

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**RICHMOND, VIRGINIA 23261**

September 19, 1985

**W. L. STEWART**  
**VICE PRESIDENT**  
**NUCLEAR OPERATIONS**

Mr. Harold R. Denton, Director  
 Office of Nuclear Reactor Regulation  
 Attn: Mr. Steven A. Varga, Chief  
 Operating Reactors Branch No. 1  
 Division of Licensing  
 U.S. Nuclear Regulatory Commission  
 Washington, D. C. 20555

Serial No. 85-681  
 NO/WRB:cfm  
 Docket Nos. 50-281  
 Licensee Nos. DPR-37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY  
SURRY POWER STATION UNIT 2  
ASME XI - INSPECTION RELIEF REQUEST

Inservice inspection activities for Surry Unit 2 were conducted during the spring refueling outage as required by Section XI of the ASME Boiler and Pressure Vessel Codes. Pursuant to 10 CFR 50.55a paragraph g(5) relief is requested from certain code requirements. The following bases are provided.

1. The regenerative heat exchanger (2-CH-E-3) is classified ASME Class 1 in the first interval inspection plan (ASME XI 74 edition, Summer 75 addenda). The following items were scheduled per table IWB-2600 to be completed during the refueling outage on the regenerative heat exchanger (Regen Hx):

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	Parts to be examined (attachment 1)	Method
B3.1	B-B	Head to shell weld(17)	Volumetric
B3.1	B-B	Shell to tube sheet weld(18)	Volumetric
B3.2	B-D	Nozzle to vessel welds(5,6,7,8,9 10,11,12,14, and 16)	*substituted surface

\* On February 28, 1984, Veeco was granted relief (letter Mr. Varga to Mr. Stewart) to substitute a surface exam for the required volumetric method due to the impractical joint configuration that exists.

8509240101 850919  
 PDR ADOCK 05000281  
 G PDR

A047  
 11

The seal water return filter (2-CH-FL-3) is classified ASME Class 2 in the first interval inspection plan (ASME XI 74 edition, Summer 75 addenda). The following items were scheduled per table IWC-2600 to be completed during the refueling outage on the seal water return filter:

Table IWC-2600 Item No.	Table IWC-2500 Examination Category	Parts to be examined (attachment 2)	Method
C1.1	C-A	1" head to shell weld(1)	*substituted surface and visual
C1.1	C-A	1" shell to flange weld(2)	*substituted surface and visual
C1.1	C-A	1" top head weld(3)	*substituted surface and visual
C1.3	C-C	Welded support (IWS)	surface

\* On February 28, 1984, Vepco was granted relief (letter Mr. Varga to Mr. Stewart) to substitute surface and visual exams for the required volumetric due to the thin structure of the associated materials, reducing the effectiveness of a volumetric exam.

Preinspection meetings with the Health Physics Department determined that unreasonable doses would result from completion of these examinations. The close quarters surrounding these components limit shielding and allow effective use of only one individual to remove insulation (Regen Hx only), perform necessary surface preparation, perform the inspection, and reinsulate (Regen Hx only). In addition surface preparation time can be extended significantly as a result of the limited preservice examination requirements associated with the earlier codes. In many cases this has left these type of welds in poor surface condition for examination.

The seal water return filter (2-CH-FL-3) is classified ASME Class 2 in the first interval inspection plan (ASME XI 74 edition, Summer 75 addenda). The following items were scheduled per table IWC-2600 to be completed during the refueling outage on the seal water return filter:

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Preinspection meetings with the Health Physics Department determined that unreasonable doses would result from completion of these examinations. The close quarters surrounding these components limit shielding and allow effective use of only one individual to remove insulation (regen. only), perform necessary surface preparation, perform the inspection, and reinsulate (regen. only). In addition surface preparation time can be extended significantly as a result of the limited preservice examination requirements associated with the earlier codes. In many cases this has left these type of welds in poor surface condition for examination.



2. The residual heat removal return isolation valve (MOV-RH-2720B) is classified ASME Class 1 (attachment 3). A Table IWB-2600, (ASME XI 74 edition, Summer 75 addenda) item B6.7, category B-M-2, valve internal visual inspection was required this refueling outage. A substituted thickness measurement examination from the exterior wall was attempted. This alternative was approved by relief request on January 24, 1984 (letter Mr. Varga to Mr. Stewart), relief request SR-1.

As noted by the attached inspection form (attachment 4), accurate thickness readings could not be achieved. By previous agreement (phone conversation Mr. Neighbors et al, NRC and Mr. Hegner et al, Vepco, March 21, 1985) relief from the thickness measurement requirement would be addressed on an individual basis.

Therefore, it is requested that acceptance of the system hydrostatic pressure test be allowed as the alternative examination requirement. These tests (Class 1 to Class 2 boundary valve) were completed with the associated VT-2 examinations on July 1, 1983 and April 22, 1985 at test pressures of 600 psig and 750 psig, respectively.

It is our opinion that acceptance of this relief request provides the most practical resolution to the examination difficulties presented.

3. The current code edition, ASME Section XI 1980 edition, Winter 1980 addenda, states in paragraph IWA-7210(a) that replacement components shall meet the original construction code requirements or, alternatively, the requirement of IWA-7210(c). IWA-7210(c) states that replacements may meet the requirements of later editions of the construction code (in this case USAS B-31.1 - 1967), providing any additional requirements are met and that the later edition has been approved by the NRC.

No later editions of USAS B31.1 were approved by the NRC for nuclear work in 10 CFR 50.55a limiting Surry, under the rules of ASME Section XI, to the original code in power piping/component type replacement. It is requested that the use of ASME Section III be permitted in the same context that paragraph IWA-7210(c) above is intended for later editions of the original construction code for these types of replacements. Use of ASME Section III as approved by the NRC, allows the use of more "state of the art" requirements and provides more flexibility in our repair/replacement program.


VIRGINIA ELECTRIC AND POWER COMPANY TO Mr. Harold R. Denton

Specific use of this relief was already applied during the outage in the replacement of 2-SI-338, a 2 inch ASME Class 2 manual valve (attachment 5), used in setting flow for the high head safety injection system. Procurement of a valve meeting the original construction code and nuclear code cases could not be made, however the original manufacturer stocked a valve, which met ASME Section III NC requirements, except for stamping and met the requirements of ASME Section XI, IWA 7210 (c) as discussed.

It is our opinion that this request is administrative only, but acceptance is necessary to fully comply with the code requirements.

We also feel that adequate bases for the relief requested herein have been presented above, and that Surry will continue to meet, with the alternative proposals, the integrity assurance intended by the code.

Very truly yours,



W. L. Stewart

Attachments

cc: (w/attachment)

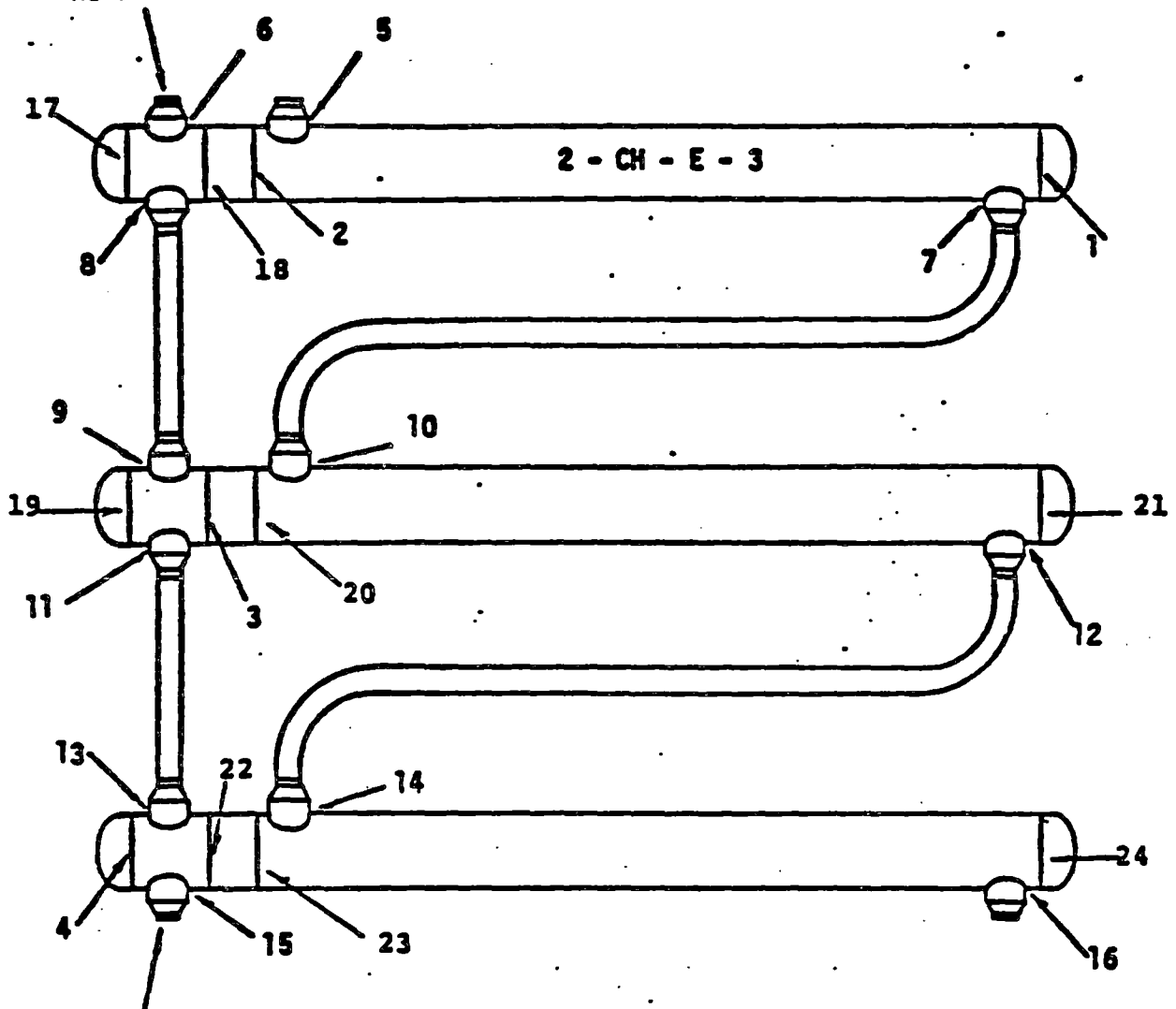
Mr. T. L. Chan  
NRC Project Manager - Surry  
Operating Reactors Branch No. 1  
Division of Licensing

Mr. D. J. Burke  
NRC Resident Inspector  
Surry Power Station

# REGENERATIVE HEAT EXCHANGER

01/01/84

Ref: 1-4507



Ref: 1-4507

Welds: 1, 2, 3 & 4: 17, 18, 19, 20, 22, 23, & 24  
 Material: .875" T A213 T0304SS

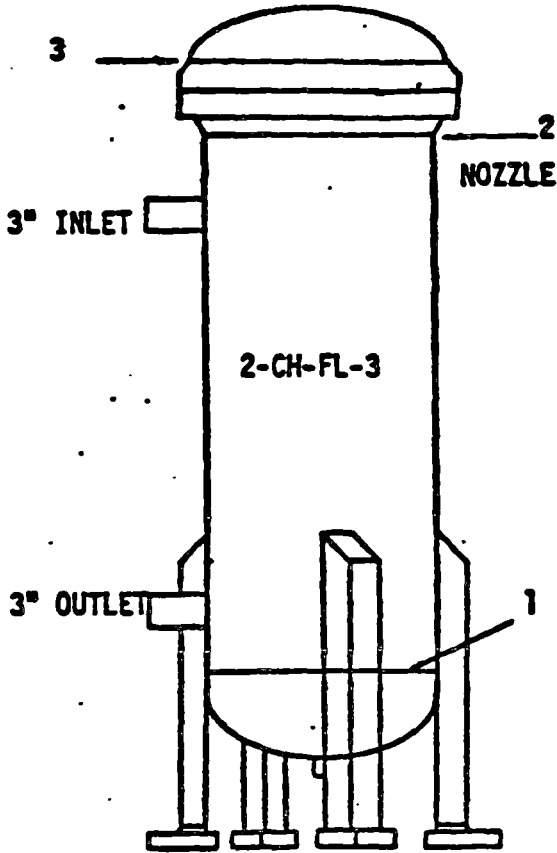
Oia.: 9.25"  
 Circ.: 28.86"

Welds: 5, 6 & 15 to  
 3" Sch. 160 A312 TP304SS

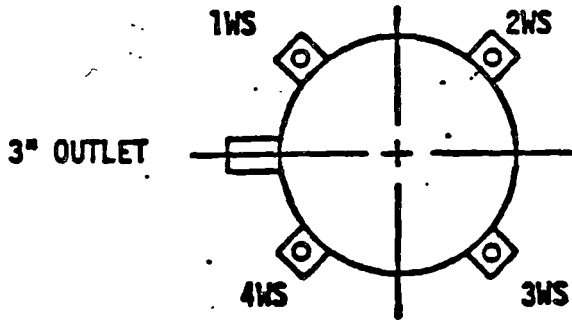
Welds: 7, 8, 9, 10, 11, 12, 13 & 14 to  
 3" Sch. 80 A312TP304SS

1/71

SEAL WATER RETURN FILTER



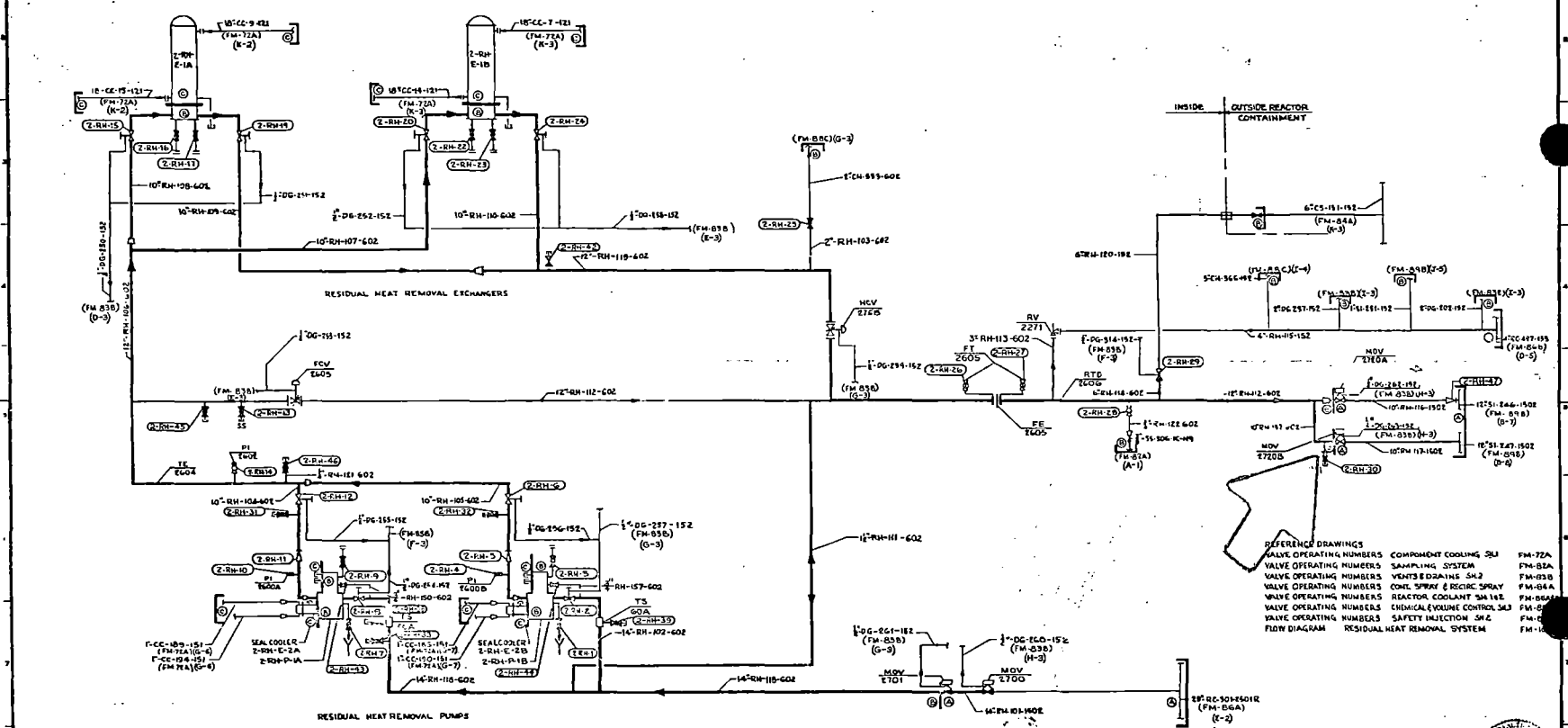
**MATERIAL:** 304 STAINLESS STEEL .188" T  
**Welds 1, 2&3:** 16" Diameter  
 50.24" Circumference  
**SUPPORTS:** 4 Welded Supports  
**NOZZLE TO VESSEL WELDS:** 3" diameter  
**BOLTING:** 8 bolts .75" diameter  
**0 Reference :** Centerline of 3" Inlet Nozzle



1/361



11548-FM-87A



- REFERENCE DRAWINGS:
- VALVE OPERATING NUMBERS COMPONENT COOLING S&I FM-72A
  - VALVE OPERATING NUMBERS SAMPLING SYSTEM FM-85A
  - VALVE OPERATING NUMBERS VENTS & DRAINS S&I FM-85B
  - VALVE OPERATING NUMBERS COND. SPRAY & RECIRC. SPRAY FM-85A
  - VALVE OPERATING NUMBERS REACTOR COOLANT S&I S&I FM-85B
  - VALVE OPERATING NUMBERS CHEMICAL VOLUME CONTROL S&I FM-85C
  - VALVE OPERATING NUMBERS SAFETY INJECTION S&I FM-85D
  - FLOW DIAGRAM RESIDUAL HEAT REMOVAL SYSTEM FM-112

**FOR REFERENCE ONLY**

THE INFORMATION ON THIS DRAWING MAY NOT BE COPIED OR USED FOR ANY OTHER THAN THE CONSTRUCTION, MAINTENANCE OR REPAIR OF THE PLANT FACILITY ENCLOSED IN THE TITLE BLOCK.

**VALVE OPERATING NUMBERS  
RESIDUAL HEAT REMOVAL**

1972 EXTENSION - SURVEY POWER STATION  
**VIRGINIA ELECTRIC AND POWER COMPANY**  
 HYDRO & WATER RESOURCES DIVISION CORPORATION  
 BOSTON, MASS.

DRAWING NUMBER **11548-FM-87A**

NO.	DESCRIPTION	DATE	BY	CHKD.	APP'D.	REVISION	DESCRIPTION	DATE	BY	CHKD.	APP'D.
1	MARKED IN BOUNDARIES	01-12-84	JR								
2	REVISION	01-12-84	JR								



ULTRASONIC THICKNESS REPORT  
NDE-UT-FORM 5

VIRGINIA ELECTRIC AND POWER COMPANY

STATION: 1 Surry UNIT: 2 II DATE: 3 5-24-85 PROCEDURE: 4 NDE-UT-4 SYSTEM: 5 Sonic MKI

ITEM COMPONENT INSPECTED: 6 Dwg. VIR-1-4302 ID NO.: 7 Valve 2720B Loop 3 10" RHR Return

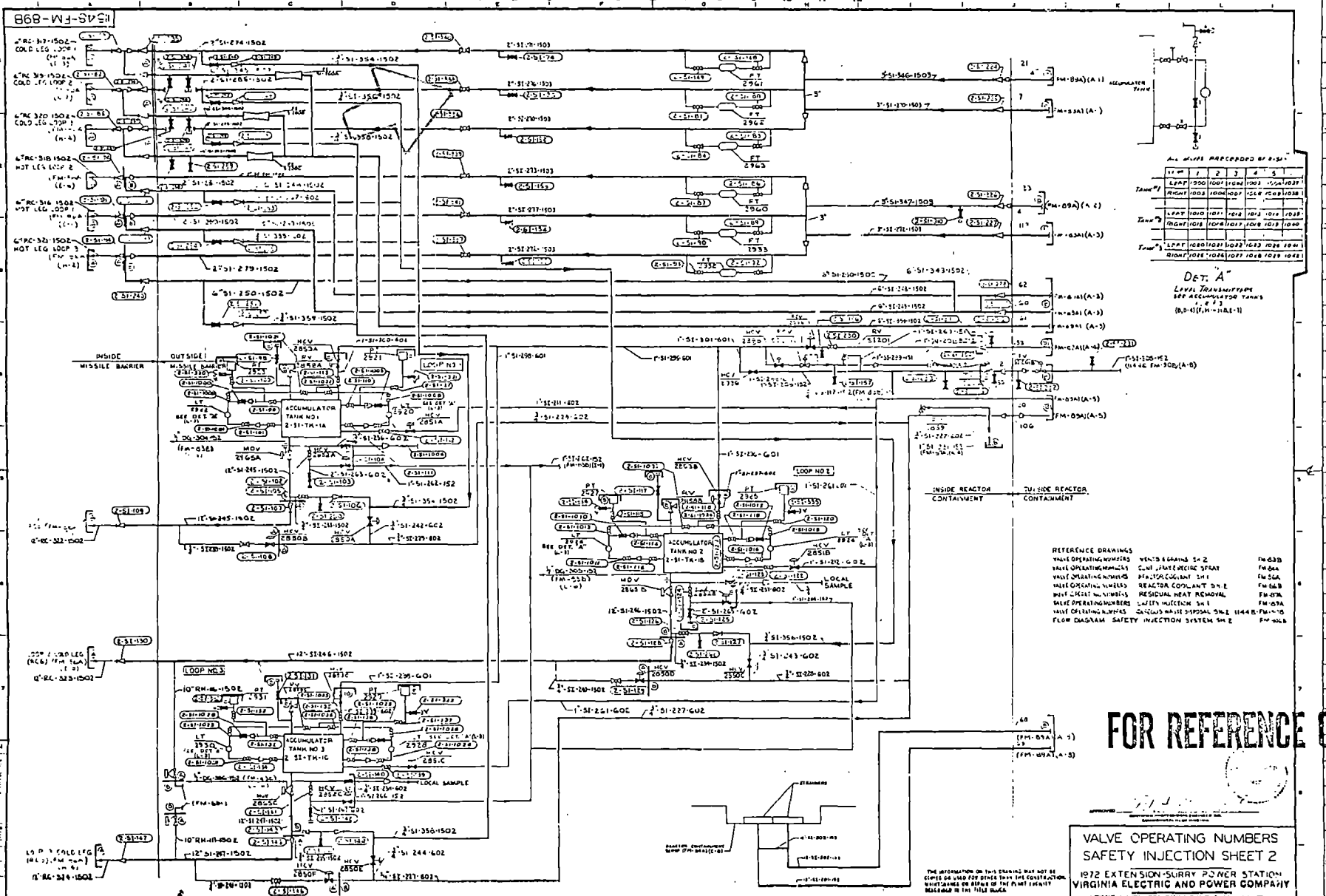
INSTRUMENT: 8 S/N 11221E COUPLANT: 9 Batch 8225 Sonotrace 40 CALIBRATION BLOCK: 10 VIR-1 TEST PERFORMED BY: 11 John S. Brode

TRANSDUCER: 12 1" SIZE FREQUENCY: 13 0.5 MHz SCANNING TECHNIQUE: 14 SPOT LEVEL OF CERTIFICATION: II

NOMINAL MATERIAL THICKNESS: 15 N/A MIN. THICKNESS ACCEPTABLE: 16 N/A MAX. THICKNESS ACCEPTABLE: 17 N/A SEE ATTACHED SKETCH FOR CHECK POINT LOCATIONS: 18 N/A

LOCATION	READING	LOCATION	READING	LOCATION	READING
Valve # <sup>19</sup> 2720B	<sup>20</sup> Note; Unable to achieve backwall				
possibly due to	high attenuation of coarse grain				
structure	JSB 5-24-85				

VEPCO  
J.S. Brode  
NDE REVIEW  
MAD  
5/25/85



All valves marked on this sheet

Valve #	1	2	3	4	5
TANK #1	1000	1001	1002	1003	1004
TANK #2	1005	1006	1007	1008	1009
TANK #3	1010	1011	1012	1013	1014
TANK #4	1015	1016	1017	1018	1019
TANK #5	1020	1021	1022	1023	1024

DET. A  
LEVEL TRANSMITTERS  
SEE ACCUMULATOR TANKS  
1 & 2  
(SI-311, SI-312, SI-313)

- REFERENCE DRAWINGS
- VALVE OPERATING NUMBERS VENT'S REMAINS SH-2 FM-630
  - VALVE OPERATING NUMBERS C.W. JUTE REMOTE SPAN FM-604
  - VALVE OPERATING NUMBERS REACTOR COOLANT SH-1 FM-564
  - VALVE OPERATING NUMBERS REACTOR COOLANT SH-2 FM-669
  - VALVE OPERATING NUMBERS RESIDUAL HEAT REMOVAL FM-678
  - VALVE OPERATING NUMBERS SAFETY INJECTION SH-1 FM-634
  - VALVE OPERATING NUMBERS SAFETY INJECTION SH-2 11448 FM-110
  - FLOW DIAGRAM SAFETY INJECTION SYSTEM SH-2 FM-608

**FOR REFERENCE**

**VALVE OPERATING NUMBERS  
SAFETY INJECTION SHEET 2**

1972 EXTENSION-SURRY POWER STATION  
VIRGINIA ELECTRIC AND POWER COMPANY

BYRNE & WOODSTEN ENGINEERING CORPORATION  
BOSTON, MASS.

DATE: 11/5/83  
DRAWING NUMBER: 11548-FM-69E

NO.	DESCRIPTION	DATE	BY	CHKD.	APP'D.	REVISION
12	ADD 10" DIA. COLE LEG (SEE 11548-FM-69E)	11/5/83	...	...	...	...
10	...	...	...	...	...	...
9	...	...	...	...	...	...
8	...	...	...	...	...	...
7	...	...	...	...	...	...
6	...	...	...	...	...	...
5	...	...	...	...	...	...
4	...	...	...	...	...	...
3	...	...	...	...	...	...
2	...	...	...	...	...	...
1	...	...	...	...	...	...