



S-58  
50-348/364-CIVP  
2/14/92  
UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

Staff Exh: 58  
USNRC

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OFFICE OF SECRETARY  
FOR PUBLIC AFFAIRS

John H. Frye, III  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dr. James H. Carpenter  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Peter A. Morris  
Administrative Judge  
10825 South Glen Road  
Potomac, Maryland 20854

In the Matter of  
ALABAMA POWER COMPANY  
(Joseph M. Farley Nuclear Plant, Units 1 and 2)  
Docket Nos.: 50-348-CivP; 50-364-CivP ASLBP No. 91-626-02-CivP

Dear Administrative Judges:

Pursuant to the Atomic Safety and Licensing Board's January 3, 1991 Memorandum and Order, Alabama Power Company and the NRC Staff jointly submit the enclosed descriptions of the purpose and function of the specific items of equipment implicated by the NRC Staff's August 15, 1988 Notice of Violation in the above captioned matter. Where feasible, pictures or diagrams are included to supplement the descriptions. In providing this information jointly, the parties have attempted to be responsive to the Board's request. However, in so doing, the parties do not intend that this submittal constitute a stipulation as to any facts that may be in controversy or regarding the safety significance of any equipment or component described.

Sincerely,

*Eugene Holler*  
Eugene Holler  
Counsel for NRC Staff

Enclosure: Attached

cc: Service List

NUCLEAR REGULATORY COMMISSION

Docket No. 90-348/364 Official Ex. No. 58  
In the matter of ALABAMA POWER CO.  
Staff  IDENTIFIED 2/14/92  
Applicant \_\_\_\_\_ RECEIVED 2/14/92  
Intervenor \_\_\_\_\_ REJECTED \_\_\_\_\_  
Cont'g Off' \_\_\_\_\_  
Contractor \_\_\_\_\_ DATE 1-16-91  
Other \_\_\_\_\_ Witness \_\_\_\_\_  
Reporter L. Estep

AUGUST 15, 1988  
NOTICE OF  
VIOLATION ITEM

ITEM DESCRIPTION AND PURPOSE

FUNCTION (Examples listed are for illustration purposes only and are not meant to be either inclusive or definitive.)

IA.1. - V-type electrical tape splices installed on safety-related electrical components

1. V-type splices are electrical cable splices configured in a V formation using Okonite T95 tape for insulation and Okonite #35 tape for jacket material. (See figure 1.) The V-type splices conduct electric current while maintaining conductor-to-phase and conductor-to-ground integrity. The purpose of a V-type electrical tape splice is to connect electrically field routed cable to vendor supplied equipment electrical leads. Such electrical equipment includes solenoid valves (SOV), motor operated valves (MOV), and containment fans.

1. The function of SOVs and MOVs varies with the specific application and the specific operating circumstances. Some examples of SOV applications (and the FSAR sections in which the function of the component is addressed) are Pressurizer PORVs (FSAR 5.5.13), Main Steam Isolation Valves (MSIV) (FSAR 5.5.5), Turbine Driven Auxiliary Feedwater Pump Main Steam Admission Valves (FSAR 6.5), Auxiliary Feedwater Control Valve (FSAR 6.5), and Component Cooling Water (CCW) to Reactor Coolant Pump (RCP) Thermal Barrier Valves (FSAR 9.2.2).

Some examples of systems with MOVs are Auxiliary Feedwater (FSAR 6.5) and Post Accident Containment Combustible Gas Control System (FSAR 6.2.5).

Fans in containment, with motors that used V-type splices, are generally used to assist in limiting temperature rise inside containment and thereby aid the continued operation of several systems inside containment. (FSAR 6.2.2)

IA.2. - In-line 5-to-1 field-to-pigtail tape splice configuration used on the hydrogen recombiners

2. An in-line 5-to-1 field to pigtail tape splice is one field wire bolted to five heater leads and taped with Okonite T95 insulating tape with Okonite #35 jacketing tape over the T95 tape. (See figure 2.) The purpose of this splice is to connect electrically one field routed power cable to the five electrical resistance heater leads in the vendor supplied hydrogen recombiners.

2. The hydrogen recombiners are required by 10 C.F.R. § 50.44 for controlling combustible gases in containment following a loss of coolant accident.

IB.1. - States terminal blocks (Model nos. NT and ZWM) and General Electric terminal blocks (Model no. CR151)

3. A terminal block is a device that provides convenient connection points for connecting several or multiple electrical conductors, including cables inside containment for instrumentation circuits. The terminal block conducts electrical current while maintaining conductor-to-conductor and conductor-to-ground integrity. (See figure 3.)

3. Terminal blocks have been used inside containment in instrumentation circuits that provide indication of plant conditions.

IB.2. - Chico A/Raychem seals

4. A Chico A/Raychem cable entrance seal is an electrical cable connection seal consisting of a Raychem cable breakout seal kit applied over a one inch nipple and under 1-1/4 inch flex conduit fitting and including a Raychem sleeve installed over the breakout boot and under the compression fitting with the sleeve clamped to the metal nipple. Chico A is an inorganic cement mix injected into the boot to fill and seal internal voids. (See figure 4.) The purpose of a Chico A/Raychem seal is to prevent moisture intrusion into associated equipment through the cable entrance.

4. This electrical cable entrance design was used to connect Namco limit switches to solenoid valve junction boxes. Limit switches cause associated SOVs to function automatically.

LC1 - Limitorque valve operators

5. Limitorque valve operators are electrical motor operators that cause motor operated valves (MOV's) to open or shut in response to a remote signal. (See figure 5.) Such operators may employ the following:
  - a. grease for lubrication of mechanical gears,
  - b. T-drains as a means of pressure equalization between the motor's interior and exterior or as a means for egress of moisture condensing inside the motor,
  - c. a limit switch enclosed in a housing,
  - d. electrical splices and terminal blocks for electrical connections as described above.

LC2 - Target Rock solenoid valve electrical cable entrance seal

6. The Target Rock solenoid valve electrical cable entrance seals consisted of a one inch conduit nipple and a Y-fitting connected to a solenoid valve cable entrance hub in which each of the two ports of the Y-fitting contained an unspecified length of one inch conduit nipple over which a Raychem CB-4 cable breakout kit was installed with Greenfield adjustable type compression fittings. 1-1/4 inch couplings were installed over the Raychem boot which was connected to 1-1/4 inch Greenfield type flex conduit. (See figure 6.) The purpose of the cable entrance seals was to prevent moisture intrusion into the Target Rock solenoid valves.

LC3 - GEMS type sump level transmitters

7. GEMS Delavel wide and narrow range containment sump level transmitters provide indication in the control room of post-accident liquid level in the containment sump. (See figure 7.)

LC4 - Premium RB grease used on fan motors and room coolers

8. a. The grease at issue lubricated mechanical bearings for the rotating portion of fan motors inside containment.  
b. The grease at issue lubricated mechanical bearings on the rotating portion of electric motors in room coolers outside containment.

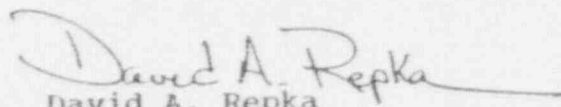
5. Some examples of systems employing Limitorque MOVs, and the PSAR sections in which the function of the system is addressed are Service Water (PSAR 9.21), Component Cooling Water (PSAR 9.22), and Containment Cooling, Purification and Cleanup (PSAR 6.23).

6. Target Rock solenoid valves are used to remotely operate reactor head vents. The remotely operated reactor head vent solenoid valves are required by 10 C.F.R. § 50.44 (c)(3)(iii) to provide improved operational capability to maintain adequate core cooling following an accident.

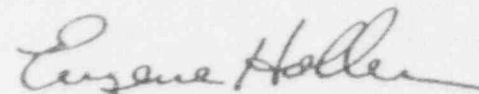
7. The containment sump level indication is one of several means used to identify a loss of coolant accident or other accident that would cause the containment sump to fill with water and to verify that containment cooling water is in recirculation after the refueling water storage tank has reached a prescribed level allowing initiation of containment spray.

8. The fans inside containment are designed to help limit temperatures inside containment.

The coolers in rooms outside containment provide necessary cooling to allow the continued functioning of equipment and instruments located in the rooms.



David A. Repka  
Winston & Strawn  
Counsel for Alabama Power Company



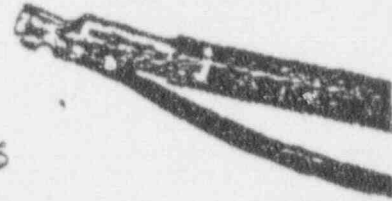
Eugene Holler  
Counsel for NRC Staff

Dated at Rockville, Maryland  
this 16th day of January, 1991.

Test Report No. 17947-01



JOB NO. 17947  
Customer: ASATMA  
Proj. Eng. HAIBONE  
Date 8-28-87  
Tool TOE SECUR



SPECIMENS  
7.1, 7.2, 7.3  
T02

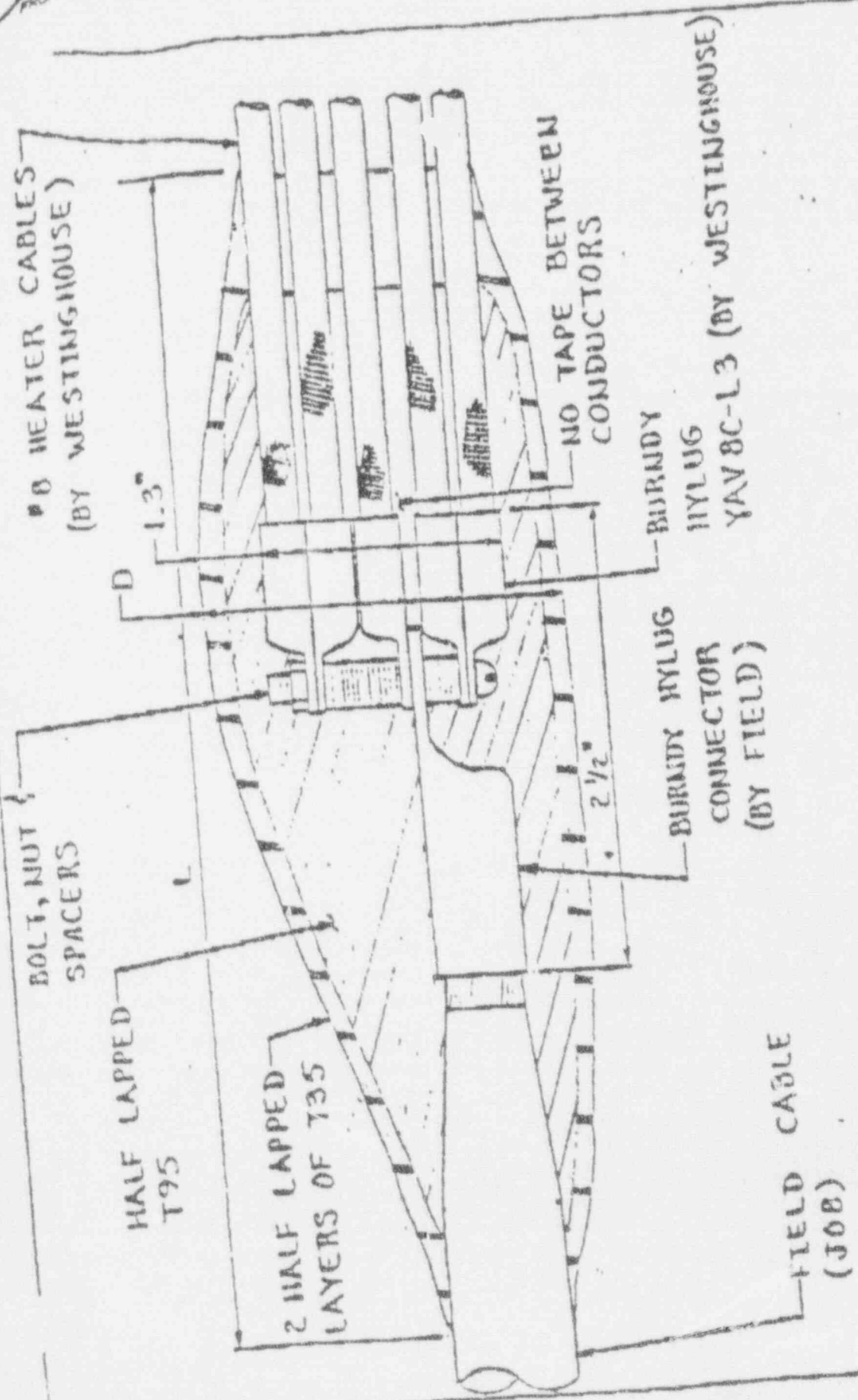
PHOTOGRAPH NO. 1-7  
TEST ASSEMBLY VIEW OF  
SPECIMENS 7.1, 7.2, AND 7.3



JOB NO. 17947  
Customer: ASATMA  
Proj. Eng. HAIBONE  
Date 8-28-87  
Tool TOE SECUR

SPECIMENS  
8.1, 8.2, 8.3  
T03

PHOTOGRAPH NO. 1-8

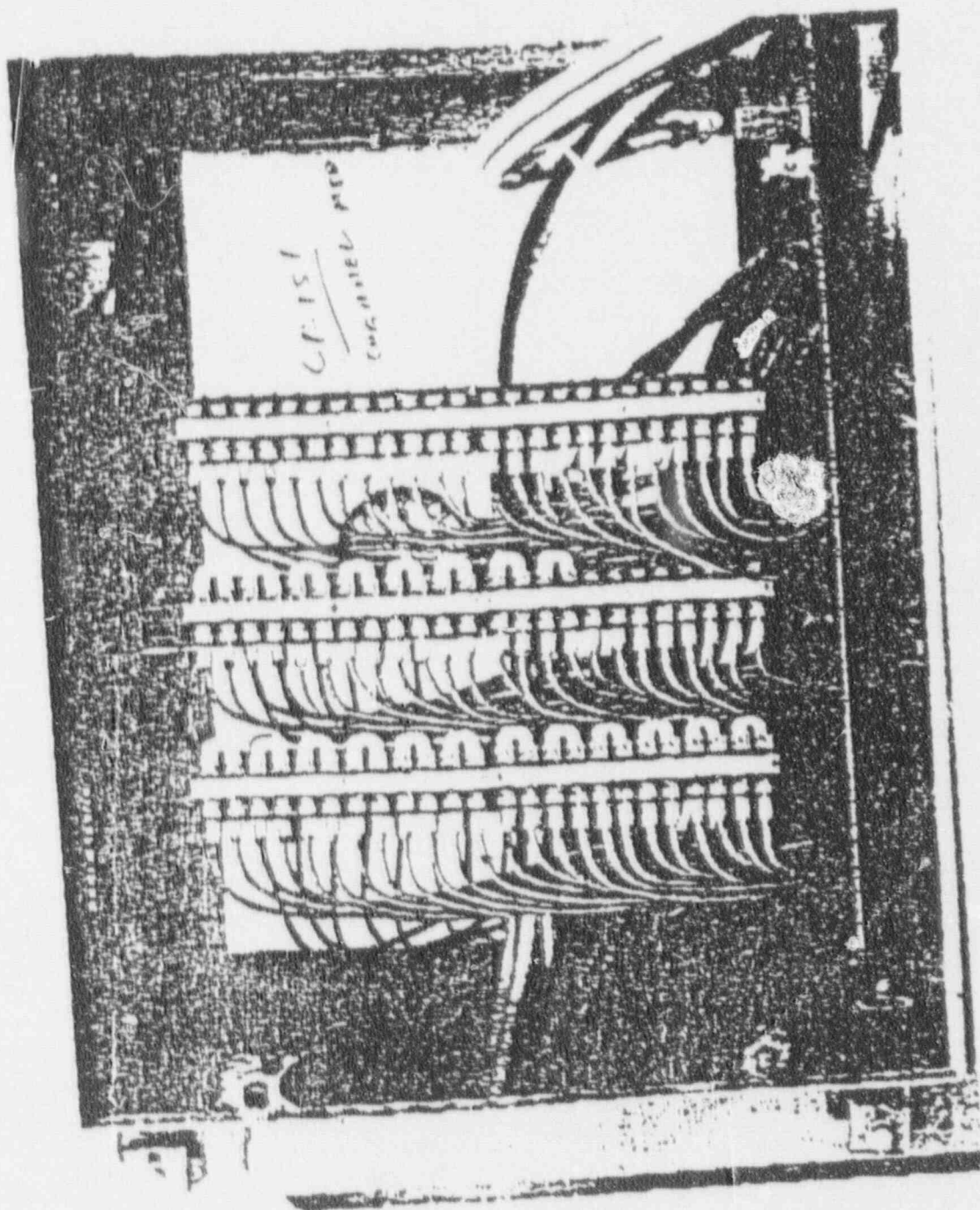


Hz RECOMBINER 1A

PHASE	L <sup>R</sup>	D <sup>#</sup>
A	7"	2 3/8"
B	8"	2 7/16"
C	8 3/4"	2"
N	7"	2"

\* MEASURED DIMENSIONS

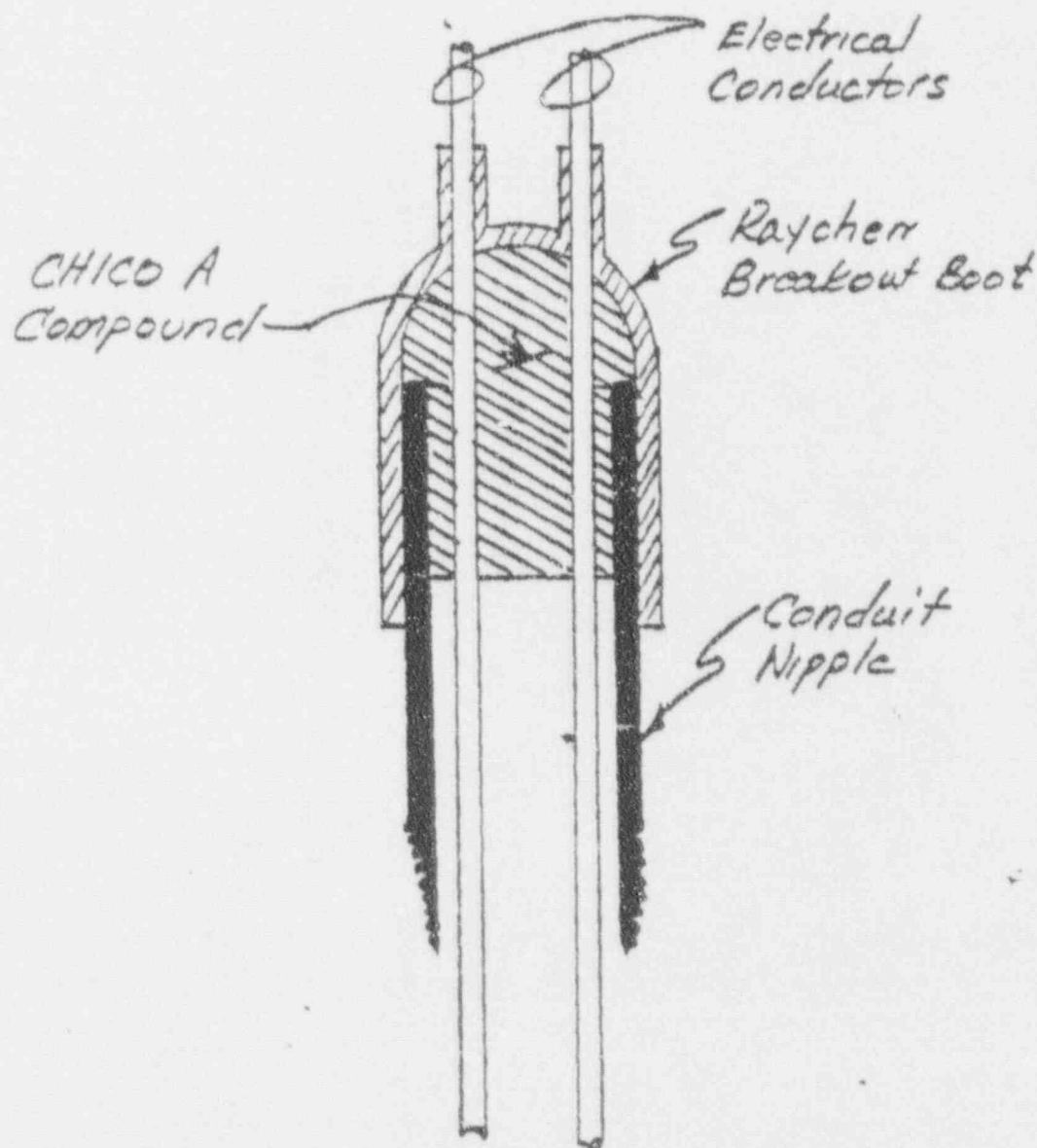
Figure 2



00311 0003

JUNCTION BOX TERMINATIONS BEFORE TEST

Figure 3



SKETCH  
Raychem/Chico A Seal



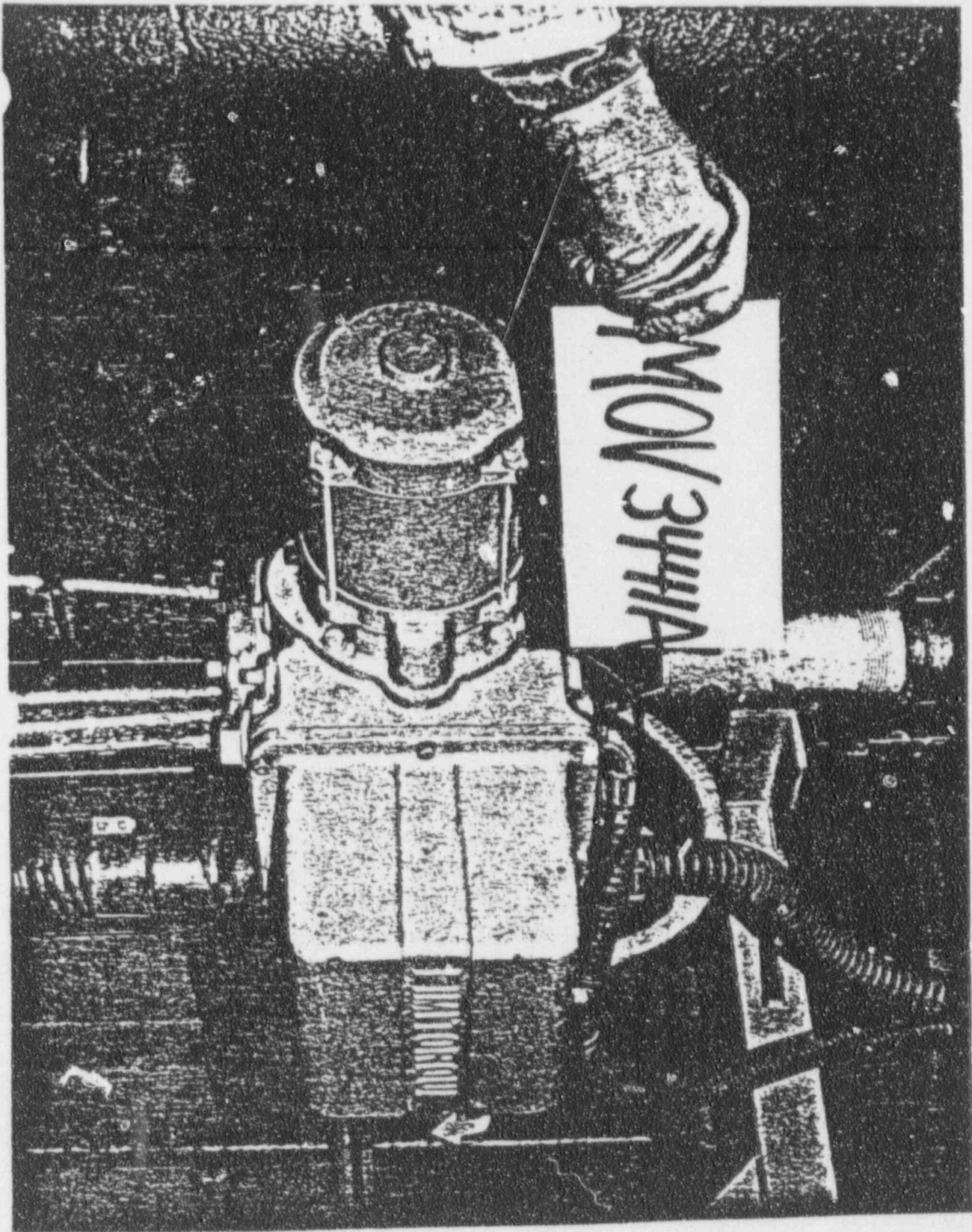
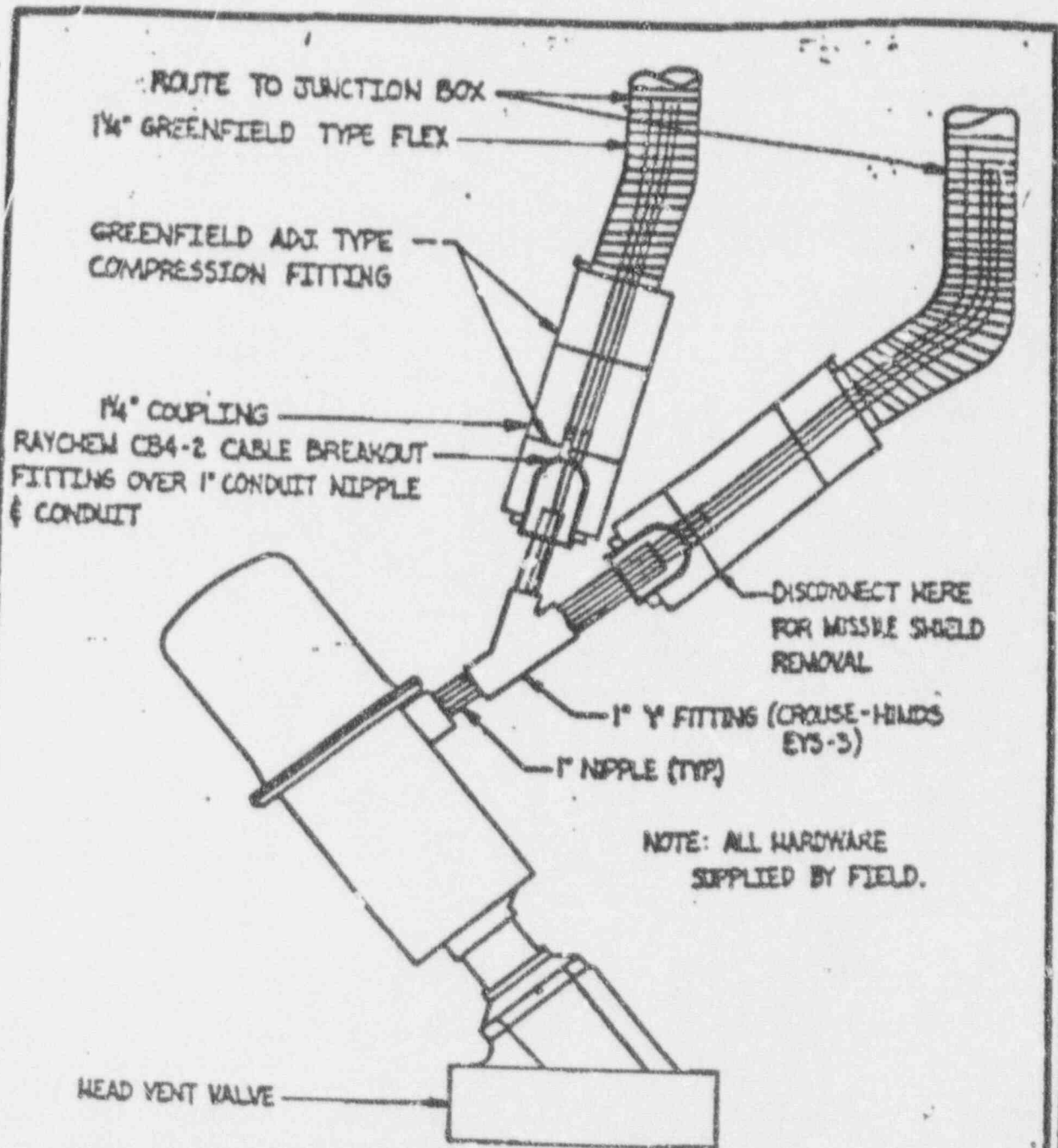


Figure 5



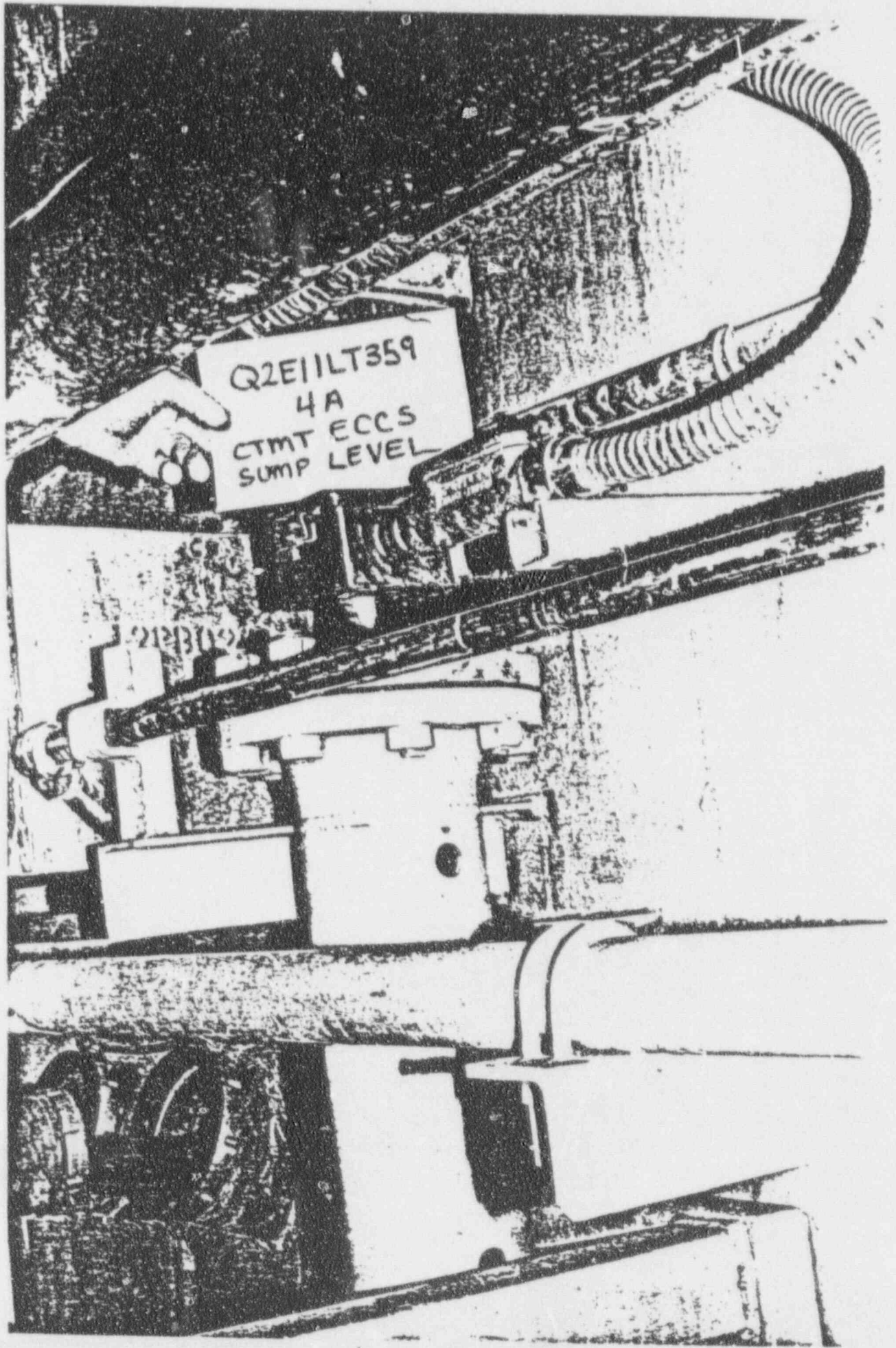
ROUTE TO JUNCTION BOX  
 1 1/4" GREENFIELD TYPE FLEX  
 GREENFIELD ADJ. TYPE  
 COMPRESSION FITTING  
 1 1/4" COUPLING  
 RAYCHEM CB4-2 CABLE BREAKOUT  
 FITTINGS OVER 1" CONDUIT NIPPLE  
 & CONDUIT

DISCONNECT HERE  
 FOR MISSILE SHIELD  
 REMOVAL  
 1" Y FITTING (CROUSE-HINDS  
 EYS-3)  
 1" NIPPLE (TYP)

NOTE: ALL HARDWARE  
 SUPPLIED BY FIELD.

REACTOR VESSEL HEAD VENT VALVE  
 CONDUIT CONNECTION

BECHTEL CORP. JOB 7597-03/20			SOUTHERN SERVICES INC.		
NO. NJB	ISS. DATE	REVISION	ALABAMA POWER COMPANY		
0	9/4/81	ISSUED FOR CONST.	SUBJECT JOSEPH H. FARLEY NUCLEAR PLANT		
1	8-22-81	REV'D AS NOTED	DETAIL TRAY & CONDUIT DETAILS & NOTES		
DATE 1-30-81	SUPERVISOR	SCALE 230	A-177541		



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
ALABAMA POWER COMPANY	)	Docket Nos. 50-348-CivP
	)	50-364-CivP
(Joseph M. Farley Nuclear Plant,	)	
Units 1 and 2)	)	(ASLBP No. 91-626-02-CivP)

CERTIFICATE OF SERVICE

I hereby certify that copies of "LETTER TO ADMINISTRATIVE JUDGES DATED JANUARY 16th, 1991" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or as indicated by an asterisk through deposit in the Nuclear Regulatory Commission's internal mail system, this 16th, day of January, 1991:

John H. Frye, III\*  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Peter A. Morris  
Administrative Judge  
10825 South Glen Road  
Potomac, MD 20854

Office of the Secretary\*  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555  
Attn: Docketing and Service Section

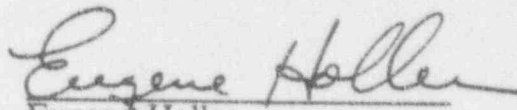
Adjudicatory File (2)\*  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dr. James H. Carpenter\*  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Nicholas S. Reynolds, Esq.  
David A. Repka, Esq.  
WINSTON & STRAWN  
1400 L Street, N.W.  
Washington, D.C. 20005

Atomic Safety and Licensing Board  
Panel (1)\*  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

James H. Miller, III, Esq.  
Balch & Bingham  
P.O. Box 306  
Birmingham, AL 35201

  
Eugene Holler  
Counsel for NRC Staff

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
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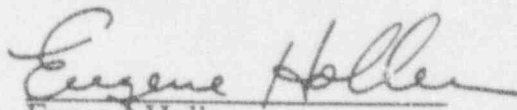
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