



Reactor Controls, Inc.

September 15, 1983

United States Nuclear
Regulatory Commission
Office of Inspection & Enforcement
4330 EastWest Highway, Room 305
Bethesda, MD 20014

Attention: Mr. Edward L. Jordan
Director

Subject: Your letter dated August 8, 1983 and
"Draft of IN83-XX" Reactor Controls, Inc.
Construction Deficiencies

Gentlemen:

We thank you for permitting us an extension to the response date for your subject letter. Reactor Controls is seriously concerned about a negative report and the subsequent effect that could result following the issue of your Draft Information Notice. Reactor Controls has always been recognized as a Quality contractor employing competent people.

Therefore in the time available to us to prepare a response, it is our purpose herein to offer sufficient information to you to decide not to issue the draft notice. If the information is not entirely sufficient, it is our hope to cause you to at least doubt your first conclusions and give us an opportunity to further demonstrate that Reactor Controls should not be singled out as a contractor with significant problems of construction deficiencies. Because the projects referred to were completed years ago, we have not yet had access to the individuals and documents necessary to completely research thorough answers. If after reading this letter you are still inclined to issue the notice, we request additional time to be able to obtain additional material with which to strengthen our case. We also request an opportunity to meet personally with you for first hand discussions.

We do not claim to have never made mistakes, but our QA Program has always been capable of finding and correcting them. We believe that the observations and findings referred in the draft notice deserve and require complete input from Reactor Controls before being published. We sincerely hope that you agree with us. We submit the following in response to each item identified in your draft notice.

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PDR ADOCK 05000358
Q PDR

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ORIGINAL TO
JIMMIE RANES
305A EW-S

Reactor Controls, Inc.

Response to Comments on Zimmer

Item 1 - Control Rod Drive Mechanism (CRDH) Work Platform

- a, b, c & d. At anytime during installation of the customer supplied equipment, of which this item is one example, when the work could not be completed in accordance with drawings and/or specification requirements, the customer or his agent were contacted to provide resolution. Any and all deviations were approved by the customer or his agent through issuance of a Field Deviation Disposition Request (FDDR). Reactor Controls, Inc. did not supply any material or items for this installation, and any deviations from the AISC Manual or other specifications, were the responsibility of the equipment designer and supplier. RCI did not provide any of the materials or items installed. Everything was provided to RCI by the owner except welding materials, which RCI did provide.

RCI can accept as fact that the items as reported during the recent examination may be true. However we strongly point out that in the years since RCI left that jobsite a lot of disassembly, reassembly and modifications may have been performed. Therefore to suggest that the present status is the work of RCI is presumptuous.

Comment: At the time of installation, the CRD Work Platform was considered temporary due to interferences preventing proper operation and future modification would be required to enable proper operation. RCI did the work in accordance with the customer instructions as the platform was necessary to perform other installation operations. The rework of the platform was not performed by Reactor Controls, Inc. and possibly has been reworked since RCI left the jobsite.

Item 2 - CRDH Lateral Restraint Beam

- a. During installation of the beams, all bolts were tightened with wrenches without reference to specific torquing valves. RCI did not receive specific torque value requirements for any bolting installations for the period of time work was performed. Later, Sargent & Lundy Engineers did prepare and issue a torquing procedure titled Concrete Fastener Installation Procedure (CFIP) but it was not issued to Reactor Controls, Inc. It is likely, others have performed work in these areas since RCI left the site as it has been determined all bolts were tight when installation was complete.
- b. The use or non use of washers during installation cannot be determined from information available to RCI. The use of common machine bolts by RCI is unlikely as RCI did not provide any equipment or material during installation.

Comment: Attached please find a copy of a CG & E Field Work Order No. RCI-1 dated August 22, 1975. This is typical of the manner in which RCI was directed to perform operations which did not initially meet drawing or specification requirements. RCI does not have copies of the FDDRs as CG & E issued Field Work Orders to direct RCI performance of work outlined in the FDDRs.

Reactor Controls, Inc.

Item 3 - CRD Housing Support Assembly

- a. This assembly was installed as designed and supplied. Attached are pictures of this type of assembly in the Hatch Nuclear Power Plant which is identical to Zimmer. A check of the G.E. Co. installation drawing revealed this is normal for this installation and the installation was in accordance with the drawing. A check with the component designer, G.E. Co., indicated this is the actual design of the component.
- b. RCI had no responsibility for surface treatment of the components. The supplier of the equipment provided the surface treatment.
- c. Keeping in mind RCI has been off site since 1979, the fact a fillet weld is cracked at this time is not evidence it was cracked at time of installation or that inadequate techniques were employed to perform the welding.

Item 4 - Reactor Lower Head Insulation Frame

This work was not in the scope of the RCI contract as evidenced by S & L Specification H-2832, page 1-9, paragraph 17.

Item 5 - Scram Discharge Volume Level Switch Supports

The use of self drilling anchor bolts was common practice at the time of installation. The system design specification was supplied by Sargent & Lundy Engineers and it was not until issuance of IE Bulletin 79-02 that emphasis was given to anchor bolts. The action taken by S & L at that time was the issuance of CFIP (Concrete Fastener Installation Procedure) and it was issued to other contractors on the Zimmer jobsite but was not included in the design specification for the RCI scope of work. The use of threaded rod being substituted for bolting is not a normal RCI practice and was apparently performed without Site personnel knowledge.

The use of "hardware store" quality nuts & bolts is a condition we cannot comment on as we do not have knowledge of what that is or where the bolts were used. The use of threaded rod for a U-bolt was an approved design condition indicated on the installation drawing.

To comment on welds being stuffed into a tubular support member would be presumptuous or worse; it was RCI filler material. All filler material issued by RCI was documented out and in and a record of all transactions is on file.

The other items identified here may or may not have been performed by RCI during installation. Again, keep in mind that RCI work has been modified by others since RCI left the site.

Response to Comments on Brunswick, Grand Gulf & Pilgrim

Item 1 - Carolina Power & Light Company (LER 80-055)

Base plates and the anchors used for installation were installed in accordance with the design specification provided to RCI by CP & L. RCI did not have design responsibility and the use of expansion anchors was an accepted practice at the time of installation. Reactor Controls, Inc. completed installation work at Brunswick in early 1975 and IE Bulletin 79-02 was not issued until 1979. The use of the term "faulty installation techniques by RCI" has not been explained or compared to the standards in existence at the time of construction. The criteria for nuclear power plant construction has changed since 1975 and the increased size of base plates may be required now, whereas at the time of installation the base plates met the design criteria.

Item 2 & Item 4 - Mississippi Power & Light Company (PRD 80/56) and (PRD 82/13)

The implication in the report that Reactor Controls, Inc. did not have a method for documenting, controlling and approving deviations from design drawings is inaccurate.

The facts surrounding the events leading up to the status report issued on January 23, 1981 were as follows:

RCI work during the time period of January, 1981 was incomplete in relationship to the supports being installed for the Control Rod Drive Hydraulic System. The client had determined that new design criteria were being applied for the supports for the Control Rod Drive Hydraulic System and therefore the supports that were already installed probably would not be adequate to support these new loads. It was jointly decided by RCI & MP & L at this time, that RCI should complete the installation of the supports on a temporary basis in order that the pre-op testing of the Control Rod Drive Hydraulic System Piping and Components could be started by MP & L. The pre-op testing could not be started if the supports were not installed for the system. Therefore Reactor Controls did in fact install the supports in a temporary fashion and the installation of these supports was documented to assure all work would be identified. During the installation there were incidences where material was substituted for that called out on the drawings due to information supplied by the personnel performing the analysis. In some cases, the material was supplied to Reactor Controls, Inc. by Bechtel Corp., because they had the material on site and for Reactor Controls, Inc. to purchase the material in order to complete the installation process at that time would have been time consuming and would have delayed the scheduled completion of the supports. It was with the knowledge of Bechtel and RCI that some of the support members were installed not in accordance with the drawings because it was determined the installation was temporary. The temporary installation was recorded on marked up drawings & ECNs in the field and provided to RCI engineering for incorporation into the design drawings to be used for analysis of the permanent supports. When the re-analysis was performed on the supports, the work was then restarted in accordance with the new design drawings supplied to the field. Where the supports installed were adequate for the new design loads, the information was recorded and the temporary installation was upgraded to a permanent installation and inspections were performed to ascertain that the installation was in accordance with the drawings. During the time of this installa-

Item 2 & Item 4 (Con't)

tion, in the period from mid 1981 thru mid 1982, the client had determined the plant's start-up date and Reactor Controls was informed that our work could not impact the scheduled operation of the plant. It was during this time that Reactor Controls provided additional personnel and went to a 24 hour a day, 7 day a week schedule to complete the installation of the supports for the Control Rod Drive Hydraulic System. Due to the re-analysis being performed on each installation, many Engineering Change Notices were issued due to interferences and/or evidence the initial design was inadequate and changes had to be made. Even though this may have caused some confusion during the installation process, inspections were being performed as work was being completed. These inspections were termed initial inspections, and with the knowledge of all concerned Bechtel, MP & L and RCI, a final inspection would be undertaken prior to the final as-built drawings to assure that the system being turned over to the client would be per the drawings and as designed.

The implication that Reactor Controls failed to follow the requirements of their QA Program is inaccurate. Reactor Controls program required Quality Control Hold Information Notices (Nonconformance Reports) be initiated when installation was not in accordance with the design drawings. QC Hold Information Notices were issued to identify deviations at the time of installation. It was at this time that Bechtel Corporation chose to point out several QC Hold Notices that had been issued by RCI as an indication of RCI not performing work in accordance with our program. Investigation of these QC Holds by Bechtel showed that RCI had performed work in accordance with our program. This investigation proved the program identified the deviations and did provide corrective action to correct deviations during the construction process.

The utility constructor's Quality Control personnel were assigned late in the project to do parallel inspections of the supports being installed by Reactor Controls with the intention to eliminate the need for additional inspections when RCI turned the equipment over to the client. These inspections would have been required to be performed under the IE Bulletin 79-14 and the thought was to parallel our inspections to provide the 79-14 walkdown inspections prior to the complete turnover of the system. This would enable the utility to maintain their scheduled start-up of the Grand Gulf Unit 1 plant. There was at no time an implication made that these inspections were being performed because RCI personnel were not capable of performing adequate inspections. RCI did in fact perform their inspections and provided documentation of the work performed and this was turned over to our customer at the end of the project.

Item 3 - Boston Edison Company (LER 82-005)

The use of the term "four seismic supports not completely installed" does not provide enough information for RCI to determine the validity of the statement. RCI work at Pilgrim Nuclear Power Station was completed in mid 1971. Since that time many new designs and requirements have been imposed which are more stringent than at the time of installation. In all probability there has been substantial work performed by others on the supports RCI installed and to indicate RCI's original installation

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Page 6


Item 3 - (Con't)

practices caused pipe clamps to be loose or missing is an unreasonable presumption.

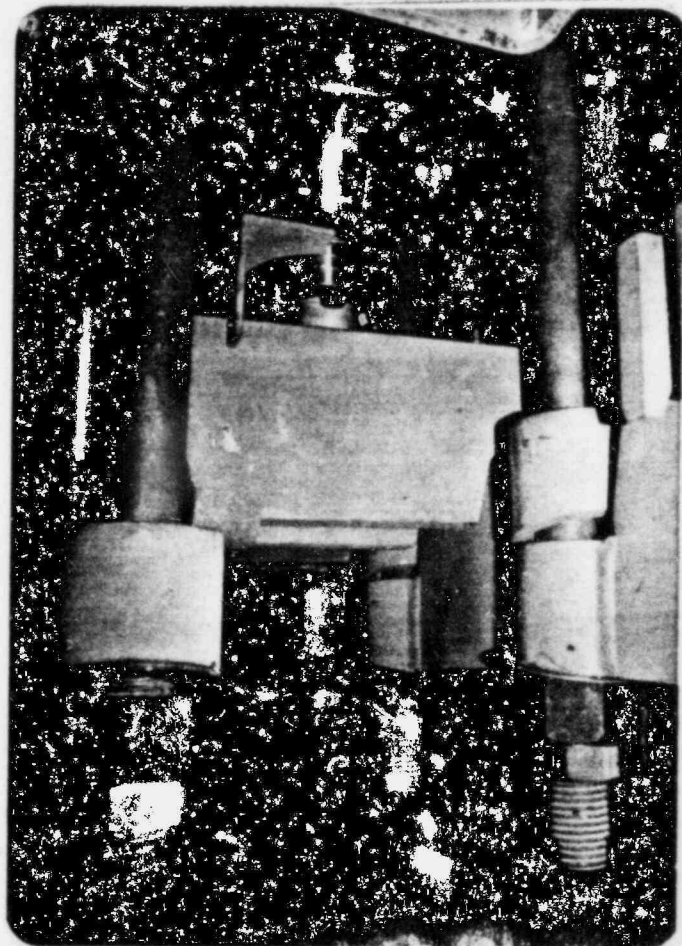
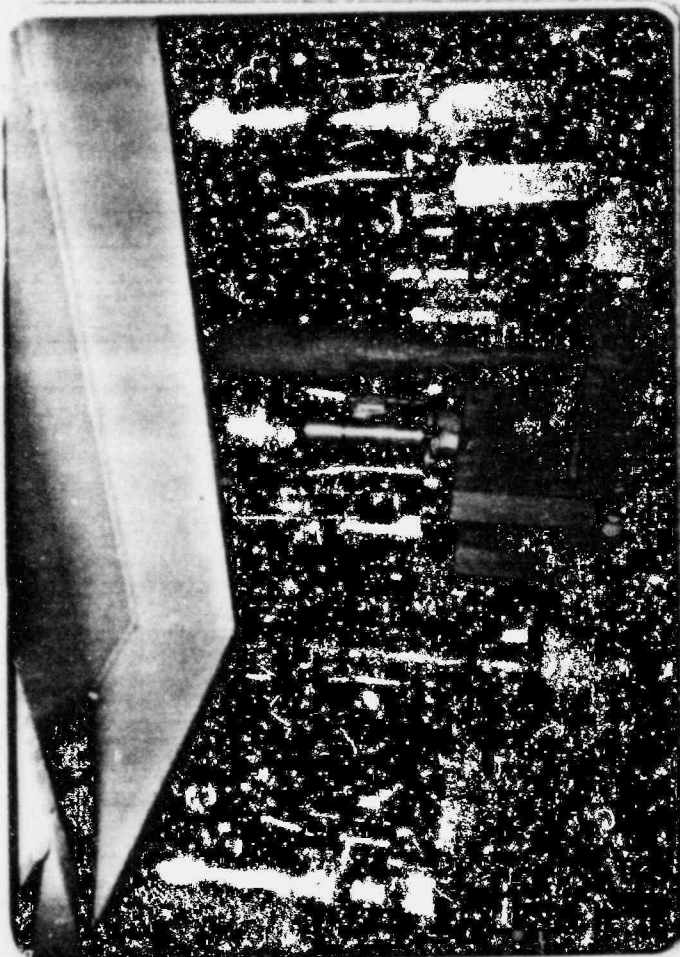
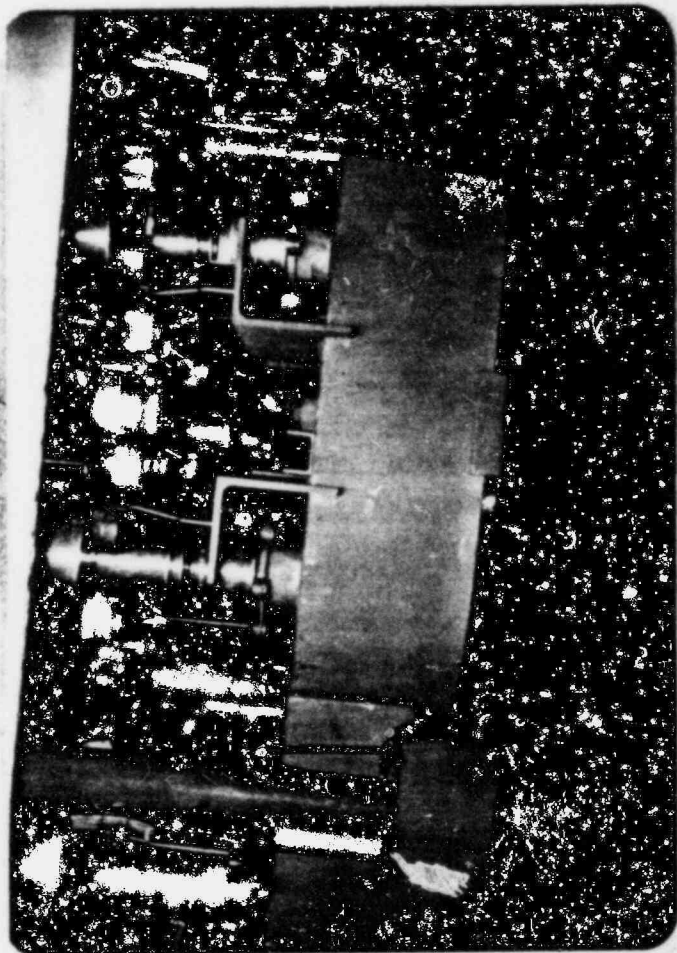
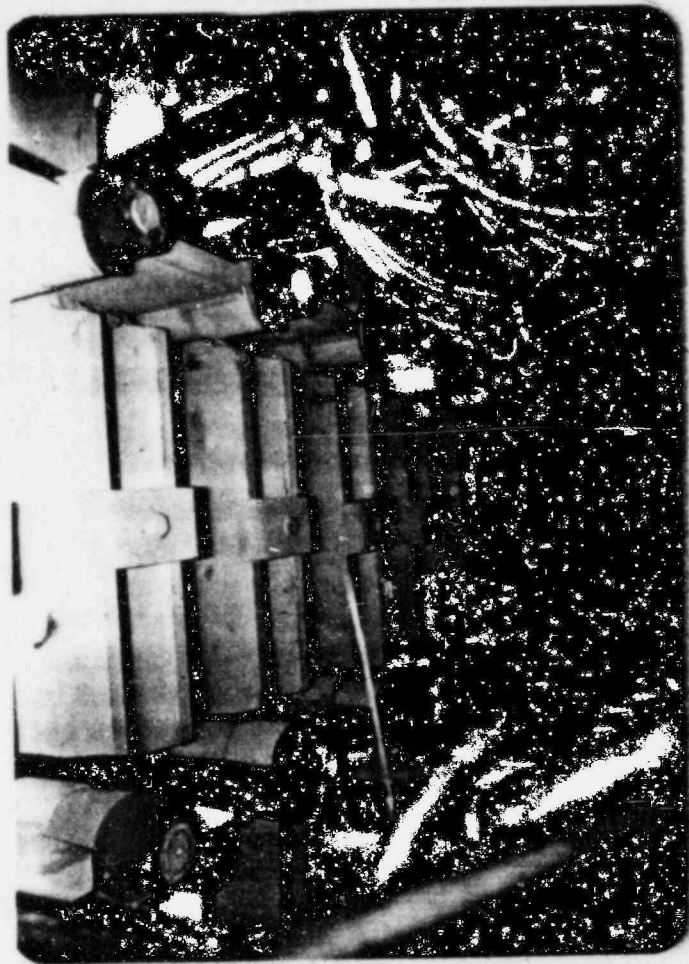
Comment: It is apparent from reviewing the wording of the proposed Information Notice, and investigation of the circumstances identified for each item, there is a lack of evidence to support publication of a document that would be damaging to RCI. Within the time frame permitted to give reasons why we feel this information is inaccurate we feel the RCI response is more than sufficient to raise doubt as to the validity of the IE Information Notice titled "Reactor Controls Incorporated Construction Deficiencies". We further contend, given the opportunity to provide additional information or to attend a meeting with those personnel responsible for compilation of the data proposed to be published, there is no doubt the outcome would be RCI's ability to disprove the contents of this draft notice. Reactor Controls, Inc. has been involved in fabrication and installation of safety related equipment in numerous nuclear power plants since 1964 and in all cases we have proven to be capable of performing all work contracted. Our customers have always been satisfied with our work and have expressed satisfaction with personnel assigned to their projects. The publication of this document, with so many unfounded accusations, would be irreversibly damaging to Reactor Controls, Inc. We, as a company are very proud of our performance and our highly qualified and respected personnel. Our performance has been exceptional and cooperation with agencies has been excellent.

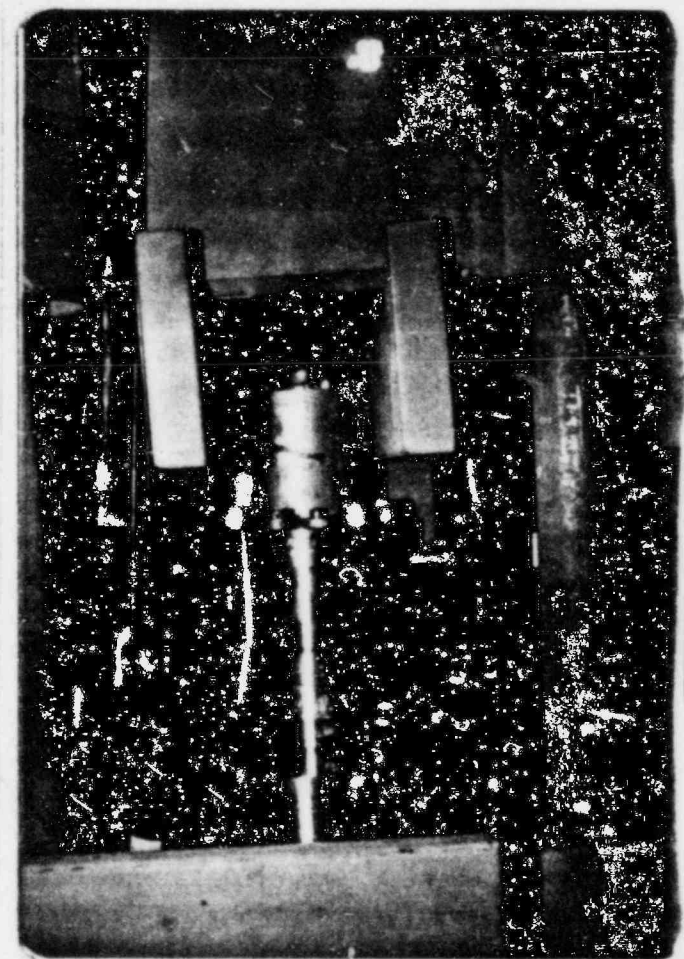
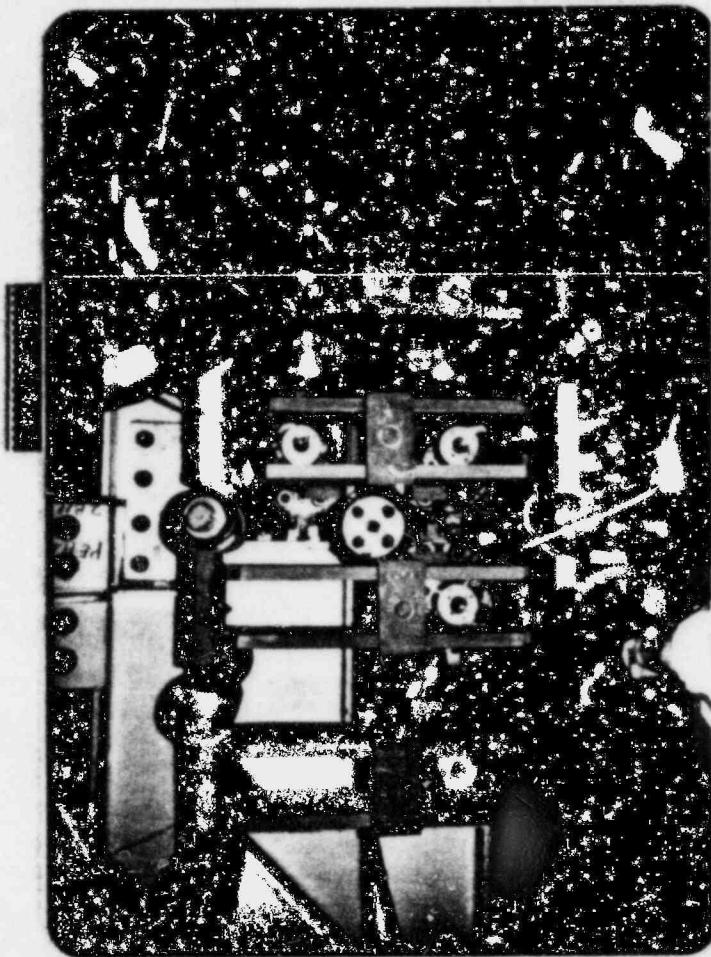
Very truly yours,

REACTOR CONTROLS, INC.


Jack C. Millett
Vice President

JCM/dh
Attachments





THE CINCINNATI GAS & ELECTRIC COMPANY
COLUMBUS AND SOUTHERN OHIO ELECTRIC COMPANY
THE DAYTON POWER AND LIGHT COMPANY
P. O. Box 960
Cincinnati, Ohio 45201

FIELD ORDER NO. RCI-1

DATE: August 22, 1975

To: Reactor Controls, Inc.

Attention: John Klaus

RE: Contract No. H-2832
R.P.V. Internals and CRD System

Gentlemen:

You are hereby authorized to perform the following described work in accordance with the cost plus provisions of the above contract:

1. Furnish supervision, labor, tools and equipment and do all things necessary to erect owner furnished CRD Housing Restraint Supports and Beams per G. E. Drawings 762E658 and K.E.I. CSK-195.

**FOR INFORMATION
ONLY**



Daily Time Cards Signed by Kaiser Engineers, Inc.

The estimated cost for the above work is \$5,112.00 (estimated)

This work is to be invoiced separately with reference made to the above Field Order Number. Invoice must list labor and material separately. Charge this work to W.O. _____ Item _____.

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

By

J. L. Taylor 8/29/75
Field Engineer

cc:

Approved: W. W. Belwies 9-11-75

Field Project Engineer

FIELD ORDER NO.

PROJECT NO. 761E970	REV. 2	DESCRIPTION NO. 1 SYSTEM CONTROL ROD DRIVE HOUSING SUPPORT	DESIGNED BY G.H. Cox	DATE: 4-5-75
CRD HOUSING SUPPORT	G.E.	DESIGNED BY G.E.	2784	29821

FIT UP PROBLEM WITH CRD SUPPORT BEAM BRACKETS & EMBEDDED SUPPORT PLATE.

I. BRACKETS #18, 21 & 22 TO LONG.

II. $\frac{3}{16}$ " GAP ON ONE SIDE OF BKT. #17 & EMB. PLATE & LURD.

FOR INFORMATION

RECEIVED

SEP - 5 1975

STRUCTURAL DESIGN

ONLY

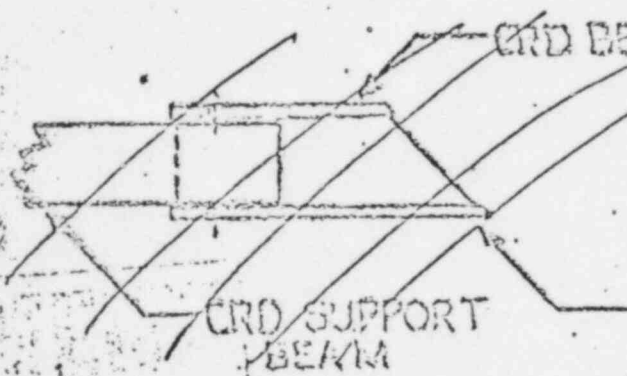
~~I. BRACKETS #21, 22, 18 TRIM TO FIT SEE DETAIL B~~

II. BUTTER DIAB. PLATE TO CLOSE $\frac{3}{16}$ " GAP & WELD PER DETAIL C. BRACKET #17.

9-9-75

Per telecon R.J. Pruski.
FDR to be prepared
by GE will be
approved by SCL

Original submitted to
SCL will be returned
as above annotated
MWB



TRIM AS REQUIRED TO FIT 9-9-75
EMBEDDED PLATE

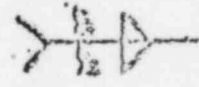
DETAIL A

FITUP GAP

9-9-75

SEE DETAIL C

DETAIL B



BUTTER GAP
WITH WELD
METAL

DETAIL C

WELDED TOGETHER 9-9-75

REVISIONS

A.H. Carlson 9-8-75

MWB

I.N. Hoffman 7-24-75

TO J.P. Billings
Kaiser Engineers Inc.
Zimmer Nuclear Station

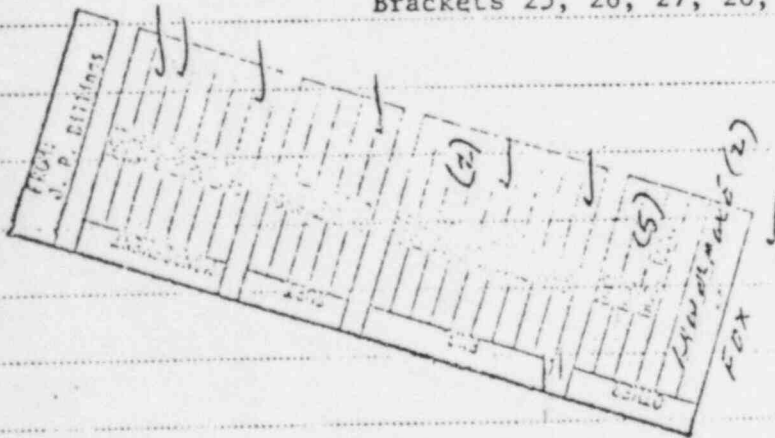
PLACE Moscow, Ohio
 DATE 9/11/75
 CC: _____

SUBJECT CRD Support Beams and Brackets Ref Kn-1-13 dwg - 761E970 Sheets 1 and 2

Due to imbedment problems, modification of General Electric supplied equipment is authorized as follows.

- Beam 3 Install 1/16 shim between bottom of beam and bracket # 11.
- Beam 6 Bracket 23 - cutoff 1/2"
 Bracket 24 - cutoff 7/16"
- Beam 2 Bracket 10 - cutoff 1/2"
 Bracket 11 - cutoff 1/4"
- Beam 7 Enlarge hole in beam so bolt will go through beam and bracket #18
 approximately 1/8".
- Beam 51 Bracket 21 cut long leg so bracket will fit on embedment not to
 exceed 1 1/2".
 Bracket 22 cut long leg so bracket will fit on embedment - not
 to exceed 1 1/2".
 Brackets 25, 26, 27, 28, may be cut or ground to fit.

FOR INFORMATION
ONLY



D. N. Nelson
 SIGN YOUR NAME PLAINLY

General Electric Co
 COMPONENT

Zimmer Nuclear Station
 BLDG. & ROOM PHONE/DIAL COMM.

**KAISER
ENGINEERS**

TO: REACTOR CONTROLS INC.

DATE: 9/16/75

AT: MOSCOW, OHIO

FROM: AL LAWRENCE

ATTN: JOHN KLAUS

KEI

COPIES TO: H.B. GIBBS, C. STANFIELD

AT: MOSCOW, OHIO

T. BILLINGS, W. SMITH (I & SE)

JOB NO.

HANDWRITTEN MESSAGES ENCOURAGED

SUBJECT: CONTRACT H-2832 RPV INTERNALS.

PLEASE PROCEED WITH WORK ON CRD BEAM #51
FIELD HOLE PIER APPROVED AUTHORIZATION (G.E.)
FIELD KN 1-13 DATED 9/15/75 (ATTACHED)

CHARGE TIME TO CG&E FIELD ORDER NO. KEI-#2

GL

**FOR INFORMATION
ONLY**

TO J.P. Billings
Kaiser Engineers Inc.
Zimmer Nuclear Station

PLACE Moscow, Ohio
 DATE 9/15/75
 CC: _____

SUBJECT CRD Support Beam and Brackets Ref KN-1-13 dwg- 761E970 Sheets 1 and 2

Due to imbedment problems, modification of General Electric supplied equipment
 is authorized as follows.

Beam 7 Cut long leg on bracket #18 so bracket will fit imbedment. This must
 leave 3" of the beam bearing on the bracket.

Elongate the hole in beam 7 180° end to align beam and bracket holes.

**FOR INFORMATION
 ONLY**

J.P. Nelson
 SIGN YOUR NAME PLAINLY

COMPONENT

Zimmer Lite
 BLDG. & ROOM PHONE/DIAL COMM.