.5 CMTR's are not certified as meeting the special requirements of NB 2000.

NA 3451

3.2.6 Ultrasonic examination required by NB2550 was performed by Industrial Testing Laboratories, Inc. for LaBarge, Inc. and would appear to be invalid in that this NDE company does not appear on any Kaiser AVL as a supplier of Non-destructive Examination.

3.2.7 The material reported on the CMTR for Heat #31582 appears to have been shipped from Youngstown to LaBarge on or about February 27, 1976 on Truck #PIE 28114. Approximately fifteen (15) months prior to the release of this Kaiser purchase order, this material does not carry any type of certification to Section III requirements, and the pipe was manufactured about three (3) months prior to Youngstown's being placed on Kaiser's AVL. In addition, we do not have copies of LaBarge purchase documents used to acquire this pipe.

ATTACHMENT K

3.3 It is the opinion of the National Board Audit Team that disposition "Accept As Is" documented NR No. E3633 R1 appears invalid based on the above-listed apparent non-conformance with Section III requirements. The National Board Audit Team shall be provided with documentation to assure this material was manufactured and purchased in accordance with Code Quality Assurance requirements, alternatively or removed. Acceptable documentation shall be in the form of the following:

3.3.1 LaBarge purchase and receiving documents for material provided on this P.O.

3.3.2 Certification provided by Youngstown Sheet & Tube and J&L Steel that Section III requirements, except UT were met.

3.3.3 The National Board Audit Team further believes that a thorough evaluation of all Kaiser P.O.'s to LaBarge (as a supplier of Nuclear Quality Material) shall be made.

3.4 Kaiser P.O. 7070-17688 dated June 22, 1976 for Carbon Steel SA106 Gr B ASME Section III CL2 was purchased through LaBarge Tubular Division, St. Louis, Missouri. This material was manufactured by Gulf States Tube Corporation, Rosenberg, Texas, sometime prior to November 25, 1974 and February, 1975. Gulf States Tube Corp. is listed on Kaiser's AVL, approved date September 28, 1976. The National Board Audit Team noted the following:

NA 3451

3.4.1 The material reported on the CMTR for Heat #KA-2097 appears to have been shipped from Gulf States Tube Corp. on or about November 25, 1974, approximately one year and seven months prior to the release of this Kaiser P.O. and one year and ten months prior to this organization's being placed on the Kaiser AVL.

NA 3451

3.4.2 The material reported on the CMTR for Heat #HA-0001 and #HA-0005 appears to have been shipped from Gulf States Tube Corp. on or about February, 1975, approximately one year and four months prior to the release of this Kaiser P.O. and one year and seven months prior to this organization's being placed on the Kaiser AVL.

NB 2130

3.4.3 This material does not carry any type of certification to Section III requirements.

3.5 The National Board Audit Team shall be provided with documentation to assure that this material was manufactured and purchased in accordance with Code Quality Assurance requirements. Acceptable documentation shall be in the form of the following:

3.5.1 LaBarge purchase and receiving documents for the material provided on this P.O.

3.5.2 Certification provided by Gulf States Tube Corp. that Section III requirements were met.

3.6 One additional problem noted during this review was: Material identified by Heat #KA2097 was shipped to LaBarge Tubular Division, 121 East Koeln, St. Louis, Missouri. This supplier/warehouse facility does not appear on Kaiser's AVL.

ATTACHMENT L

3.7 The National Board Audit Team believes that similar problems exist in all Section III materials provided by LaBarge and possibly other suppliers. This shall be resolved by Kaiser.

4.0 GENERAL ELECTRIC COMPANY (NSSS)

NA 1140 (d)(e) Table 3120-1

4.1 The National Board Audit Team noted that the pumps and valves in the reactor water clean-up/demineralizer system were not "N" Symbol stamped and the connecting piping subassemblies were "NPT" Symbol stamped.

4.2 General Electric Company stated that they prepared the Design Specifications for the system. The fabrication and design of the system was subcontracted to Ecodyne. Ecodyne subcontracted the fabrication for the pumps and valves in the system. General Electric stated that the purchase order to Ecodyne (P.O. #205AA169) (dated June 25, 1971) established the Code effective date for the system and specified the 1968 Pump and Valve Code.

NA 8412

4.3 In addition to the above, there appears to be no evidence on site that the valves in question comply with any edition of Section III. NPV 1 Data Reports are not available for review by the Audit Team.

4.3.1 The National Board Audit Team is of the opinion that Ecodyne apparently purchased pumps and valves from other manufacturers after July 1, 1971. These pumps and valves should have been stamped with the "N" Symbol and built to the Code in effect on the contract date for the component. Unless documentation is made available that these components were purchased by Ecodyne before July 1, 1971, all valves and pumps not documented on NPV 1 Forms should be removed from the systems.

5.0 (M. W. KELLOG) PULLMAN POWER PRODUCTS

App. IX
Para. 3334.3
Para. 3334.4

5.1 The National Board Audit Team reviewed the conformation program 19-QA-01, Revision 2, now in process of being implemented by CG&E as a possible resolution to the problem of radiographs that were improperly shimmed by Pullman Power Products.

App. IX, Para. 3334.4 specifically requires that the penetrameters used be shimmed so that the total thickness being radiographed under the penetrameter is the same as the total weld thickness and backing strip is used and not removed.

5.2 The National Board Audit Team is of the opinion that this program 19-QA-01, Revision 2 will not satisfy the requirements of the Code, Appendix IX, Paragraphs IX-3334.3 and IX-3334.4. Further, all radiographs not meeting Code requirements are considered unacceptable.

SUMMARY

6.0 This interim report is being submitted as a progress report of the National Board Audit Team activities to date.

The National Board Audit Team recognizes the Verification and Confirmation Programs initiated in an attempt to correct deficiencies encountered to date. However, the audit team is continuing its audit efforts in other areas of concern. This includes, but is not limited to the entire Welding program, apparent inadequacies of the non-conformance activities, loss of material traceability, design and configuration control, and Authorized Inspection Agency involvement in Code construction. The results of these efforts will be described in future reports as agreed to at our initial meeting.

The National Board Audit Team is of the opinion that should CG&E wish to continue activities which require an N-type Certificate of Authorization, they shall obtain an "N" Certificate of Authorization, which would allow CG&E to assume overall responsibility for piping systems.

In compliance with the State of Ohio's request, in addition to the current audit activities at the Zimmer Nuclear Site, the National Board Audit Team will continue to provide surveillence of the various

Verification and Confirmation Programs to assure that proper corrective action is completed in accordance with the requirements of the State of Ohio.

Respectfully submitted,

Donald J. McDonald
Director of Inspections

National Board Audit Team

Charles W. Allison
Team Leader

John D. McLoughlin
Team Member

Robert P. Holt
Team Member

Michael Sullivan
Team Member

Michael J. Houle
Team Member

DJM/CWA/JDM/RPH/MS/MJH:cal

Attachments (12)

cc: E. A. Borgmann, Senior Vice President
Columbia Gas and Electric Company

J. M. Taylor, Deputy Director
U.S. Nuclear Regulatory Commission

INDEX OF ATTACHMENTS

CATI GAS & ELECTRIC COMPANY

February 22, 1973
KEQ-195

ATTACHMENT B

ecors, Inc.
01
o 45153

Mr. R. E. Turner

RE: MM. H. ZIMMER NUCLEAR POWER STATION -
UNIT 1 - ASME CODE COMPLIANCE -
W.O. #57300-097, JOB E-5500

en:

ne purpose of this letter is to record the ASME Boiler and Pressure Vessel dition and Addenda which apply to certain code activities associated with ruction of the Mm. H. Zimmer Nuclear Power Station, Unit 1.

1) Reactor Pressure Vessel Design and Construction
Section III, 1968 Edition, with Addenda through Summer, 1970 (except Paragraph N-355).

2) Phase I Piping Fabrication
Section III, 1971 Edition, with addenda through Winter, 1971.

3) Phase II Piping Fabrication
Section III, 1971 Edition, with addenda through Winter, 1972.

4) Phase II Piping and Equipment Erection
Section III, 1971 Edition, with addenda through Summer, 1973.

5) Welding Procedure & Welder Performance Qualification
Section III and IX, 1971 Edition, with addenda through Winter, 1973.

6) Nondestructive Examination
Section III, Appendix IX, 1971 Edition, with addenda through Summer, 1973.

Attachment "B"
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7) Instrument Penetration Fabrication

Section III, 1971 Edition, with Addenda through Winter, 1972.

If you have any questions, please let us know.

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

By W. W. SCHWIERS
PRINCIPAL QUALITY ASSURANCE
AND STANDARDS ENGINEER

RLM:pc
cc: R. D. Sahlberg
B. K. Culver
R. L. Dirr
QAES File

From: R. D. Sahlberg	Action
Gen'l Supt.	
Const. Engr.	
Accounting	
Procurement	
I.R. Dept.	
Piping Engrg.	
TEC	
Project Control	
QA/QC	
File	

B

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H. R. Sager

SARGENT & LUNDY
ENGINEERS
FOUNDED BY FREDERICK DARTENWERD
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603
TELEPHONE - 312-269-2000
CABLE ADDRESS - SARGLUN-CHGO

RICHARD J. PRUSKI
ASSOCIATE
312-269-6513

March 8, 1982
Project 4811-01

The Cincinnati Gas & Electric Company
Wm. H. Zimmer Nuclear Power Station - Unit 1

Design Specifications

Mr. B. R. Sylvia
Vice-President, Nuclear Operations Group
The Cincinnati Gas & Electric Company
P. O. Box 960
Cincinnati, OH 45201

Dear Mr. Sylvia:

At a site meeting with Messrs. Allison and Sullivan (National Board of Boiler & Pressure Vessel Inspectors), The Cincinnati Gas & Electric Company (CG&E) and Sargent & Lundy (S&L) on March 3, 1982 to discuss design specifications, S&L committed to provide an opinion as to the acceptability for all systems versus design specifications by system after discussion with members of the Section III Code. This subject was discussed with Mr. E. B. Branch and Mr. R. F. Reedy who are both Chairmen of selected Section III Subcommittees and it is their opinion that the Code does not prohibit a project specification covering piping systems design specification covering all systems. The Code is only specific in the contents of the design specification as given in NA-3252.

If CG&E would like to discuss our position further, we would be pleased to arrange a telecon with Mr. E. B. Branch or Mr. R. F. Reedy.

Yours very truly,

R. J. Pruski
Project Manager

RJP/mk
In triplicate
Copies:
H. C. Brinkmann
B. K. Culver
H. R. Sager
R. F. Schnibal
S. G. Carlson
E. B. Branch

ATTACHMENT 1

Cannot get a legible copy - DRR

THE CINCINNATI GAS & ELECTRIC COMPANY

December 20, 1974
KEM-49

ATTACHMENT D

Kaiser Engineers, Inc.
P.O. Box 201
Moscow, Ohio 45153

Attention: Mr. D. R. McSparrin

RE: WM. H. ZIMMER NUCLEAR POWER STATION -
UNIT #1, PHASE II PIPING
W.O. 57300, JOB E-5590, FILE 2400-11

Gentlemen:

Documentation and inspection requirements of the piping being furnished by the M. W. Kellogg Company under Specification M-2255 have been reviewed by various members of my staff and yours.

We would like to proceed as follows:

A. Conam will inspect documentation of all Class A,B, and C piping at the M. W. Kellogg shop. Conam will send a telex to Mr. W. J. Friedrich confirming that all documentation is acceptable for all Class A,B, and C piping. This telex will serve as Kaiser Engineers, Inc.'s authorization to accept the piping for erection.

B. Kaiser's receiving inspection of D and DQC piping should be limited to physical damage and completeness only. Receiving inspection of D or DQC piping is not to be concerned with any documentation whatsoever.

We are preparing a DDC to Specification M-2255 now, which will eliminate the requirement to ship one (1) copy of documentation to the site with piping shipments. All documentation will then be shipped to Mr. E. C. Pandorf, who will forward it to the site for storage.

ATTACHMENT 3

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COPY

To: Kaiser Engineers, Inc.

Re: Wm. H. Zimmer Nuclear Power Station -
Unit #1, Phase II Piping
W.O. 57300, JOB E-5590, FILE 2400-11

Please take this letter as your instruction to set up your receiving plans according to the above criteria.

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

By E. A. Borgmann
E. A. BORGMANN, Manager
General Engineering Department

HCB:rat
cc: W. J. Friedrich
E. O. Christensen
M. E. Schuster, Jr.
W. G. Hegener
R. J. Pruski
R. L. Dirr
E. C. Pandorf
W. B. Murray
W. W. Schwiers
T. T. Fox

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KAISER ENGINEERS

ATTACHMENT

Pg 1 of 5

KAISER ENGINEERS, INC.
P O BOX 201
MOSCOW, OHIO 45153

February 20, 1974
KC-1760-Q

Mr. A. E. Rothenberg, Manager
General Engineering Department
The Cincinnati Gas & Electric Co.
139 East Fourth Street
Cincinnati, Ohio 45202

Attention: E. C. Pandorf, Principal Engineer

Subject: Vendor Surveys for ASME Code Materials

Gentlemen:

As a manufacturer and holder of an "N" stamp, we are obligated under section NA 3361 of the code for surveying and qualifying the Quality System Programs of suppliers.

Our Quality Assurance Manual QAP #5, Procurement Document Control, paragraph 6 was rewritten to satisfy the Code Committee (Mr. Fritts). He was very emphatic at that time that this paragraph be included and complied with. He stated that this is one item that is reviewed by the Code Inspector assigned to the project.

At the present time KEI is purchasing code materials such as weld rod, pipe, and pipe fittings. It has been our practice to perform surveys at the suppliers plant, and we wish to continue and not put our ASME status in jeopardy.

Recently you have disapproved requests for such surveys. At the time of your decision it was discussed with me and I did agree. However, since that time I have had an opportunity to review the code and discuss the details with the KEI personnel involved. I am convinced now that you and I erred, and I would like you to reconsider.

This same requirement is imposed in Appendix B of 10CFR50 Criterion VII, and it would behoove you to review your procedures relative to essential hardware and act accordingly.

Very truly yours,

KAISER ENGINEERS, INC.

W. J. Friedrich

W. J. Friedrich
Site Quality Assurance Manager

WJF:sbc

bcc: D. R. McSparrin
D. H. Williams
T. A. Bedford
V. P. McMahon

ATTACHMENT 1

THE CINCINNATI GAS & ELECTRIC COMPANY

pg 2 of 5

March 4, 1974
QA-377

Kaiser Engineers, Inc.
P.O. Box 201
Moscow, Ohio 45153

Attention: Mr. D. R. McSparrin

RE: WM. H. ZIMMER NUCLEAR POWER STATION
VENDOR SURVEYS, W.O. 57300-957
JOB E-5590

COPY

Gentlemen:

We have Mr. Friedrich's letter KC-1760-Q regarding plant quality system surveys of vendors of ASME Code materials.

The Cincinnati Gas & Electric Company's policy, which should also guide Kaiser Engineers policy on the Zimmer project, with regard to vendor quality system surveys, is as follows:

A survey at the vendor's plant is not required for inclusion on a list of bidders. Vendors are selected for the bidders list on the basis of one or more of the following qualifications:

1. Acceptable quality assurance manual
2. Holder of a current ASME Certificate of Authorization
3. Acceptance of the vendor by the Architect-Engineer or Owner
4. The vendor has been approved under an industry sponsored evaluation program
5. Prior satisfactory performance

The need for a pre-award quality system evaluation is determined on an individual basis. Circumstances which

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To: Kaiser Engineers, Inc.

RE: Wm. H. Zimmer Nuclear Power Station
Vendor Surveys, W.O. 57300-957
Job E-5590

Pg-335

may preclude the necessity for a plant quality system survey are as follows:

1. The vendor has been previously surveyed by the Architect-Engineer or Owner

2. The vendor has been approved under an industry-sponsored evaluation program (CASE?)

We shall expect Kaiser Engineers cooperation by observing this policy on the Zimmer project.

If you have any questions, please let us know.

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

By A E Rothenberg
A. E. ROTHENBERG, CHIEF ENGINEER
& Manager, General Engineering Department

AER:rt
cc: W. J. Friedrich
J. D. Flynn
E. A. Borgmann
E. C. Pandorf
W. W. Schwiers

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KAISER ENGINEERS

ATTACHMENT BC

435

KAISER ENGINEERS, INC.
P.O. BOX 201
MOSCOW, OHIO 45153

Date: 4-19-74
KEI No.: QA-286

Mr. A. E. Rothenberg, Manager
General Engineering Department
The Cincinnati Gas & Electric Company
139 East Fourth Street
Cincinnati, Ohio 45202

Attention: Mr. E. C. Pandorf,
Principal Engineer

Copies: (_____)
(_____)

Subject: Quality Assurance Survey

Gentlemen:

Purchasing has requested Quality Assurance to perform a Quality Survey on Ladish Company Co. located in Cudahy, Wisconsin.
This company is a supplier of Class 1, 2, & 3 fittings.
The survey is scheduled for ASAP. Please indicate your approval or disapproval by checking the appropriate block and return.

___ Approval

✓ Disapproval

I feel Survey not required based on past experience & personal knowledge.

E.C. Pandorf
Signature

Very truly yours,

KAISER ENGINEERS, INC.

W. J. Friedrich

W. J. Friedrich
Site Quality Assurance Manager

WJF:sbc

E

KAISER ENGINEERS, INC.
P.O. Box 201
Moreon, Ohio 43154

Pg 505

Date: 10-8-75
KEI No.: OA-361

Mr. L. A. Bergmann, Manager
General Engineering Department
The Cincinnati Gas & Electric Company
139 East Fourth Street
Cincinnati, Ohio 45202

Attention: Mr. E. C. Pandorf, Principal Engineer

Copies: (_____)
(_____)

Subject: Quality Assurance Survey

Gentlemen:

Purchasing has requested Quality Assurance to perform a Quality Survey of H. H. Harper Co. located in Morton Grove, Ill. The company is a supplier of Whip Restraint Bolting Material. The survey is scheduled for ASAP. Please indicate your approval or disapproval by checking the appropriate block and return.

___ Approval

✓ Disapproval

E C Pandorf
Signature

Very truly yours,

KAISER ENGINEERS, INC.

W J Friedrich
W. J. Friedrich
Site Quality Assurance Manager

OCT 17 1975

WJF:sbc

Vendor considered qualified by virtue of listing in current ASME Register

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Eap. 505

PROCEDURE NUMBER: ADMIN 3	MECHANICAL CONSTRUCTION TEST PROCEDURE
REVISION NUMBER: 0	
PROCEDURE TITLE: PERFORMING CONSTRUCTION ON SYSTEMS/AREAS UNDER EPD CONTROL	PAGE 1 OF 5

1.0 SCOPE

1.1 To establish the method for processing of the "Return of System/Subsystem to Construction" Form PRP-04-2 (turnback), "Construction Work Authorization" Form PRP-04-1, and the "Work Request" Form between CG&E Generation Construction Department (GCD), H. J. Kaiser Company and other subcontractors, and CG&E Electric Production Department (EPD).

2.0 PROCEDURE

2.1 General

Construction activities concerning systems or areas which are turned over to the Electric Production Department are implemented in accordance with Wm. H. Zimmer Startup Project SU-PRP-04, "Punchlist Item Completion and Maintenance In Turned Over and Non-turned Over Areas".

2.1.1 EPD "Work Requests" (Sample 1, attached) shall be used to complete work on systems which have been turned over for preoperational testing when the system is in an area turned over to EPD.

2.1.2 "Return of System/Subsystem to Construction" Form PRP-04-2 (Sample 2, attached) shall be used to complete work on systems which have been turned over for preoperational testing but is in areas not turned over to EPD.

2.1.3 "Construction Work Authorization" Form PRP-04-1 shall be used to gain access to an area turned over to EPD to perform work on systems which have not been turned over for preoperational testing; or to perform Code III punchlist work items on systems turned over for preoperational testing where the system is in an area turned over to EPD.

2.1.4 A system/area matrix to assist in determining required forms are attached (Attachment 1).

2.1.5 A flow chart depicting the routing of turnbacks and work requests is shown in Attachment 2.

Attachment "F"
ADMIN 3 Rev. 0
Page 1 of 5

Gen. Const Dept

2.0 PROCEDURE - continued

2.2 Processing of "Return of System/Subsystem to Construction" Form PRP-04-2, (Sample Form 2)

2.2.1 Section 1 of the form shall normally be completed by GCD or a Superintendent. The originator shall state the reason for the turnback, (i.e., punchlist item, NR, DDC, ECR, etc.), and shall determine the construction testing required upon completion of the work. Additionally, any special requirements such as housekeeping, cleanliness, hold points should be so annotated.

2.2.2 The turnback form shall then be given to the GCD Preoperational Turnover Group who assigns a number to the turnback and records the "turnback" in a "turnback" log. The necessary authorization signatures are obtained by the GCD Preoperational Turnover Group from EPD in Section 2. The GCD Preoperational Turnover Group shall distribute the form as indicated at the bottom of the form with an additional copy to HJK QA, and return two copies of the form to the appropriate GCD Construction Engineer. The original is retained by the GCD Preoperational Turnover Group.

2.2.3 The GCD Construction Engineer shall then tag out the system per approved EPD procedures to the extent necessary to perform the work and if necessary, verify the system is drained or de-energized.

2.2.4 A copy of the turnback form shall then be sent to the HJK/FEC punchlist group or to the appropriate subcontractor. The HJK/FEC punchlist ticket shall be issued in accordance with established construction procedures.

2.2.5 Upon completion of the work, the HJK/FEC punchlist group shall return a copy of the turnback to the GCD Construction Engineer who will ensure that construction is completed and that any required construction testing is completed and signed off in Section 3 of the original form. The turnback form shall be returned to the GCD Preoperational Turnover Group who will verify that the necessary construction testing documents are completed and obtain the HJK QA/QC verification.

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2.0 PROCEDURE - continued

2.2 Processing of "Return of System/Subsystem to Construction" Form PRP-04-2, (Sample Form 2)

2.2.6 The turnback form shall then be returned to EPD for appropriate return signatures.

2.3 Processing EPD "Work Request" Form

2.3.1 The "originator" section of the EPD "Work Request" Form is normally initiated by the cognizant CG&E GCD Construction Engineer, EPD System Engineer, or the EPD Maintenance Engineer. The originator shall indicate required construction tests, special requirements, NR number, ECR number, punchlist item number, etc., and send the form to the Shift Supervisor.

2.3.2 EPD shall complete the form in accordance with other EPD approved procedures and return the form to the GCD Preoperational Turnover Group.

2.3.3 The GCD Preoperational Turnover Group log in the Work Request and route it through HJK QA/QC for QA/QC requirements. The GCD Preoperational Turnover Group shall then return the form to the responsible GCD Construction Engineer who shall tag out the system per approved EPD procedures to the extent required to perform the work and obtain any required permits, and if necessary, verify that the system is drained or de-energized.

2.3.4 The Work Request Form shall be sent to the HJK/FEC punchlist group who will in turn issue an HJK/FEC punchlist ticket in accordance with established procedures. The GCD Construction Engineer or Construction Superintendent shall then obtain permission to start work from the Shift Supervisor who shall remove the yellow copy of the "Work Request".

2.3.5 The "Work Request" routing shall be handled in the same manner as the turnback in Section 2.2.1 above. A description of the work performed shall be filled out by the responsible Construction Superintendent or GCD Construction Engineer on the reverse side of the Work Request.

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2.0 PROCEDURE - continued

2.4 Processing "Construction Work Authorization" Form PRP-04-1

2.4.5 When the work is completed, the cognizant GCD Construction Engineer or Superintendent shall sign and date the original copy of the form and shall be maintained by the Shift Supervisor. The copy posted at the access point shall be removed and disposed of. If the work cannot be accomplished before the access form expires, a new form shall be obtained, following the above described procedure.

2.4.6 In the event a security guard is posted at the access point, an access form shall not be required and access control shall be maintained by the guard.

2.4.7 Work authorization forms shall not be necessary to gain access for non-work related functions such as inspectors, data taking, etc.,; however, access to the area shall be controlled by EPD.

3.0 ATTACHMENTS

3.1 Construction Work Authorization Form PRP-04-1 (Sample 3)

3.2 Return of System/Subsystem to Construction Form PRP-04-2 (Sample 2)

3.3 Work Request Form (Sample 4)

3.4 Welding and Burning Permit (Attachment 1)

3.5 Processing Form Flow Chart (Attachment 2)

THE CINCINNATI GAS & ELECTRIC COMPANY
WM. H. ZIMMER NUCLEAR POWER STATION

MECHANICAL CONSTRUCTION TEST PROCEDURE

PROCEDURE NUMBER: ADMIN 3	REV: 0	DATE: February 21, 1980
PROCEDURE TITLE: PERFORMING CONSTRUCTION ON SYSTEMS/AREAS UNDER EPD CONTROL		
APPROVAL RECORD		
APPROVED BY:		
MANAGER - GENERATION CONSTRUCTION		DATE 2-21-80
MANAGER - QUALITY ASSURANCE		DATE 2-21-80

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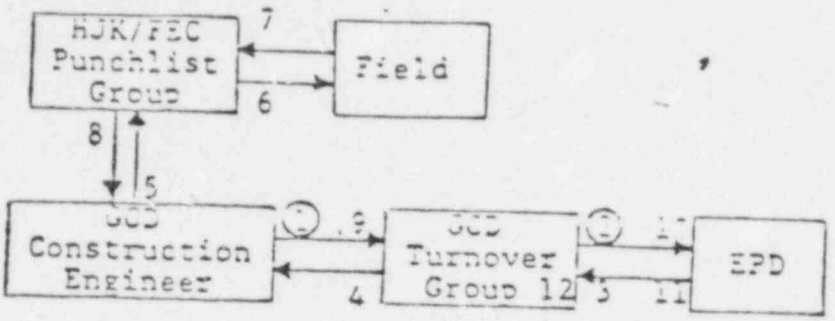
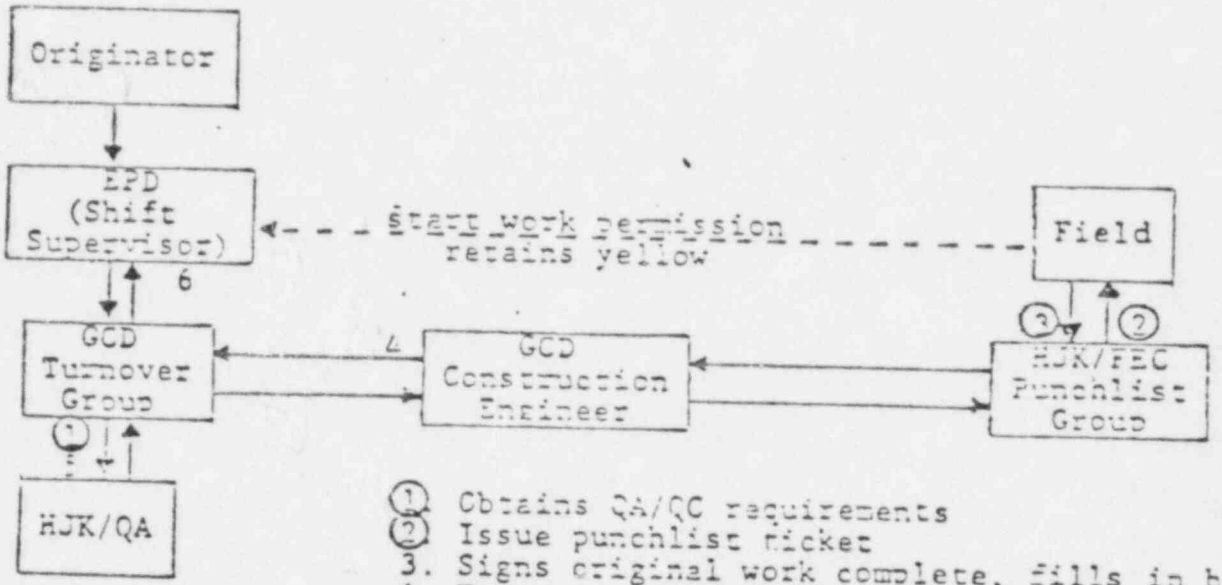


1. Originates turnbacks
2. Adds numbers, logs
3. Authorization signatures
4. Distribute copies
5. Issue after tag out, etc.
6. Issue with punchlist ticke
7. Return after work complet
8. Notification of work compl
9. Signs original copy
10. Reviews construction test documents, interface with
11. Accentance signatures
12. File original



1. Obtains QA/QC requirements
2. Issue punchlist ticket
3. Signs original work complete, fills in back of she
4. Forwards
5. Obtains QA certification
6. Forwards to EPD for closure signature
7. EPD retains original in Document Center

FLOW CHART FOR TURNBACK/WORK REQUEST

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SAMPLE 1

DIABLO CANYON WORK REQUEST

WR NO.

ORIGINATOR

EQUIPMENT NAME/NO. _____ SYSTEM NO. _____

PROBLEM/JOB DESCRIPTION:

LOCATION: BUILDING: _____ ELEVATION: _____

WORK REQUEST/JOB ORDER TAG HUNG: ☐ YES ☐ NO

ORIGINATOR: _____ DATE: _____

SHIFT SUPV.

PRIORITY: ☐ EMERGENCY ☐ IMMEDIATE ☐ ROUTINE ☐ OUTAGE

ISOLATION REQUIRED: ☐ YES ☐ NO TECH. SPEC. REQ. ☐ YES ☐ NO

RWP REQUIRED: ☐ YES ☐ NO TIME LIMIT/REQUIREMENT: _____

☐ REGULAR ☐ EXTENDED SECTION: _____

SHIFT SUPERVISOR REVIEW: _____ DATE: _____

WMC

☐ SAFETY RELATED ☐ NOT SAFETY RELATED ☐ FIRE PROTECTION _____

ASSIGNED TO: ☐ MAINTENANCE ☐ I&C ☐ OTHER _____ PERSONNEL & RADIATION EXPOSURE EST.

WORK REQUEST COORDINATOR REVIEW _____ DATE: _____

WORK REQU. REMARKS

PROCEDURE REQ'D: ☐ YES ☐ NO # _____ HOUSEKEEPING ZONE: _____

WELDING AND BURNING PERMIT REQ'D: ☐ YES ☐ NO CLEANLINESS CLASS: _____

ENGINEERING CHANGE REQUEST: ☐ YES ☐ NO # _____

EXPLANATION:

GROUP SUPERVISOR: _____ DATE: _____

☐ QC REQUIRED ☐ NO QC REQUIRED

EXPLANATION:

STATION QUALITY ENGINEER: _____ DATE: _____

SWITCHING ORDER: _____ RWP# _____

APPROVAL

POST WORK SURVEILLANCE TEST REQ'D: ☐ YES ☐ NO PROCEDURE NO. _____

APPROVAL TO START WORK: _____ / _____ DATE: _____

SHIFT SUPERVISOR WMC

COMP. OF WORK

WORK COMPLETED BY: _____ DATE: _____

WORK REVIEWED BY: _____ DATE: _____

POST WORK SURVEILLANCE TESTING COMPLETED: _____ DATE: _____

SHIFT SUPERVISOR

EQUIPMENT RETURNED TO NORMAL & ACCEPTED FOR OPERATION: _____ / _____ DATE: _____

WMC SHIFT SUPERVISOR

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ATTACHMENT 2
DC.SAD.US-17
REV. 02

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SAMPLE 2

RETURN OF SYSTEM/SUBSYSTEM TO CONSTRUCTION -
FORM PRP-04-2

1. Generation Construction

Date: _____ Release No: _____ Turnback No: _____

The _____

_____

should be returned to GCD for: _____

_____

_____

_____

Prepared By: _____ Date: _____

Required construction retest (Refer to system index test matrix as applica

Test Number	Description and Requirements
_____	_____
_____	_____
_____	_____

Construction Tests Designated By: _____ Date: _____

2. Review and Authorization

Preop retesting required: No____ (Yes____ Test No._____ Section_____)

System Engineer: _____ Date: _____

Reviewed By: _____ Date: _____
Operations Supervisor

Authorized By: _____ Date: _____
Maintenance Supervisor

3. Generation Construction

Approval to Start Work: Punchlist Tag Assigned By_____ Date_____

The work requested above has been completed and necessary construction testing performed with appropriate test documentation forwarded to GC preoperational turnover group with work performed by _____
(organization)

The item is being returned to EPD jurisdiction.

Cognizant Construction Engineer_____ Date: _____
GC Preop Turnover Group Engineer_____ Date: _____
QA/QC Documentation Complete_____ Date: _____

4. Return To EPD

The system as described above is accepted back from Generation Construct

Maintenance Supervisor_____ Date: _____

Preop Retesting Complete_____ Date: _____
System Test Coordinator

cc: Station Superintendent
Test Coordinator
System Test Coordinator
Operations Supervisor
EPD System Turnover Coordinator
System Engineer
Maintenance Supervisor
Station Quality Engineer

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SAMPLE 3 Authorization Number _____

CONSTRUCTION WORK AUTHORIZATION - FORM PRP-04-1

1. Generation Construction

Area to Which Access is Required: _____

Area Release Number: _____ System: _____

Dates Access Required: From _____ To _____

Description of Work To Be Performed: _____

_____

_____

_____

Does Work Involve Welding or Burning? _____ Yes _____ No

Number of Craft Required: Pipefitters _____

Electricians _____ Millwrights _____

Boilermakers _____ Insulators _____

Painters _____ Other (Specify) _____

Requested By: _____ Date _____
Cognizant Construction Engineer

Electric Production Dept.

2. Review and Authorization

Welding and Burning Permit Required No ____ (Yes ____ Number ____)

Fire Protection and Other Considerations: _____

_____

_____

Reviewed By: _____ Date _____
Building Services Supervisor

System Engineer Approval _____ Date _____

Dates Access Authorized: From _____ To _____

Access Authorized By: _____ Date _____
Shift Supervisor

3. Completion

Work Completed: _____ Date _____
Cognizant Construction Engineer

Authorization Cleared: _____ Date _____
Shift Supervisor

Shift Supervisor - Submit Completed Access Form to Building Services Supervisor.

SAMPLE 4

WM. H. ZIMMER NUCLEAR POWER STATION

WELDING AND BURNING PERMIT

Foreman

WORK REQUEST NO.: _____ ISSUED TO: _____ DATE: _____

Job Location _____

Activity Description: _____

Estimated Duration: _____ Hours _____ Date/Time To _____ Date/Time

Firewatches - Number (minimum of one): _____ name(s) of persons assigned

- Location(s) Posted: _____

Technician

TO REPORT A FIRE DIAL (later)

Nearest PA/Telephone Location: _____

Nearest Installed Fire Portection Equipment: _____

Fire Protection Checks

	Yes	No
1. Is additional protection required for equipment within 35 feet? (If yes, specify under "remarks").	___	___
2. The location of the maintenance activity has been personally inspected and:		
a. The area within 35 feet of the job is free of combustable material or the material is protected by a fire retardent barrier.	___	___
b. The area within 35 feet of the job is free of flammable lint, dust, vapors, and liquids or unpurged tanks containing such materials.	___	___
c. Ample portable extinguishing equipment has been provided.	___	___
d. Wall openings and doors to adjacent enclosed rooms or cubicles are properly sealed or closed.	___	___
3. The maintenance activity and its location have been surveyed for possible spark potential and any necessary precautions have been taken.	___	___

REMARKS: _____

Foreman

_____ Foreman _____ Date

Shift Supervisor

Automatic Fire Protection Systems Disarmed _____ Date/Time

Rearmed _____ Date/Time

_____ Shift Supervisor _____ Date

Shift Supervisor

Welding/Burning as listed above is completed.

_____ Shift Supervisor _____ Date/Time

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SYSTEM

AREA

	NOT TURNED OVER	TURNED OVER
NOT TURNED OVER	For Preoperational Testing CONST. PROCEDURES CONST. CONTROLS	For Preoperational Testing RETURN TO CONST. FORM (Turnback) CONST. PROCEDURES CONST. CONTROLS
TURNED OVER	CONST. WORK AUTH. FORM CONST. PROCEDURES CONST. CONTROLS EPD CONTROLS: HOUSEKEEPING WELDING + BURNING PERMIT	EPD WORK REQUEST HOUSEKEEPING CLEANLINESS WELDING + BURNING PERMIT

System/Area/Form Matrix

Attachment 1

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11 of 17

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HENRY J. KAISER, CO.

WM. H. ZIMMER POWER STATION

NONCONFORMANCE REPORT

NO. _____ PAGE _____ OF _____

1. DWG/INSTALLATION NO.	2. DWG/INSTALLATION NAME:	3. PO/CONTRACT NO.	4. SUPPLIER/CONTRACTOR NAME:
P&ID M-SS-1 Valve IVP006B	Primary Containment Ventilation Chilled Water	7070	HJK/Anchor Darling

5. INSPECTION PLAN NO.:	6. ORIGINATOR:	7. DATE:	8. SPECIFICATION NO.	ASME
N/A	R. Strozier	5/3/82	CSPF 2.0 Rev. 5 QSP 7 Rev. 5 ASME III 1971	YES ☒ NO ☐

9. DESCRIPTION OF NONCONFORMANCE	10. DISPOSITION	11. DISPOSITION INSTRUCTIONS/JUSTIFICATION

System: VP

Elevation: 570 NW

Building: Reactor

Requirement:

ASME III 1971 Para. NA-8114.1 states: "The certificate of authorization shall identify the facility covered and state the limits of activities which authorization is granted".

DEFICIENCY:

1) The disassembly of valve IVP006B per CG&E Turnback #01 Rel. PT-VP-P004 is not within the scope of ASME certificates of authorization N-1436 or N-1437.

2) Owner approved QA/ QC programs and procedures for this work scope

12. REVIEW BOARD (REQUIRED ON ALL ACCEPT/REPAIR DISPOSITIONS)

ANI DATE	NPD DATE	HJK CONSTRUCTION ENGR. DATE
S&L DATE	CG&E NED ENGR DATE	CG&E Q.E. DATE / HJK Q.E.

13. REPAIR/REWORK COMPLETE AND ACCEPTABLE

ORIGINATOR DATE

14. CAUSE

15. CORRECTIVE ACTION

CAR NO. IF APPLICABLE: _____

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Item or Description	Disposition	Disposition Initials & Date
were not in place at the time of this activity.		
3) There are no QA/QC records verifying that this valve was reassembled to the manufacturer's specifications.		
REQUIREMENT:		
1) ASME III 1971 Para. NA-4451 states; "The manufacturer or installed shall operate under a controlled system such as process sheets, shop procedures, check lists, travelers, or equivalent procedures. Measures shall be established to assure that processes including welding & heat-treating are controlled in accordance with the rules of this section of the code and are accomplished by qualified personnel using qualified procedures."		
2) ASME III 1971 Para. NA-4510 states; "In process and final examinations and test shall be established to assure conformance with documented		

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instructions, procedures and drawings.		
3) PE QAP-7 Rev. 6 Para. 3.3.1.2; "Welding and non-destructive examinations will be performed in accordance with the requirements of the ASME Code Section III Div. I and identified on the KE-1 form and reviewed by the authorized nuclear inspector to establish hold points."		
4) SPPM 8.0 Rev. 5 Para. 3.1.1 states; "The documentation of piping systems is achieved through the use of the following documents:		
A. Construction Inspection Plan		
B. KE-Weld 1 Form		
C. Small Bore Pipe Data Sheet		
D. KE-Weld 2 Form		
E. KE-Weld IA Form		
DEFICIENCY:		
1) Valve IVP0063 disc guide extensions were welded to the valve body without documented evidence of:		

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14 of 15

Item of Nonconformance	QC Disposition	QC Disposition Initial & Date
A. Instructions, procedures and/ or drawings.		
B. An approved construction inspection plan.		
C. Approved or specified welding procedure.		
D. Specified NDE.		
E. ANI concurrence and hold points.		
F. Filler material traceability.		
G. Proper filler material.		
H. HJK QA/QC concurrence or hold points.		

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HENRY J. KAISER, CO.

WM. H. ZIMMER POWER STATION

NONCONFORMANCE REPORT

NO. _____ PAGE _____ OF _____

1. DWG/INSTALLATION NO.	2. DWG/INSTALLATION NAME:	3. PO/CONTRACT NO.	4. SUPPLIER/CONTRACTOR NAME:
P & ID M-58-1 Valve 1WR133B	Reactor Building Closed Cooling Water	7070	H.J.K./Anchor Darling

5. INSPECTION PLAN NO.:	6. ORIGINATOR:	7. DATE:	8. SPECIFICATION NO.	ASME Class C
N/A	R. Strozier	4-26-82	SPPM 8.0 Rev. 5 QAPM 7 Rev. 6 ASME III 1971	YES ☒ NO ☐

9. DESCRIPTION OF NONCONFORMANCE	10. DISPOSITION	11. DISPOSITION INSTRUCTIONS/JUSTIFICATION
SYSTEM: WR		
ELEVATION: 570 N.W.		
BUILDING: Reactor		
REQUIREMENT: ASME III 1971 para. NA-8114.1 states; "The certificate of authorization shall identify the facility covered & state the limits of activities which authorization is granted."		
DEFICIENCY: 1) The disassembly of valve 1WR133B per C.G.&E. turnback #01 Rel. PT-VP-PC04 is not within the scope of ASME certificates of authorization N-1436 or N-1437.		
2) Owner approved QA/QC programs &		

12. REVIEW BOARD (REQUIRED ON ALL ACCEPT/REPAIR DISPOSITIONS)

ANI _____ DATE _____ NPD _____ DATE _____ HJK CONSTRUCTION ENGR. _____ DATE _____

S&L _____ DATE _____ CG&E NED ENGR _____ DATE _____ CG&E O.E. _____ DATE _____ HJK O.E. _____

13. REPAIR/REWORK COMPLETE AND ACCEPTABLE

_____ ORIGINATOR _____ DATE

14. CAUSE

15. CORRECTIVE ACTION

CAR NO. (IF APPLICABLE) _____

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Item of Nonconformance	Disposition	Disposition Initial & Date
procedures for this work scope were not in place at the time of this activity.		
3) There are no QA/QC records verifying that this valve was reassembled to the manufacture's specifications.		
REQUIREMENT:		
1) ASME III 1971 para. NA 4451 states, "The manufacturer or installer shall operate under a controlled system such as process sheets, shop procedures, check lists, travelers, or equivalent procedures. Measures shall be established to assure that processes including welding and heat-treating are controlled in accordance with the rules of this section of the code and are accomplished by qualified personnel using qualified procedures."		
2) ASME 1971 para. NA 4510 states; "In process and final examinations and test shall be established to assure conformance with documented		

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Item of Noncompliance	Description	Corrective Action & Status
instructions, procedures and drawings.		
3) Per QAP-7 Rev. 6 Para. 3.3.1.2, "Welding and nondestructive examination will be performed in accordance with the requirements of the ASME Code Section III Div. I and identified on the KE-1 form and reviewed by the authorized nuclear inspector to establish hold points."		
4) SPPM 8.0 Rev. 5 Para. 3.1.1 states; "The documentation of piping systems is achieved through the use of the following documents:		
A. Construction inspection plan		
B. KE-Weld 1 Form		
C. Small Bore Pipe Data Sheet		
D. KE-Weld 2 Form		
E. KE-Weld 1A Form		
DEFICIENCY: Valve 1WR133B disc guide extensions were welded to the valve body without documented evidence of:		
1. An approved construction inspection plan.		

F
18 & 19

...cription of Nonconformance	10 Disposition	11. Disposition Instruc. & Justif...
2. Approved or specified welding		
procedure.		
3. Specified NDE.		
4. ANI concurrence or hold points.		
5. Filler material traceability.		
6. Proper filler material.		
7. HJK QA/QC concurrence or hold		
points.		

F
19/19

F6

RETURN OF SYSTEM/SUBSYSTEM TO CONSTRUCTION - FORM PRP-01-1

T. CROW

Date: 7-31-80 Release No: PT-24-01 Turnback No: 96

The RHR PUMP C DISCHARGE PIPING AND ALL CONNECTING PIPING IN THE PUMP ROOM

should be returned to GCD for: PIPING RE-ROUTE PER ECR 1102 P/L RH-1-805 AND REPLACEMENT OF VALVE 1E12-F377 · P/L RH-1-136

1. Construction Construction

Prepared By: S.R. Kadelbrunner Date: 7-31-80

Required construction retest (Refer to system index test matrix as appl

Test Number	Description and Requirements
QACMI-M9	CLASS B CLEANLINESS
RHH4	REHYDRO
	* HYDRO VERIFICATION TO BE COMPLETED AFTER HYD RU-11C (SEE D/L # RH-1-032) TH 12-6-81

Construction Tests Designated By: S. Kadelbrunner Date: 7-31-80

2. Review and Authorization

Preop retesting required: No ___ (Yes ___ Test No. ___ Section ___

System Engineer: O'Hearn for A Jenkins Date: 8-4-80

Reviewed By: [illegible] Operations Supervisor Date: 8/4/80

Authorized By: R C Dennis Maintenance Supervisor Date: 8/5/80

Exception RH1/1g

3. Acceptance Construction

Approval to Start Work: Punchlist Tag Assigned By ___ Date ___

The work requested above has been completed and necessary construction testing performed with appropriate test documentation forwarded to GC preoperational turnover group with work performed by [illegible] (organization.)

The item is being returned to EPD jurisdiction.

Cognizant Construction Engineer [signature] Date: 7-16-81

GC Preop Turnover Group Engineer [signature] Date: 12-6-81

QA/QC Documentation Complete SEE NOTE Date: 12-6-81

4. Return To EPD

The system as described above is accepted back from construction jurisdi

Maintenance Supervisor T.E. Crow Date: 12/16/81

Preop Retesting Complete ___ Date: ___
System Test Coordinator

cc: Station Superintendent
Test Coordinator
System Test Coordinator
Operations Supervisor
EPD System Turnover Coordinat
System Engineer
Maintenance Supervisor
Station Quality Engineer

ATTACHMENT "C"

Attachment (1)

HENRY J. KAISER COMPANY

P. O. BOX 201
MOSCOW, OHIO 45153

Copy to Jyus

RECEIVED
QUALITY ASSURANCE DEPT
MAR 16 '82

RETURN TO
FILE NO.

March 15, 1982
KC-16365-Q

Mr. B. Culver
Cincinnati Gas & Electric Co.
139 East 4th Street
Cincinnati, Ohio 45202

Subject: Code Data Reports and Stamping Agreement

Gentlemen:

Attached is your copy of the Zimmer Nuclear Power Station Code Data Reports and Stamping Agreement between the Henry J. Kaiser Company and Catalytic Inc.

The original will be retained in Henry J. Kaiser Company master files.

Sincerely,

HENRY J. KAISER COMPANY

M. Albertin
Project Manager

D. L. Howard
Director, Quality Assurance
Programs - KEI

DLH/MA/jg

Attachment

cc: H. Sager - CG&E
R. Fisher - Catalytic
R. Bryson - Catalytic
P. Botts - Catalytic
V. Dent - Catalytic
J. Coyle
D. Sahlberg
D. Iselin
D. Fitzpatrick
H. Hunsaker
W. Hedzik
J. Watkins
N. Vitale
L. Dykstra - Hartford Steam Boiler
L. Burton - Hartford Steam Boiler
File

Attachment "1"
Page 1 of 2

For ASME code work at the Zimmer Nuclear Project, it is agreed by the parties that modification or repair by Catalytic Inc. of any ASME code system for which Henry J. Kaiser Company has not completed the N-5 Date Report and stamped the system, shall be performed under the following controls.

1. H.J.K. Co. will not be required to submit an N-5 Data Report prior to Catalytic Inc. beginning system modification or repair work.

2. Catalytic Inc. shall initiate a request for release of a system/component to the Project Manager in accordance with jointly approved procedures prior to performing work on code system, with boundaries identified on drawings as written record of code responsibilities. H.J.K. Co. shall maintain configuration control of code systems indicating on drawings work performed by H.J.K. Co. and Catalytic Inc. (Reference ZAPO 6)

3. Catalytic Inc. will generate field drawings when needed to perform the work they are assigned. (The drawings will be generated according to S&L/Kaiser standards). At the completion of the assigned work, Catalytic Inc. will issue a copy of these drawings to the Kaiser CCC so that the master drawings may be corrected to as-built conditions.

4. H.J.K. Co. will pressure test all piping systems completed and installed by H.J.K. Co. as defined in the design specifications. Catalytic Inc. will be responsible for pressure testing all work completed by Catalytic Inc. Pressure testing may be performed jointly by H.J.K. Co./Catalytic Inc.

5. H.J.K. Co. will prepare an N-5 Data Report(s) for each piping system that is completed by H.J.K. Co. The N-5 Report shall exclude all modifications or repair work by Catalytic Inc. Signed N-5 Code Data Reports will be forwarded to the CG&E Records Center.

6. Signed N-5 Code Data Reports will be forwarded to the CG&E Records Center by Catalytic Inc. for portions of the system completed by Catalytic Inc.

7. H.J.K. Co. will apply the appropriate code stamp (indicating responsibility and code compliance) for installation of only that portion of the system installed by H.J.K. Co.

8. Catalytic Inc. will apply the appropriate code stamp (indicating responsibility and code compliance for installation of only that portion of the system installed by Catalytic Inc.

W. A. Hazelton for D. L. Howard.
D. L. Howard
Director, Quality Assurance Programs-KEI

B. J. Fisher 15 Mar 78
B. J. Fisher
Resident Project Manager
Catalytic, Inc.

M. Albertin
M. Albertin
Project Manager - HJK Co.

H
292

Attachment "I"

HENRY J. KAISER COMPANY

P O BOX 201
MOSCOW, OHIO 45153

July 1, 1981
KC-15604-Q

Donald M. Milan, Chief
Division of Boiler Inspection
Department of Industrial Relations
State of Ohio
2323 - W. Fifth Ave. P.O. 825
Columbus, Ohio 45216

Dear Mr. Milan:

The Wm. H. Zimmer Project has on hand an ASME B&PV Sec. III "N" stamped pressure vessel on which it is necessary to make a modification, due to a later engineering change. The modification is to remove a three (3) inch nozzle and replace it with a four (4) inch nozzle of the same length.

Ohio State Law now requires modification of ASME B&PV stamped components to be repaired or modified by the holders of an appropriate "R" stamp. It is understood, that exceptions to this requirement can be made by the State Inspector.

Henry J. Kaiser Company is the holder of Nuclear Certificates of Authorization N-1437 and N-1436 issued August 24, 1979 and expiring June 25, 1982, covering Class 1,2 & 3 component, parts and appurtenances, piping subassemblies, component supports and tubular products welded with filler metal and for the installation of such items.

We are enclosing copies of the approved engineering change request and associated documents including FDDR ZN-1-1012 which includes a sketch of the proposed change.

Permission is requested to perform the necessary modifications within the scope of the existing Quality Assurance Program for Section III of the ASME B&PV code. Henry J. Kaiser Company is pursuing both the "R" stamp and the "NR" stamp, but has been informed that scheduling of a survey for an "NR stamp is at least two months away.

Attachment "I"

Page 1 of 16

Thank you for your consideration. If there are any questions, please do not hesitate to contact me.

Very truly yours,

THE HENRY J. KAISER COMPANY

Paul Kyner

Paul Kyner
HJK Site Quality Assurance Manager

JN/bw
Enclosures
cc: R.A. Jagger
Ass't Director of Inspection
National Board of Boiler & Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229

L. Burton (ANI)
S. Swain (CG&E)

I
2g 16

G. E. WORK RELEASE FORM

~~FDI~~/FDDR NUMBER: FDDR 1012 R1 DATE RECEIVED: 5-2-91

MPL NUMBER: C 91-A001

~~FDI~~/FDDR DESCRIPTION: REVISE SI-1 PBIC STORAGE TANK SUCTION NOZZLE

WORK TO BE COMPLETED BY: CG&E PRODUCTION DEPARTMENT: _____

CG&E TESTING DEPARTMENT: _____ H. J. KAISER CO.: ✓

F.E.C.: _____ no backcharge

OTHER: _____

TESTING COMPLETED: YES _____ NO: _____ NOT REQUIRED: _____

S/ _____

DATE: _____

THE ABOVE FDI/FDDR HAS BEEN COMPLETED:

S/ _____

DATE: _____

FDI/FDDR CLOSED OUT BY G.E.:

DATE: _____

(ATTACHMENT 1)

I
3 of 16

DISTRIBUTION:

CG&E SITE CONSTRUCTION MANAGER	(✓
CG&E QA&S	(✓
CG&E PRODUCTION DEPARTMENT	(✓
H. J. KAISER CO. CONSTRUCTION ENGINEER	(✓
INSTRUMENTATION	( )
H. J. KAISER CO. PIPING ENGINEER	( )
H. J. KAISER CO. INSTRUMENT ENGINEER (FIELD)	( )
F.E.C. CONSTRUCTION ENGINEER	( )
CG&E TEST DEPARTMENT	( )
G.E. STARTUP	(✓
PREOPERATIONAL TURNOVER GROUP	(✓

HJK IS RESPONSIBLE FOR PERFORMING THE WORK

C M Fetters 5/22/81
CG&E REP./DATE

(ATTACHMENT 2)

I
4 of 6

CHECK LIST TO ASSURE IMPLEMENTATION OF
DESIGN INTERFACES FOR DESIGN CHANGES

Identification of Design Change FDDR KN-1-1012 Rev 1 Date Received 4-29-81

Proposed by C.E. Affects Design Interface ___ Yes ___ No

Reviewed by Project Manager R.W. Hamel Date 4-29-81

A. Mechanical Interface Review Required X Yes ___ No

Systems Affected S.C.

Document Changes Required X Yes ___ No

List of Documents to be Changed Stress Tank (Dwg. # 7626960)

Attachment for Additional Description ___ Yes ___ No

Reviewed by E. Armstrong Date 4/30/81

B. Structural Interface Review Required ___ Yes X No

Systems Affected

Document Changes Required ___ Yes ___ No

List of Documents to be Changed

Attachment for Additional Description ___ Yes ___ No

Reviewed by Date

C. Electrical Interface Review Required ___ Yes X No

Systems Affected

Drawing Changes Required ___ Yes ___ No

List of Drawings to be Changed

Attachment for Additional Description ___ Yes ___ No

Reviewed by Date

D. Additional Discipline Review Required as follows:

Instrumentation ___ Yes X No Reviewed by Date

Heat & Ventilate ___ Yes X No Reviewed by Date

QA/QC ___ Yes X No Reviewed by Date

Miscellaneous Disciplines:

1. ___ Yes ___ No ___ Reviewed by Date

2. ___ Yes ___ No ___ Reviewed by Date

See attachments for description of affected systems and drawings.

Final Review by Project Manager

Prior to Issue Date

I

5 of 16

CAS Form 107

BECHTEL

FIELD DEVIATION DISPOSITION REQUEST

DATE OF ISSUE

ISSUED BY PD & AC

DATE 3-9-81

FDDR NO. [illegible]

REVISION 0

SHEET 1 OF [illegible]

PROJECT [illegible]

EQUIPMENT, PIPELINE OR STRUCTURE [illegible]
SLC Storage Tank

FDDR ORIGINATOR [illegible]

DATE [illegible]

DOCUMENT NO. [illegible] | SH. NO. 1 | REV 5 | TITLE Purchase Part Drawing - Storage Tank

DEVIATION DESCRIPTION

Nozzle [illegible] on the SBLC storage tank is a [illegible]" outlet (pump suction). Per the attached Letter SLC-[illegible] of [illegible] (Sargent & Lundy to GE) the customer intends changing to a 4" reinforced nozzle.

K. K. Dick [signature] 3/2/81

[signature] T. E. [illegible] 3/2/81

☒ SUGGESTED DISPOSITION ☐ EXPEDITED DISPOSITION

Engineering is to advise as to acceptability of the change per the attached S&L sketch.

Material Requirement: N/A CG&E responsibility
Cost Accounting: CG&E - Engineering, material, installation costs CAS # BP510

FINAL DISPOSITION

As suggested change shall be to ASME Sect XI

JUSTIFICATION OF DISPOSITION

Safety & reliability of the tank not affected. Reliability of the system may be improved.

DESIGN VERIFICATION STATEMENT

Verification [illegible] NO Civ [illegible]

REVIEWED FOR
[illegible]
SARGENT & LUNDY
ENGINEERS

1. ☒ NO EXCEPTION TAKEN. [illegible] MAY PROCEED WITH [illegible] CONSTRUCTION [illegible] WITH SPECIFICATION
2. ☐ CONTRACTOR MAY PROCEED ACCORDINGLY WITH SPECIFIC BASIS ON MAKING REVISIONS AS NOTED AND REQUIRED.
3. ☐ REVISE AS NOTED AND [illegible] HOLD FABRICATION

ANY ACTION SHOWN [illegible] SUBJECT TO THE TERMS OF CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT INCLUDING DESIGN AND DETAIL

FOR REACTOR [illegible]
EQUIPMENT NO [illegible]
BY R. ABALOS DATE [illegible]
SPEC NO [illegible] PROJ NO [illegible]

APPROVALS	DATE
[signature]	3/[illegible]/81
[signature]	
[signature]	3/18/81
[signature]	3/[illegible]
[signature]	3/[illegible]/81
[signature]	[illegible]

I

6 of 16

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, P.O. BOX 177, NEW RICHMOND, OHIO 45157
Phone (513) 553-2011, Ext. 244/378

NUCLEAR ENERGY

BUSINESS GROUP

FDDR T - 1955
April 23, 1981

S. C. Swain
Site Construction Manager
Cincinnati Gas and Electric Co.

Attention:

Attached is an "information" copy of General Electric Company FDDR HX-1- 1012 Rev 1 which:

- [XX] is an expedited engineer's approval*
- [ ] is for information only
- [ ] includes the Final Disposition with design engineer approval
- [ ] has been canceled or disapproved

Any questions or concerns should be directed to this office.

Yours truly,

T. E. Bloom

T. E. Bloom
Resident Site Manager
Zimmer 1 Site

TEB/ejc

*cc: R. J. Pruski
Sargent & Lundy

I
7846

DATE OF ISSUE 4/15

FIELD DEVIATION DISPOSITION REQUEST

FDDR NO. KN-1-1012

REVISION 1

SHEET 1 OF 2

PROJECT ZIMMER UNIT 1

EQUIPMENT IMPL OR DESCRIPTION OR BOTH) CAT-V001 SOLC Storage Tank

FDDR ORIGINATOR W. H. Hunter DATE 4/15/81

DOCUMENT NO.	SH NO.	REV.	TITLE
762E969P003	1	5	Purchase Part Drawing - Storage Tank

DEVIATION DESCRIPTION

This revision is to replace sheet 2 of Revision 0, sketch showing the Sargent & Lundy design for enlarging the SBLC pump suction nozzle. The previous sketch did not take account of the tank physical layout.

SITE IMPACT: Needed prior to pre-op test.

M. M. Dick SITE QC CONCURRENCE DATE 4/15/81

T. E. Bloom FIELD ENGINEERING T. E. Bloom 4-16-81 DATE

☐ SUGGESTED DISPOSITION ☒ EXPEDITED DISPOSITION

Engineering is to advise as to acceptability of the reduced reinforced area per the attached revised S&L sketches.

COST ACCOUNTING: All costs to CG&E.

DISPOSITION NEED DATE FW 8118

Per telecon H. T. Larkin, M. M. Dick TB
EXPEDITED DISPOSITION APPROVAL BY Taken on 4/22/81 DATE

FINAL DISPOSITION

RCA/ECN FDI NO.

JUSTIFICATION OF DISPOSITION DECISION (SAFETY, RELIABILITY)

DESIGN VERIFICATION STATEMENT

VERIFIED BY DATE

APPROVALS	DATE
QUALITY	

DRF NO. IF APPLICABLE

APPROVALS	DATE

THIS EQUIPMENT IS SAFETY RELATED ☐ YES ☒ NO
SAFETY FUNCTION IS AFFECTED ☐ YES ☐ NO

NOTIFICATION REQUIRED BY N.R.C. ☐ YES ☐ NO

FURTHER ACTION REQUIRED ☐ YES ☐ NO

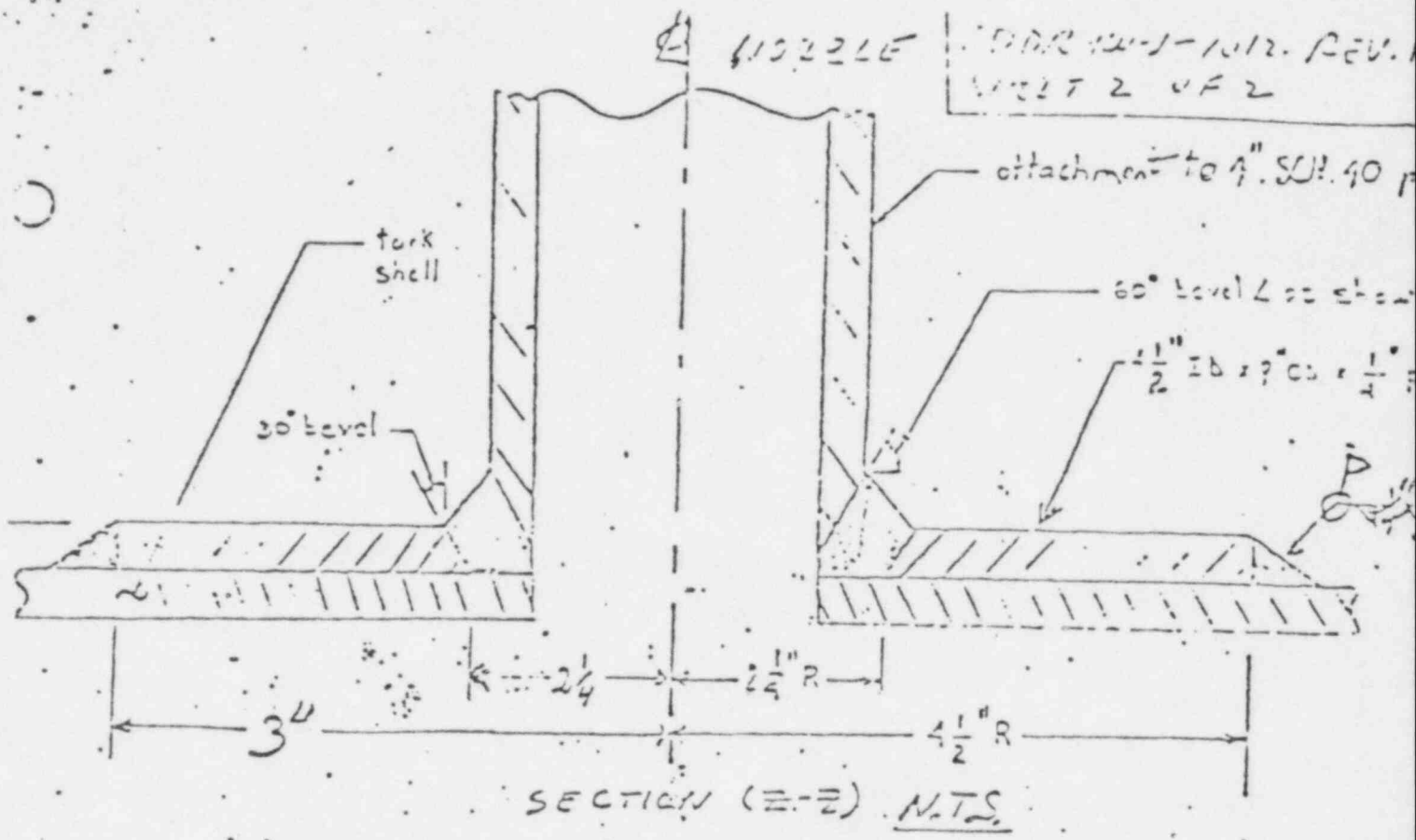
FIELD WORK ORDER NO. N/A I

DISTRIBUTION (FDDR)

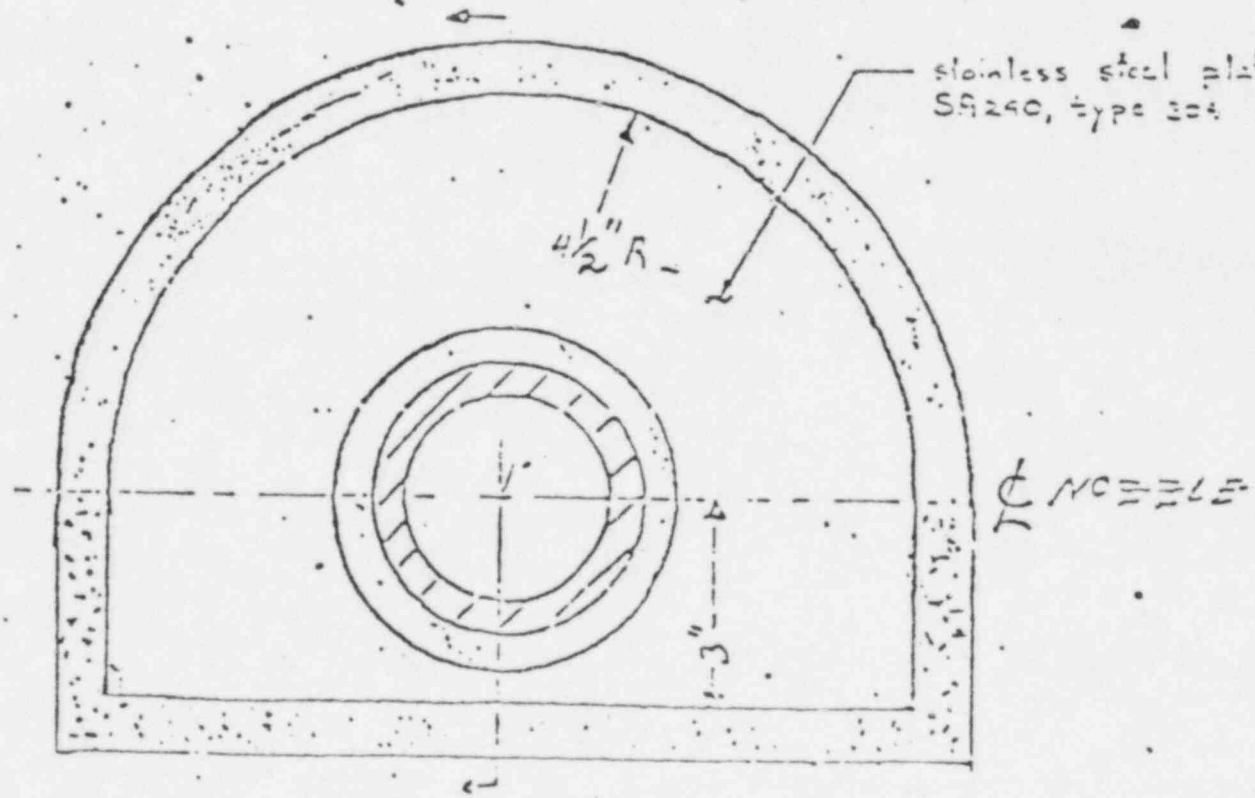
INTERNAL	EXTERNAL

DISPOSITION COMPLETE DATE 8 0 16

QUALITY ASSURANCE



SECTION (E-E) N.T.S.



I

98

ECR-775

G. E. WORK RELEASE FORM

~~FDI~~/FDDR NUMBER: KN-1-1012 rev. 3 DATE RECEIVED: 9/21/81

MPL NUMBER: C41-A001

FDI/FDDR DESCRIPTION: Revised nozzle detail

WORK TO BE COMPLETED BY: CG&E PRODUCTION DEPARTMENT: _____

CG&E TESTING DEPARTMENT: _____ H. J. KAISER CO.: ✓

F.E.C.: _____ no backcharge

OTHER: _____

COPY

TESTING COMPLETED: YES _____ NO: _____ NOT REQUIRED: _____

S/ _____

DATE: _____

THE ABOVE FDI/FDDR HAS BEEN COMPLETED:

S/ _____

DATE: _____

FDI/FDDR CLOSED OUT BY G.E.:

DATE: _____

(ATTACHMENT 1)

I
10 8

DISTRIBUTION:

CG&E SITE CONSTRUCTION MANAGER	(1)
CG&E QA&S	(1)
CG&E PRODUCTION DEPARTMENT	(1)
H. J. KAISER CO. CONSTRUCTION ENGINEER	(1)
INSTRUMENTATION	( )
H. J. KAISER CO. PIPING ENGINEER	( )
H. J. KAISER CO. INSTRUMENT ENGINEER (FIELD)	( )
F.E.C. CONSTRUCTION ENGINEER	( )
CG&E TEST DEPARTMENT	( )
G.E. STARTUP	(1)
PREOPERATIONAL TURNOVER GROUP	(1)

HJK IS RESPONSIBLE FOR PERFORMING THE WORK

[signature] 8/21/81
CG&E REP./DATE

(ATTACHMENT 2)

I
11/81

CHECK LIST TO ASSURE IMPLEMENTATION OF Sandild cong
DESIGN INTERFACES FOR DESIGN CHANGES

Identification of Design Change FDDR KN-1-1012 Rev 3 Date Received 9-18-81

Proposed by GE Affects Design Interface X Yes ___ No

Reviewed by Project Manager [signature] Date 9-21-81

A. Mechanical Interface Review Required X Yes ___ No

Systems Affected Does not affect drawings, will change words on cutler.

Document Changes Required ___ Yes ___ No

List of Documents to be Changed Drawings with page ... rev. 4

Attachment for Additional Description ___ Yes ___ No

Reviewed by [signature] Date 9/21/81

B. Structural Interface Review Required ___ Yes X No

Systems Affected ___

Document Changes Required ___ Yes ___ No

List of Documents to be Changed ___

Attachment for Additional Description ___ Yes ___ No

Reviewed by ___ Date ___

C. Electrical Interface Review Required ___ Yes X No

Systems Affected ___

Drawing Changes Required ___ Yes ___ No COPY

List of Drawings to be Changed ___

Attachment for Additional Description ___ Yes ___ No

Reviewed by ___ Date ___

D. Additional Discipline Review Required as follows:

Instrumentation ___ Yes X No Reviewed by ___ Date ___

Heat & Ventilate ___ Yes X No Reviewed by ___ Date ___

QA/QC ___ Yes X No Reviewed by ___ Date ___

Miscellaneous Disciplines:

1. ___ Yes ___ No ___ Reviewed by ___ Date ___

2. ___ Yes ___ No ___ Reviewed by ___ Date ___

See attachments for description of affected systems and drawings.

I

Final Review by Project Manager

Prior to Issue [signature] Date 9-21-81

1091

DATE OF ISSUE

FDDR NO. KN-1-1012

REVISION 3

SHEET 1 OF 2

FIELD DEVIATION DISPOSITION REQUEST

PROJECT Zimmer 1 Site UNIT 1

EQUIPMENT IMPL OR DESCRIPTION OR BOTH) C41-A001 SBLC Storage Tank

FDDR ORIGINATOR W. H. Heaton DATE 9/16/81

DOCUMENT NO.	SH NO.	REV.	TITLE
762E969P003	1	5	Purchase Part Drawing - Storage Tank

KEI

REQ. NO. G4153

DEVIATION DESCRIPTION

Revision 2 to the FDDR would have required boring the I.D. of the pipe. This is difficult to perform per the constructor. Therefore, the revised design proposed is per this FDDR KN-1-1012 Rev. 3 Sheet 2.

SITE IMPACT: Needed prior to pre-op testing.

SITE QC CONCURRENCE M. M. Dick MM Dick DATE 9-17-81 FIELD CONCURRANCE T. E. Bloom T. E. Bloom 9-17-81 DATE

☐ SUGGESTED DISPOSITION ☒ EXPEDITED DISPOSITION

Engineering is to advise acceptability of the revised nozzle detail per sheet 2.

COST ACCOUNTING: All costs CG&E

DISPOSITION NEED DATE FW 8143

EXPEDITED DISPOSITION APPROVAL BY Per telecon: T. E. Bloom, H. T. Larkin, J. V. Festa, J. C. Walker 9/17 DATE 81

INAL DISPOSITION

Note that this is an ASME XI repair, and must be in accordance with that code.

COPY

ECA/ECN FDI NO.

JUSTIFICATION OF DISPOSITION DECISION (SAFETY, RELIABILITY)

DESIGN VERIFICATION STATEMENT

VERIFIED BY DATE

APPROVALS	DATE
QUALITY	
MATL APPL ENGR	
LEAD SYSTEM ENGR	
ENGR MANAGER	
RESPONSIBLE ENGR	
PROJECT MANAGER	

DRF NO. IF APPLICABLE

APPROVALS	DATE

THIS EQUIPMENT IS SAFETY RELATED ☐ YES ☐ N
SAFETY FUNCTION IS AFFECTED ☐ YES ☐ N

COMPLETION RECORD REQUIRED BY R. E. ☐ YES ☐ NO

SUPPLIER ACTION REQUIRED ☐ YES ☐ NO

FIELD WORK ORDER NO.

DISTRIBUTION CODE

INTERNAL	EXTERNAL

DISPOSITION COMPLETE DATE I

SITE QUALITY CONTROL

FIELD MANAGER 13916

NFRC 377 (REV 1 1981)

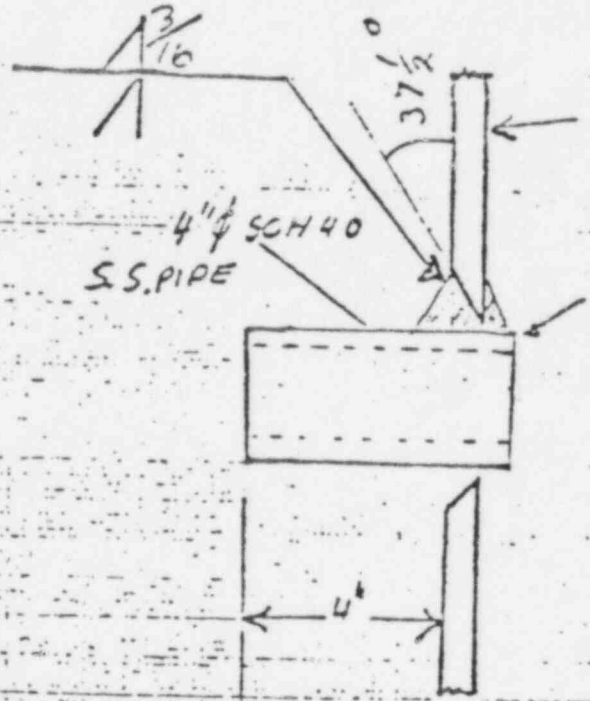
FDDR-KN-1-1012. REV 2
SHEET 2 OF 2

I ALL PORTIONS OF FDDR-KN-1-1012 REV 2. REMAIN UNCHANGED EXCEPT FOR PAGE 10 AS NOTED BELOW.

II DELETE ITEMS 3, 4+5 ON PAGE 10 OF FDDR-KN-1-1012-REV 2

III INSTALL NOZZLE AS BELOW.

COPY



REVIEWED FOR
WM. H. ZIMMER NUCLEAR POWER STATION
UNIT 1
THE CINCINNATI GAS & ELECTRIC COMPANY
COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY
THE DAYTON POWER & LIGHT COMPANY
SARGENT & LUNDY ENGINEERS

1. [X] NO EXCEPTION TAKEN. CONTRACTOR CAN PROCEED WITH FABRICATION OR CONSTRUCTION.
2. [ ] CONTRACTOR CAN PROCEED BASED ON MAKING REVISIONS NOTED AND RESUBMIT.
3. [ ] REVISE AS NOTED AND RESUBMIT. HOLD FABRICATION.

ANY ACTION SHOWN HEREIN IS SUBJECT TO THE TERMS OF THE CONTRACT AND DOES NOT RELIEVE CONTRACTOR FROM HIS OBLIGATIONS UNDER THE CONTRACT, INCLUDING DESIGN AND DETAILING.

FOR REACTOR I
EQUIPMENT NO. C41-A001
BY DATE 9-21-81 149
SPEC. NO. M-2210 PROJ. NO. 4130

No. 3702 THIS CARD DaPLACES VOID CARD 3.147

KAISER ENGINEERS, INC.

Wm. H. ZIMMER NUCLEAR POWER STATION – WELD DATA SHEET

(See reverse side for instructions & responsibilities)

Field Weld No. SC-K55

System or Component STANDBY LIQUID CONTROL ISO DWG No. PSK SC-1 Line No. 1SC01AA MK# IC41A001 TANK To MK# PIPE

Base Mat'l SA 304 To SA 304 Nom. Pipe Size 4" Nom. Wall Thks. .237 /Fillet Size Vito Reinf. Project Spec. M-2256

Code Class B Welding Procedure No. ~~3rh-5P~~ 3.1.34 WPS 10-5-81 Special Instructions BACK GRIND RAD. DLH 10-5-81 LRB 10/5/81

Filler Material Requirement:

Electrode Type ER308/E-308 Bare/Covered - Size 3/32 HT#/Lot# C3058 Size 1/8 HT#/Lot# _____ Size _____ HT#/Lot# _____

Consumable Insert N/A HT No. N/A Backing Ring N/A HT# N/A

Purge Req.: I.D. Purge N/A CFH N/A Torch Purge X CFH 13-15

Heat Treat Requirements:

Preheat Temp Req. 60 °F MIN Interpass Temp Req. 350 °F MAX Post Weld Req. N/A Procedure N/A

COPY

Fit-Up / Installation / NDE Requirements:

Instructions:	Req.	QA Stamp	Date	AI Hold Pts.	Record/Remarks
(1) Verify, proper weld procedure, welders qualif., proper filler mat'l., proper C.I./B.R.	X	29 KEI QA 73	10/6/81		
(2) Verify proper bevels, details for, cleanliness, damage. Verify Mark No.'s	X	29 KEI QA 73	10/6/81		Record TANK MK No. IC41A001 to MK No. PIPE
(3) Verify proper fit up, Insp. tack welds.	X	29 KEI QA 73	10/6/81		
(4) NDE: Examine weld edge preparation surface	MT PT RT Other	N/A			
(5) NDE: ROOT PASS (visually examine I.D. surface were accessible) I.D. tools req'd	MT PT RT Other	PAT	10/8/81		Verify Preheat Temp ≥60°F
(6) NDE: INTERPASS	MT PT Other				Verify Interpass Temp 250°F ≥ ≥ 60°F
(7) NDE: FINAL PASS Prior to PWHT.	MT PT UT Other	KEI QA 73	10/12/81		VISUAL PER SPEC 4.6 RUT
(8) NDE: RT prior PWHT	RT	N/A			
(9) POST WELD HEAT TREAT. Verify Record Time/Temp.	N/A				Attach Time/Temp. Recordings
(10) NDE	V	KEI QA 73	10/12/81		

Instructions:	Req	QA Stamp	Date	AI Hold Pts.	Record/Remarks
(11) NDE: FINAL RT UT	NH X	K 1.1.1			
(12) Verify welders I.D. on weld joint. (record welder's symbol)					
(13) Tack Symbol KHF	(14) Root Layers Symbol KHF		(15) Intermediate Layers Symbol KHF		
(16) Symbol	(17) Symbol		(18) Final Symbol KHF		
(19) Verify Ferrite Content. (where applicable)					Record Range
(20) 1st Repair Ref. WRD No. _____					
(21) 2nd Repair Ref. WRD No. _____					
(22) 3rd Repair Ref. WRD No. _____					Note: If 3rd repair is not acceptable, refer to Review Board Action. Attach Copy NR.

APPROVALS:

KAISER ENGINEERS, INC.

LIQUID PENETRANT: TEST REPORT

[ ] Shop [X] Field PURCHASE ORDER 7070 #60589 REPORTED BY B. Ashcraft Fehler DATE 10-12-81

CG&E, Columbus and Southern Ohio Electric, Dayton Power and Light Company | Stand By Liquid Control | 5/5

237 | N/A | ASME Section III | S&L 112236 | 100%

As welded | Spotcheck by Magnaflux Corporation. [X] SOLVENT-REMOV

Spotcheck by Magnaflux Corporation | KEL SPEC 4.2 Rev.3 | B. Ashcraft Fehler

PIECE OR JOINT NUMBER	Reference Drawing ISO or PBK	INDICATE SIZE AND LOCATION (Use Sketch If Necessary)	ACCEPT	REJECT	REPAIRED	BRIEFLY DESCRIBE INDICATIONS
+ANK IC-1/AQOL 1 TO PIPE 1SC01A4	SC-1	PT'd I.D. AND O.D. welds	X			
SC-K55						COPY
		P.T. ACC. P.T. ACC.				
91	7					

HENRY J. KAISER CO.
Moscow, Ohio 45153

CORRECTIVE ACTION REPORT

Date: 4-6-82	C.A.R. No. 089	Page 1 of 1
To: M. Albertin M. Goedecke	Organization: HJK	Location: RH & HPCI Core Spray & Mainsteam & Feedwater Piping

Requirements:

ASME Section III Table NB-4622.1.1 requires postweld heat treatment for pipe wall thickness over 3/4 inch thickness, except when such material is preheated to a minimum of 200°F. (Provided carbon content is not more than 0.30% and tensile strength not exceeding 70,000 PSI and material thickness is less than 1½ inch).

Item No.	Description of Adverse Condition
1	Welds were preheated to 150°F for first 3/16" of welding and 300°F for balance of thickness.

Originated By:	Title:	Date:	Approved By:	Title:	Date:
[illegible]	HTV QE	4/6/82	[illegible]	S&A Mgr.	4/6/82

Item No.	Corrective Action Statement	Completion Date

Corrective Action Statement - Prepared By: _____ Title _____ Date: _____

Corrective Action Follow-up and Verification:

Attachment 'J'

Accepted by Originator: Date:	Accepted by QA Manager Date:

FORM NO. TF216/2-82/Rev.1

HENRY J. KAISER, CO.
WM. H. ZIMMER POWER STATION

NO. E-3633 RI NONCONFORMANCE REPORT PAGE 1 OF 2

1. DWG/INSTALLATION NO.	2. DWG/INSTALLATION NAME:	3. PO/CONTRACT NO.	4. SUPPLIER/CONTRACTOR NAME:
See Below	PIPE	7070-22506	Labarge, Inc.
5. INSPECTION PLAN NO.:	**6. ORIGINATOR:**	**7. DATE:**	**8. SPECIFICATION NO.** / ASME
QAW 114	J. Deerwester	9-23-81/2-4-82	SA-106 / YES ☒ NO

9. DESCRIPTION OF NONCONFORMANCE	10. DISPOSITION	11. DISPOSITION INSTRUCTIONS/JUSTIFICATION
REQUIREMENTS: Essential/ASME code Section III & XI must be purchase from an approved supplier.	ACCEPT AS IS	PER QAP (QUALITY ASSURANCE PROCEDURE) NO. 6 REV. 7 PARA. 3 ALL ASME CODE PURCHASES SHALL BE MADE ONLY FROM SUPPLIERS WHO APPEAR ON THE APPROVED SUPPLIER LIST FOR ASME EQUIPMENT AND MATERIAL.
FAULT: Material on this purchase order was supplied by Labagre, Inc. Tubular Division 20 South Fourth Street St. Louis, Missouri. Not an approved HJK Vendor for supplier of ASME code material. On date the above purchase order was given them, HJK received the following pipe on Material received Report 39739.		(SEE NEXT PAGE FOR CONTINUATION)
20.42'-2 1/2" sch. 40 SMLS SA 106 Gr. B Pipe Code cl.1		
230.67'-4" sch. 40 SMLS SA 106		

12. REVIEW BOARD (REQUIRED ON ALL ACCEPT/REPAIR DISPOSITIONS)

ANI	DATE	NPD	DATE			HJK CONSTRUCTION ENGR.	DATE
S&L	DATE	CG&E NED ENGR	DATE	CG&E	O.E. DATE	HJK	O.E.
	2-17-82		2/23/82		3/2/82		2/17/82

13. REPAIR/REWORK COMPLETE AND ACCEPTABLE

ORIGINATOR DATE

14. CAUSE

15. CORRECTIVE ACTION

Attachment "K"
Page 1 of 8

CAR NO (IF APPLICABLE) _____

KAISER FIELD (7), CG&E (4), S&L (1), A.I. (1), QA FILES (ORIG.) C/N 6991

HJKCO FORM NO.

WM. H. ZIMMER NUCLEAR POWER STATION — NO. NR-E-3633 Rev. 1 PAGE 2 OF

9. Description of Nonconformance	10. Disposition	11. Disposition Instruc. & Justifica
Gr. B Pipe code cl.1		THE MATERIALS DESCRIBED ON NR-E-3633 WERE FURNISHED B LA BARGE INC. ON 8/11/77 (LIS ON APPROVED VENDOR LIST SI 6/28/73 FOR ESSENTIAL/NON-COD MATL SUPPLIER). HOWEVER, THE MA WERE ACTUALLY MANUFACTURED A SUPPLIED BY YOUNGSTOWN SHEET TUBE CO. (LISTED IN AVL SINCE FOR ASME SECTION III MATL SUPP AND JONES & LAUGHLIN CO. (LIST IN AVL SINCE 5/3/76 FOR ASM SECTION III CLASS 1, 2, 3, MATL SUPPLIER).
HJK warehouse has following amount in stock.		
17'-2 1/2" sch. 40 SMLS SA 106 Gr.B Pipe code CL.1		
190'-4" sch. 40 SMLS SA-106 Gr.B Pipe Code CL.1		
The manufacturer of 2 1/2" pipe was Youngstown Sheet and Tube Co. Campbell Works and the 4" pipe was manufactured by Jones & Laughlin-Aliquippa, PA. Both above manufactures were on HJK's approved vendor's list at time of purchase. manufacturers certifications on file in site document center.		IN ADDITION, THE SUBJECT MATL BEEN DOCUMENTED WITH CERTIFI OF THE MATERIALS TEST REPO IN ACCORDANCE WITH ASME SA-106 GR.B MATL SPEC.
		THEREFORE, THE CORRECTIVE ACT OF NR-E-3633 REV. 1 IS ACCEPT AS IS.
		K
		298
	C/N 6591	

ADDRESS ALL CORRESPONDENCE TO
KAISER ENGINEERS, INC.
PROCUREMENT DEPARTMENT

P. O. BOX 201
MOSCOW, OHIO 45153

KAISER ENGINEERS, INC.

Agent For
The Cincinnati Gas & Electric Company
Columbus & Southern Ohio Electric Company
and The Dayton Power and Light Company

PURCHASE ORDER NO. 7070-22506

SHEET 1 OF 2 SHEETS

THIS ORDER NUMBER MUST APPEAR ON ALL INVOICES, PACKAGES, PACKING SLIPS, BILLS OF LADING, ETC.

Date: 7-19-77

SELLER

LaBarge, Inc.
Tubular Division
20 South Fourth Street
St. Louis, Missouri 63102

Attention:
Phone: (314) 231-3400

Ship To

Kaiser Engineers, Inc.
Kaiser Receiving Warehouse
U. S. Route 52
Moscow, Ohio 45153

Ship Via:

THIS PURCHASE ORDER IS ISSUED TO SELLER SUBJECT TO ALL CONDITIONS AND INSTRUCTIONS SET FORTH HEREIN AND TO THE CONTENTS OF THE FOLLOWING EXHIBITS ATTACHED HERETO AND BY THIS REFERENCE MADE A PART HEREOF:

EXHIBIT "A" – SPECIFICATION NO.
EXHIBIT "B" – TERMS AND CONDITIONS
EXHIBIT "C" – SHIPPING INSTRUCTIONS

WORK ORDER NO. 57300

ITEM NO.

SHIP DATE: 8-2-77

POINT OF ORIGIN: J & L Mill

TERMS OF PAYMENT: 2% 10, Net 30

F.O.B. POINT: Jobsite, Moscow, Ohio

PRICE POLICY: Firm

WEIGHT:

CUBE:

ITEM NO.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL	ACCOUNT NO.
			Stock Material For Various Piping Systems Per S&L Spec H-2256			
			Seller shall furnish and deliver c.s. pipe in the quantities shown and in accordance with specifications on the attached Procurement Specification Sheet number 7023 which is by this reference made a part hereof.			6911.9610.31
			All material contained in this order shall be manufactured by J & L Steel Corporation, Aliquippa & Pittsburgh, Pennsylvania, a Purchaser approved supplier.			
			SALES OR USE TAX EXEMPTION		TOTAL OF ORDER	$ 1690.00

ESSENTIAL

INSPECT TO INSTRUCTION
KEI QAN 114
QAE [signature] 7-25-77

QA APPROVED
FOR SHIPMENT INSPECTION
[signature] 7-25-77

THE PRICES SPECIFIED IN THIS PURCHASE ORDER INCLUDE ALL PRESENT, FUTURE, FEDERAL, STATE OR LOCAL TRANSPORTATION TAXES AND ALL OTHER TAXES PERTAINING TO THE TRANSACTION, EXCEPT ONLY SUCH TAXES AND TAX RATES AS ARE SPECIFICALLY SET FORTH AS PURCHASER OBLIGATIONS HEREIN. PURCHASER IS TO PAY ONLY SUCH TAXES AS ARE LEGALLY IMPOSED ON PURCHASER AND WHICH SELLER IS REQUIRED TO COLLECT FOR THE ACCOUNT OF THE STATE OF OHIO OR THE CINCINNATI GAS & ELECTRIC COMPANY, THE COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY OR THE DAYTON POWER AND LIGHT COMPANY AND WHICH ARE DUE TO THE TAXING AUTHORITY UPON THE SALE OR DELIVERY OF THE MATERIAL.

REQ. NO. 24476 SPEC. NO. H-2256

PROJECT ENGINEER: D. Holland

SSS:wp 7-25-77

INVOICE PURCHASER AND MAIL Five (5) COPIES WITH ORIGINAL BILL OF LADING TO:

Kaiser Engineers, Inc.
P.O. Box 201
Moscow, Ohio 45152

PURCHASER
KAISER ENGINEERS, INC.

Agent For
The Cincinnati Gas & Electric Company
Columbus & Southern Ohio Electric Company
and The Dayton Power and Light Company

AUTHORIZED SIGNATURE

Procurement Manager

KAISER ENGINEERS	PROCUREMENT SPECIFICATIONS		7023 SHEET NO. 21
FOREIGN MATERIALS NOT ACCEPTABLE	PURCHASE FROM APPROVED VENDOR	REQ'D DATE REQ. NO. 7070	P.O. DATE P.O. NO. 7070

Pipe, seamless, black carbon steel, per ASME SA106, Gr. B with plain ends protected with taped on plastic end cap seals. Materials and certification must comply with all requirements of Section III of the ASME Code, Article NB2000 (Code Class I) in its entirety including any references therein as applicable and with all requirements of Sargent and Lundy Standard Specification Forms 274-C and 405-C. Complete Mill test certificates per the specifications, including but not limited to chemical analysis, mechanical properties, bending properties, heat treat, ultrasonic tests and hydro test (referencing Kaiser P.O. and item no.) shall be furnished in accordance with ASME Section III, Paragraph NA3766.4 with shipment of material. Marking shall include the manufacturer's name or brand, heat number, spec and grade, hrydro test pressure, pipe schedule and any other marking called for in the ASME Code & S&L specs. Marking shall run continuous along length of pipe. Color Code marking shall consist of two continuous longitudinal 1/8" wide orange stripes. The color code marking shall be on the opposite side to the manufacturer's marking. Pipe shall be unpainted on the interior surfaces. No foreign materials acceptable.

COPY

NUCLEAR OR ANSI CLASS A	ASME CODE CLASS 1 AEC CLASS Essential	CHEMICAL & PHYSICAL CERTIFIED TEST REPORT	ULTRASONIC TEST REPORT	HYDRO TEST REPORT
CERTIFICATION BY MATERIALS MANUFACTURER	CERTS IDENTIFIED TO P.O. BY ITEM NO.	CONTINUOUS MARKING SPECS-HEAT NO.-ETC.	COLOR CODE MARKING	

ITEM	QTY	UNIT	SIZE	SCHED.	MATERIAL DESCRIPTION & SPEC.	COLOR CODE	CROSS REF. OR DWG.	STOCK NO	$ UNIT	$ TOTAL
		LF	1/8	40	.068 Wall Pipe-ASME	2-Orange	-	7023-120		
		LF	1/4	40	.088 " (SA 106. Gr. B)	"	-	-140		
		LF	3/8	40	.091 " (ASME Sec III)	"	-	-160		
		LF	1/2	40	.109 " (Class I)	"	-	-170		
		LF	3/4	40	.113 " "	"	-	-190		
		LF	1"	40	.133 " "	"	-	-210		
		LF	1¼	40	.140 " "	"	-	-220		
		LF	1½	40	.145 " "	"	-	-230		
		LF	2	40	.154 " "	"	-	-255		
1	20	LF	2½	40	.203 " "	"	-	-270		
		LF	3	40	.216 " "	"	-	-290		
		LF	3½	40	.226 " "	"	-	-310		
2	220	LF	4	40	.237 " "	"	-	-325		
		LF	5	40	.258 " "	"	-	-350		
		LF	6	40	.280 " "	"	-	-375		
		LF	8	40	.322 " "	"	-	-400		
		LF	10	40	.365 " "	"	-	-450		
		LF	12	40	.406 " "	"	-	-550		
		LF	14	40	.438 " "	"	-	-600		
		LF	16	40	.500 " "	"	-	-625		
		LF	18	40	.562 " "	"	-	-650		
		LF	20	40	.594 " "	"	-	-675		
		LF	22		" "	"	-	-700		
		LF	24	40	.688 " "	"	-	-725		

for [illegible] DATE 7-15-71 SHEET NO. 7

K
4 of 8

Date: 3/25/26/76

INVOICE NO.	CAR NUMBER
32-8-5431	I&LE 19561
32-8-5433	"
32-8-5454	Mormor Cont.

J&L STEEL

☐ ALIQUIPPA, PA. ☐ PITTSBURGH, PA.

This is to certify the following material has been inspected and tested in accordance with and has met the requirements of the stated specification. We also certify this report is correct as contained in the records of the Corporation.

C.W. Long, 3/31/76

LA LARGE INC., TUBULAR DIV., 20 S. FOURTH ST., ST. LOUIS, MO.

☒ Material has been hydrostatically tested to specification requirements

MILL ORDER NUMBER	CUSTOMER ORDER NUMBER	DESCRIPTION	SPECIFICATION	HEAT NUMBER	YIELD POINT PSI	TENSILE STRENGTH PSI	ELONGATION 2"	REDUCTION AREA	HEAT TREATED	ANALYSIS C	Mn	P	S	Si		HYDRO TEST PRESSURE
263-556632 Partial	7899	J&L SMLS STD BLK LINE PE 3" (3-1/2" O.D.) 7.58# .216	API 5-L Grade B	621018	45940	70790	32.0		K	.23	.67	.010	.025			3/4"
		Ditto	"	153960	51530	76340	29.0			.16	.66	.007	.024			
		Ditto	"	237965	48820	69740	33.0			.22	.80	.020	.020			
		J&L SMLS EX STG BLK LINE PE 3" (3-1/2" O.D.) 10.25#	API 5-L Grade B	233174	42100	69170	32.0			.23	.72	.015	.022			3/4"
263-556674 Camp	7985	J&L SMLS STD BLK PE 4" (4-1/2" O.D.) 10.79# .237	ASTM A-106 Grade B													
			ASME SA 106 Grade B	038581	47110	72970	33.0		OK	.24	.83	.008	.017	.24		
		Ditto	"	238095	51590	76740	38.0		OK	.24	.70	.011	.021	.21		
263-596588 Camp	8083	J&L SMLS STD BLK PE 4" (4-1/2" O.D.) 10.79#	ASTM A-53 Grade B	Lot 144	46000	71280	38.0		OK	.24	.67	.014	.017			

THESE MILL TEST REPORTS APPLY TO:

YOUR P. O. # [illegible]

J BARGE INVOICE # [illegible]

Youngstown

QUALITY CONTROL TEST REPORT

REQ., JOB, CONTRACT NO.

Purch.Order No.
[illegible]

VENDOR: YOUNGSTOWN SHEET AND TUBE COMPANY — Campbell WORKS

Invoice Date: Feb. 27, 1976

Shipper's No.

Invoice No. (s)
[illegible]

Vehicle Identity
PIE 16114

We hereby certify that this report accurately reflects all results of tests performed with respect to the material described hereon as shown by Company records.

YOUNGSTOWN SHEET AND TUBE CO.

BY [illegible] AUTHORIZED SIGNER

STATE OF COUNTY OF

Subscribed and sworn before me

this day of A.D. 19

Notary Public

MY COMMISSION EXPIRES:

SOLD TO: Gulfstream Pipeline Div.
10 S. Hanley St.
St. Louis, Mo. 63102

SHIP TO: Same
#6 Mountain Highway
St. Louis, Mo.

SPEC.
REQ'D.

ITEM NO.	MILL ORDER NO.	MATERIAL DESCRIPTION	QUANTITY	HEAT/LOT NO.	TEST OR PIECE ID	YIELD PSI	TENSILE PSI	% ELONG. 2"	% ELONG. 8"	HYDRO PR. PSI	ZONE	HEAT TREAT	CA SIZE	HARD NESS
	[illegible]-A	Youngstown Seamless API Line Pipe API-5L Grade B Blk PE This material also conforms to spec. ASTM-A-53-Grade B												
	.203" Wall)	[illegible]-7/8"OD 5.79#	117	24666		53220	82340	37		2500		OK		
				24559		48960	78040	37		2500		OK		
		Youngstown Seamless Pipe API-5A-106-74-Grade B Blk PE This material also conforms to spec. ASTM-A-106-Grade B												
B	.203" Wall)	4-7/8"OD 5.79#	122	24666		53220	82340	37		2500		OK		
				31631		56420	77340	35		2500		OK		
C	.375" Wall)	4-7/8"OD 10.01#	52	31582		53150	82490	36		2500		OK		
				31582		52960	80720	36		2500		OK		
				24666		46140	74740	36		2500		OK		

ANALYSIS

HEAT NO.	SAMPLE LCN.	C	Mn	P	S	Si
24559		.23	.93	.007	.024	
31631		.23	1.01	.007	.026	.23
31582		.21	.82	.010	.025	.17
31582		.21	.82	.010	.025	.17
24666		.20	.86	.007	.024	.18

REC'D 04 30

THESE MILL TEST REPORTS APPLY TO:

YOUR P. O. # [illegible]

CHARGE INVOICE # [illegible]

869 X

INDUSTRIAL TESTING LABORATORIES inc.

2350 Seventh Blvd. • St. Louis, Missouri 63104

Chemists
Engineers
Metallurgists
314/PRospect 1-7111

Report No. 77-8-221 NR-E-3633 PAGE 7 OF 10 August 16, 1977

Ultrasonic examination of seamless black steel pipe ASME SA-106 Grade B.

LaBarge Inc.
Tubular Division
20 South Fourth Street
St. Louis, Missouri 63102

P. O. 3966 DWP
Attn: Mr. Doyle Perry

COPY

The following lengths of ASME SA-106 Grade B pipe were examined by shear wave ultrasonic techniques in accordance with the requirements of ASME Boiler and Pressure Vessel Code, Section III, paragraph NB-2550. The results obtained during the examinations of July 29 - August 4, 1977 were as follows:

UT REPORT

Size	Heat Number	Number of Pieces	Total Length	Results
1/2" Sch. 160	JE9922	4	76'0"	Satisfactory
1" Sch. 80	JC 1646	1	24'0"	Satisfactory
2-7/8" x .203"	31582	1	20'5"	Satisfactory
3-1/2" x .216"	32138	1	21'1"	Satisfactory
3-1/2" x .303"	25468	1	19'8"	Satisfactory
4" x .226"	L40851	1	20'1"	Satisfactory
4" x .318"	238095	1	20'4"	Satisfactory
4-1/2" x .237"	338581	13	243'0"	Satisfactory
4-1/2" x .337"	N13728	1	20'8"	Satisfactory

REC'D 8-23-77

THESE MILL TEST REPORTS APPLY TO:
YOUR P. O. # DDO-22506
LA BARGE INVOICE #

K
798

INDUSTRIAL TESTING LABORATORIES inc.

Chemists
Engineers
Metallurgists

2350 Seventh Blvd. • St. Louis, Missouri 63104

314/PRospect 1-7111

Report No. 77-8-221

NR-E-3633 PAGE 8 OF 10

Size	Heat Number	Number of Pieces	Total Length	Results
5-9/16" x .258"	334663	1	20'0"	Satisfactory
5-9/16" x .375"	N33067	1	21'4"	Satisfactory
6-5/8" x .280"	N54126	1	22'2"	Satisfactory
6-5/8" x .432"	425636	1	22'0"	Satisfactory
8-5/8" x .322"	25379	1	24'2"	Satisfactory
8-5/8" x .500"	25987	1	20'4"	Satisfactory
10-3/4" x .365"	137806	1	24'4"	Satisfactory
10-3/4" x .594"	337083	1	20'0"	Satisfactory
12-3/4" x .406"	L22928	2	19'2"	*Unsatisfactory
12-3/4" x .688	L05055	1	21'4"	Satisfactory

The items noted as satisfactory revealed no defect indications in excess of the 5% wall thickness calibration standard notch indications.

*Unsatisfactory item possessed surface laminations along entire length.

Respectfully submitted,

INDUSTRIAL TESTING LABORATORIES, INC.

Allan M. Siegel

Allan M. Siegel, P.E.
Director

JTS/ps

UT REPORT

K
888

ADDRESS ALL CORRESPONDENCE TO
KAISER ENGINEERS, INC.
PROCUREMENT DEPARTMENT

P. O. BOX 201
MOSCOW, OHIO 45153

KAISER ENGINEERS, INC.

Agent for
The Cincinnati Gas & Electric Company
Columbus & Southern Ohio Electric Company
and The Dayton Power and Light Company

PURCHASE ORDER NO. 7070-17638

SHEET 1 OF 3 SHE

THIS ORDER NUMBER MUST APPEAR ALL INVOICES, PACKAGES, PACKIN SLIPS, BILLS OF LADING, ETC.

Date: 6/22/76

SELLER	Ship To:
LaBarge, Inc. Tubular Division 20 South Fourth Street St. Louis, Missouri 63102	Kaiser Engineers, Inc. Kaiser Receiving Warehouse U.S. Route 52 Moscow, Ohio 45153
Attention: Doyle Perry Phone: (800) 325-3363	Ship Via:

THIS PURCHASE ORDER IS ISSUED TO SELLER SUBJECT TO ALL CONDITIONS AND INSTRUCTIONS SET FORTH HEREIN AND TO THE CONTENTS OF THE FOLLOWI EXHIBITS ATTACHED HERETO AND BY THIS REFERENCE MADE A PART HEREOF:

EXHIBIT "A" – SPECIFICATION NO.
EXHIBIT "B" – TERMS AND CONDITIONS
EXHIBIT "C" – SHIPPING INSTRUCTIONS

WORK ORDER NO. 57300

ITEM NO.

SHIP DATE: W/O 7/5/76

POINT OF ORIGIN: St. Louis, Missouri

TERMS OF PAYMENT: 2% 10, Net 30 days

F.O.B. POINT: Jobsite

PRICE POLICY: Firm

WEIGHT:

CUBE:

ITEM NO.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL	ACCOUNT NO.
			Carbon Steel Pipe - Spec. H-2256 (ASME Cl. 2/AEC Cl. Essential) Furnish and deliver carbon steel pipe in accordance with the attached procurement specification sheets 7010 and 7020. All material on this order must be furnished and certified by Gulf States Tube Corp., an approved Kaiser Engineers supplier. CONFIRMING—DO NOT DUPLICATE Packing List Must Be Included With Each Shipment All goods furnished under this order shall fully comply with all applicable health and safety laws, rules, and regulations including without limitation the Occupational Safety & Health Act of 1970 and the rules and regulations promulgated pursuant thereto. SALES OR USE TAX EXEMPTION			6911.9610.31

ESSENTIAL

INSPECT TO INSTRUCTION
KEI. QAW 114
QAE [signature] 7-2-76

QA APPROVED
QA RECEIVING INSPECTION
☑ REQUIRED ☐ NOT REQUIRED
[signature] 7-2-7
KEI QA ENGINEER

THE PRICES SPECIFIED IN THIS PURCHASE ORDER INCLUDE ALL PRESENT, FUTURE, FEDERAL, LOCAL, EXCISE AND TRANSPORTATION TAXES AND ALL OTHER TAXES PERTAINING TO THE TRANSACTION, EXCEPT THE OHIO SALES AND USE TAX WHICH WILL BE ACCOUNTED FOR BY PURCHASER UNDER ITS DIRECT PAYMENT PERMITS (EXCEPT 88 ISSUED TO THE CINCINNATI GAS & ELECTRIC COMPANY; 88 ISSUED TO COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY; AND 88 ISSUED TO THE DAYTON POWER AND LIGHT COMPANY).

	TOTAL OF ORDER	$2,214.00

REQ. 7070-19563 SPEC. NO.

PROJECT ENGINEER C. L. Christensen

RAD:jw 6/29/76

INVOICE PURCHASER

AND MAIL Five (5) COPIES WITH

ORIGINAL BILL OF LADING TO:

Kaiser Engineers, Inc.
P.O. Box 201
Moscow, Ohio 45153

PURCHASER
KAISER ENGINEERS, INC.
Agent for
The Cincinnati Gas & Electric Company
Columbus & Southern Ohio Electric Company
and The Dayton Power and Light Company

Attachment 19

AUTHORIZED SIGNATURE

KAISER ENGINEERS	PROCUREMENT SPECIFICATIONS		7010 SHEET NO.
FOREIGN MATERIALS NOT ACCEPTABLE	PURCHASE FROM APPROVED VENDOR	REQ'D DATE REQ. NO. 7070-18563	P.O. DATE 6/22/76 P.O. NO. 7070-17688

Pipe, seamless, black carbon steel per ASME SA106, Gr. B with plain ends protected with taped on plastic end cap seals. Materials and certification must comply with all requirements of Section III of the ASME Code, Article NC 2000 (Code Class 2) in its entirety including any references therein as applicable and with all requirements of Sargent & Lundy Standard Specification Forms 274-C and 405-B. Complete mill test certificates (referencing Kaiser P.O. and Item No.) per specifications including but not limited to chemical analysis, mechanical properties, bending properties and hydrotest shall be furnished in accordance with ASME Section III, Paragraph NA 3766.4 with shipment of material. Marking shall include the manufacturer's name or brand, heat number, spec. and grade, hydrostatic test pressure, pipe schedule and any other marking called for in the ASME Code and S&L Specifications. Marking shall run continuous along length of pipe. Color code marking shall consist of one continuous longitudinal 1/8" wide orange stripe with one 1" long x 1/8" wide perpendicular cross stripe spaced at 1'-0" intervals for designating pipe schedule. The color code marking shall be on the opposite side of the pipe to the manufacturer's marking. No foreign materials acceptable. Pipe shall be unpainted on the interior surfaces.

NUCLEAR OR ANSI CLASS B	ASME CODE CLASS 2 AEC CLASS ESSENTIAL	CHEMICAL & PHYSICAL CERTIFIED TEST REPORT	CERTIFICATION BY MATERIALS MANUFACTURER
CERTS IDENTIFIED TO P.O. BY ITEM NO.	HYDRO TEST	CONTINUOUS MARKING SPECS - HEAT NO. - ETC.	COLOR CODE MARKING

ITEM	QTY	UNIT	SIZE	SCHEDULE	MATERIAL DESCRIPTION & SPEC.	COLOR CODE	FROM DWG. NO.	STOCK NO.	$ UNIT	$ TOTAL
		LF	1/8"	80	.095" (Pipe ASME SA106)	1-Orange	1	7010-120		
		"	1/4"	80	.119" (Gr. B ASME)	"	1	" -140		
		"	3/8"	80	.126" (Sect. III Cl. 2)	"	1	" -160		
		"	1/2"	80	.147" Wall "	"	1	" -170		
		"	3/4"	80	.154" Wall "	"	1	" -190		
		"	1"	80	.179" Wall "	"	1	" -210		
1.	200	"	1¼"	80	.191" Wall "	"	1	" -220	$1.73	$ 346.
2.	800	"	1½"	80	.200" Wall "	"	1	" -230	2.06	1,648.
		"	2"	80	.218" Wall "	"	1	" -255		
		"	2½"	80	.276" Wall "	"	1	" -270		
		"	3"	80	.300" Wall "	"	1	" -290		
		"	3½"	80	.318" Wall "	"	1	" -310		
		"	4"	80	.337" Wall "	"	1	" -325		
		"	5"	80	.375" Wall "	"	1	" -350		
		"	6"	80	.432" Wall "	"	1	" -375		
		"	8"	80	.500" Wall "	"	1	" -400		
		"	10"	80	.593" Wall "	"	1	" -450		
		"	12"	80	.687" Wall "	"	1	" -550		
		"	14"	80	.750" Wall "	"	1	" -600		
		"	16"	80	.843" Wall "	"	1	" -625		1
		"	18"	80	.937" Wall "	"	1	" -650		
		"	20"	80	1.031" Wall "	"	1	" -675		295
		"	22"	80	" Wall "	"	1	" -700		
		"	24"	80	1.218" Wall "	"	1	" -725		

BY DATE SHEET NO. 751

KAISER ENGINEERS	PROCUREMENT SPECIFICATIONS		7020 SHEET NO. 3
FOREIGN MATERIALS NOT ACCEPTABLE	PURCHASE FROM APPROVED VENDOR	REQ'D DATE REQ. NO. 7070 -18563	P.O. DATE 6/22/76 P.O. NO. 7070 -17688

Pipe, seamless, black carbon steel per ASME SA106, Gr. B with plain ends protected with taped on plastic end cap seals. Materials and certification must comply with all requirements of Section III of the ASME Code, Article NC 2000 (Code Class 2) in its entirety including any references therein as applicable and with all requirements of Sargent & Lundy Standard Specification Forms 274-C and 405-B. Complete mill test certificates (referencing Kaiser P.O. and Item No.) per specifications including but not limited to chemical analysis, mechanical properties, bending properties and hydrotest shall be furnished in accordance with ASME Section III, Paragraph NA 3766.4 with shipment of material. Marking shall include the manufacturer's name or brand, heat number, spec, and grade, hydrostatic test pressure, pipe schedule and any other marking called for in the ASME Code and S&L specifications. Marking shall run continuous along length of pipe. Color code marking shall consist of one continuous longtudinal 1/8" wide orange stripe with four 1" long x 1/8" wide perpendicular cross stripes spaced at 1'-0" intervals for designating pipe schedule. The color code marking shall be on the opposite side of the pipe to the manufacturer's marking. Pipe shall be unpainted on the interior surfaces. No foreign materials acceptable.

NUCLEAR OR ANSI CLASS B	ASME CODE CLASS 2 AEC CLASS Essential	CHEMICAL & PHYSICAL CERTIFIED TEST REPORT	CERTIFICATION BY MATERIALS MANUFACTURER
CERTS IDENTIFIED TO P.O. BY ITEM NO.	HYDRO TEST	CONTINUOUS MARKING SPECS-HEAT NO.-ETC.	COLOR CODE MARKING

ITEM	QTY	UNIT	SIZE	SCH.	MATERIAL DESCRIPTION & SPEC.	COLOR CODE	STOCK NO.	$ UNIT	$ TOTAL
		LF	1/8"		Pipe ASME SA106	1-Orange	4 7020-120		
		LF	1/4"		Gr. B ASME	"	4 -140		
		LF	3/8"		Sect. III Cl. 2	"	4 -160		
		LF	1/2"	160	.187" Wall "	"	4 -170		
		LF	3/4"	160	.218" " "	"	4 -190		
		LF	1"	160	.250" " "	"	4 -210		
3.	100	LF	1¼"	160	.250" " "	"	4 -220	$2.20	$220.00
		LF	1¼"	160	.281" " "	"	4 -230		
		LF	2"	160	.343" " "	"	4 -255		
		LF	2½"	160	.375" " "	"	4 -270		
		LF	3"	160	.438" " "	"	4 -290		
		LF	3½"	160	" "	"	4 -310		
		LF	4"	160	.531" " "	"	4 -325		
		LF	5"	160	.625" " "	"	4 -350		
		LF	6"	160	.718" " "	"	4 -375		
		LF	8"	160	.906" " "	"	4 -400		
		LF	10"	160	1.125" " "	"	4 -450		
		LF	12"	160	1.312" " "	"	4 -550		
		LF	14"	160	1.406" " "	"	4 -600		
		LF	16"	160	1.593" " "	"	4 -625		
		LF	18"	160	1.781" " "	"	4 -650		
		LF	20"	160	1.968" " "	"	4 -675		
		LF	22"	160	2.125" " "	"	4 -700		
		LF	24"	160	2.312" " "	"	4 -725		

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3495

Copy of Ack to:
L. Wyckoff

Jack Decrueser

PRICES ON THIS PRINTED REQ'S NO. 222 CH.

GULF STATES TUBE CORPORATION

Rosenberg, Texas 1021

16

(9)

OUR ORDER NO.	CUSTOMER ORDER NO.	DATE	DIV.	REGN	ACCT. NO.	INV.	P.R.
66275-66276	6589	4-1-74	59	01	20 - 01 00352005LES	4	5

SOLD: LaBarge Tubular Div.
7501 South Broadway
St.Louis, Missouri 63111

TO #6589

SHIP: LaBarge Tubular Div.
121 East Koeln
St.Louis,Missouri

TO

REQUESTED: Week of 11-25-74 from MO 64696-96

ROUTING: Ppd. - best way - block bottom of load with 4 X 4's and strip out the balance with at least 2 x 4's.

ANALYSIS ANNEAL OR SPEC. MARKING: .25 Max Carbon - Seamless - per ASTM/ASME SA-106 Grade B - plain ends - lacquer coat - test reports.

PROMISED: 11-25

THESE MILL TEST REPORTS APPLY TO:

YOUR P. O. # 7070-17688 Item #3 R&W 1-14-82 HF

LA BARGE INVOICE # 93638

JUL 15 1976 KAISER ENGINEERS, INC. PROCUREMENT DEPT.

ITEM	QUANTITY	O.D.	I.D.	WALL		WT/FT	WEIGHT	BAL
13	4805'	1.660" 1-1/4" Sch. 160		.250"	Rdm. 17' - 24'	3.765	18,090	Co
14	3723'	1.900" 1-1/2" Sch. 160		.281"	Rdm. 17' - 24'	4.859	18,090	Co

CHEMICAL ANALYSIS (Average Ladle Analysis)

HEAT NO.	C	MN	P	S	SI	NI	CR	MO	V	CU	REMARKS
JA-0954	.20	.70	.013	.019	.17						Item 13
KA-2097	.20	.76	.014	.016	.17						Item 13
JE-9314	.20	.78	.011	.012	.18						Item 14

PHYSICAL TEST

ULT. STR PSI	YIELD PSI	ELONGATION 2"	FLANGE	HYDRO TEST	ROCKWELL NO	REMARKS
74600	47100	55.0 Item 13		2500 psi	OK	Bend OK
67000	43700	50.0 Item 13		2500 psi	OK	Bend OK
77400	48900	47.0 Item 14		2500 psi	OK	Bend OK

33 7-16-74

L 485

I HEREBY CERTIFY THAT THE FACTS SET FORTH HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

METALLURGIST

SWORN TO AND SUBSCRIBED BEFORE ME THIS 12 th DAY OF December 19 74

Copy of ACK to Bill Wyckoff

GULF STATES TUBE CORPORATION

Rosenberg, Texas 1021

PRICES ... THI
PRINTED REGUL
NO. 222 CH. 1

16

OUR ORDER NO.	CUSTOMER ORDER NO.				ACC NO	INV	TAX
66539-66541	7231	10-23-74	59 01	20 - 01	00352005LES	4	5

SOLD TO: LaBarge Tubular Div.
7501 South Broadway
St. Louis, Missouri 63111

SHIP TO: LaBarge Tubular Div.
7501 South Broadway
St. Louis, Missouri

REQUESTED: Feb, 1975 Allocatio

ROUTING: PPd. - best way / block bottom of load with 4 x 4's and strip out the bal. with at least 2 x 4's.

ANALYSIS ANNEAL OR SPEC. MARKING: .25 Max Carbon - Seamless pressure pipe p... SA-106 - Grade B - plain ends - lacquer ... reports.

PROMISED: X

Item # 2
RLJ
1-14-82

THESE MILL TEST REPORTS APPLY TO:

YOUR P. O. # 7070- 17688

LA BARGE INVOICE # 93638

JUL 15 1976
KAISER ENGINEERS, INC.
PROCUREMENT DEPT.

ITEM	QUANTITY	O.D.	I.D.	WALL	LENGTH	FT	WEIGHT	HEAT NO
5	11,910'	1.315" 1" Sch. 40		.133"	Rdm. 17' - 24'	1.679	19,997	Con 494 1195
6	10,000'	1.660" 1-1/4" Sch. 80		.191"	Rdm. 17' - 24'	2.997	29,970	Con 444 1004
7	13,775'	1.900" 1-1/2" Sch. 80		.200"	Rdm. 17' - 24'	3.631	50,017	Con 687 1438

CORRECTED COPY
6-30-75

CHEMICAL ANALYSIS (Average Ladle Analysis)

HEAT NO	C	MN	P	S	SI	NI	CR	MO	V	CU	REMARKS
HA-0001	.20	.73	.011	.019	.19						Items 5 & 6 & 7
HA-0005	.21	.80	.010	.019	.19						Item 7

PHYSICAL TEST

ULT. STR. PSI	YIELD PSI	ELONGATION 2"	FLANGE	HYDRO TEST	ROCKWELL NO	REMARKS
79100	56700	45.0 Item 5		2500 psi	OK	Bend OK
75600	58600	47.0				
74800	50000	47.0 Item 6		2500 psi	OK	Bend OK
73600	51400	49.0				
70700	48200	42.0 Item 7		2500 psi	OK	Bend OK
72200	48600	44.0				

APPROVED 33 9-16-76

I HEREBY CERTIFY THAT THE FACTS SET FORTH HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

R L Duncan
METALLURGIST

SWORN TO AND SUBSCRIBED BEFORE ME THIS 26th DAY OF December 19 74

J Espinosa
NOTARY PUBLIC

505