October 11, 1985

Docket No. 50-281

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Docket file
ORB#1 RDG
NRC PDR LPDR
Memo file
HThompson
CParrish
T. Chan w/encl.

MEMORANDUM FOR: Roger D. Walker, Director
Division of Reactor Projects
Region II

FROM: Hugh L. Thompson, Jr., Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: LICENSING ACTION REVIEWS FOR SURRY POWER STATION, UNIT 2 - ASME XI INSPECTION RELIEF REQUEST (TAC 59754)

Your assistance is requested in conducting a review of the enclosed submittal from the Virginia Electric and Power Company (VEPCO), dated September 19, 1985, for Surry Power Station Unit 2. The product expected from you as a result of your review is a complete safety evaluation report. Your reviewers should use the Standard Review Plan (SRP) and Standard Technical Specifications (STS) as guidance in determining acceptance criteria, recognizing, of course, that for operating reactors, the criteria in these documents are not requirements.

In accordance with NRR Office Letter No. 44, each safety evaluation performed by a technical division shall have a separate SALP input. For purposes of these reviews, the Regional personnel involved are considered part of the technical divisions. Therefore, we are requesting that your forwarding memorandum contain a SALP input for the safety evaluation.

Work for the VEPCO submittal concerning the proposed changes has been discussed with D. Gruber of your staff. The TAC number for this review is 59754. The requested completion date is November 30, 1985. Contact with the licensee on this review effort or any significant additional information deemed necessary should be obtained through the NRR Project Manager or with his concurrence. The Project Manager for this plant is Terence Chan and he can be reached at 492-8460.

Frank Miraglia/for

Hugh L. Thompson, Jr., Director
Division of Licensing
Office of Nuclear Reactor Regulation

Enclosure:
As stated

CONTACT:
T. Chan
(301) 492-8460

*ORB#1:DL	ORB#1:DL	BC-ORB#1:DL	AD/OR:DL	D:DL
CParrish	TChan;ps	SVarga	GLainas	HThompson
10/ 9/85	10/9 /85	10/ /85	10/11 /85	10/11 /85

* See next page for concurrence

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STEWART,W.L. Virginia Power (Virginia Electric & Power Co.)
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Requests relief from certain ASME Boiler & Pressure Vessel Code,Section XI requirements,per 10CFR50.55(a).Bases for request discussed.

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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, Vepco 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.

A047
1/1

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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C1.3	C-C	Welded support (IWS)	surface

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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.

The following estimated doses are provided for each component examination (assuming average weld preparation time):

Regenerative Heat Exchanger — 7000 mr/hr Contact; 3000 mr/hr 12 inches; 400-1400 mr/hr general area

TASK	MAN HOURS	
Insulation Removal	3	
Weld Preparations	3	
Inspection	2	
Reinsulation	3	
TOTAL	11	15 man-rem (estimate)

Seal Water Return Filter — 2000 mr/hr Contact (general area unknown)

TASK	MAN HOURS	
Weld Preparations	1	
Inspection	2	
TOTAL	3	6 man-rem (estimate)

As an alternative, it is requested that the normal hydrostatic pressure tests be accepted in lieu of the previously described examinations. These hydrostatic pressure tests were successfully completed in conjunction with their VT-2 examination as follows:

Component	Date test Completed	Test Pressure
Regen Hx (charging side)	June 4, 1985	3427 psig
Regen Hx (letdown side)	June 30, 1983	2340 psig
Seal Water Return Filters	May 2, 1985	192 psig

Acceptance of this relief request would greatly reduce exposure of personnel and would be commensurate with our ALARA practice.

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 atlernative 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 (attachement 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.

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

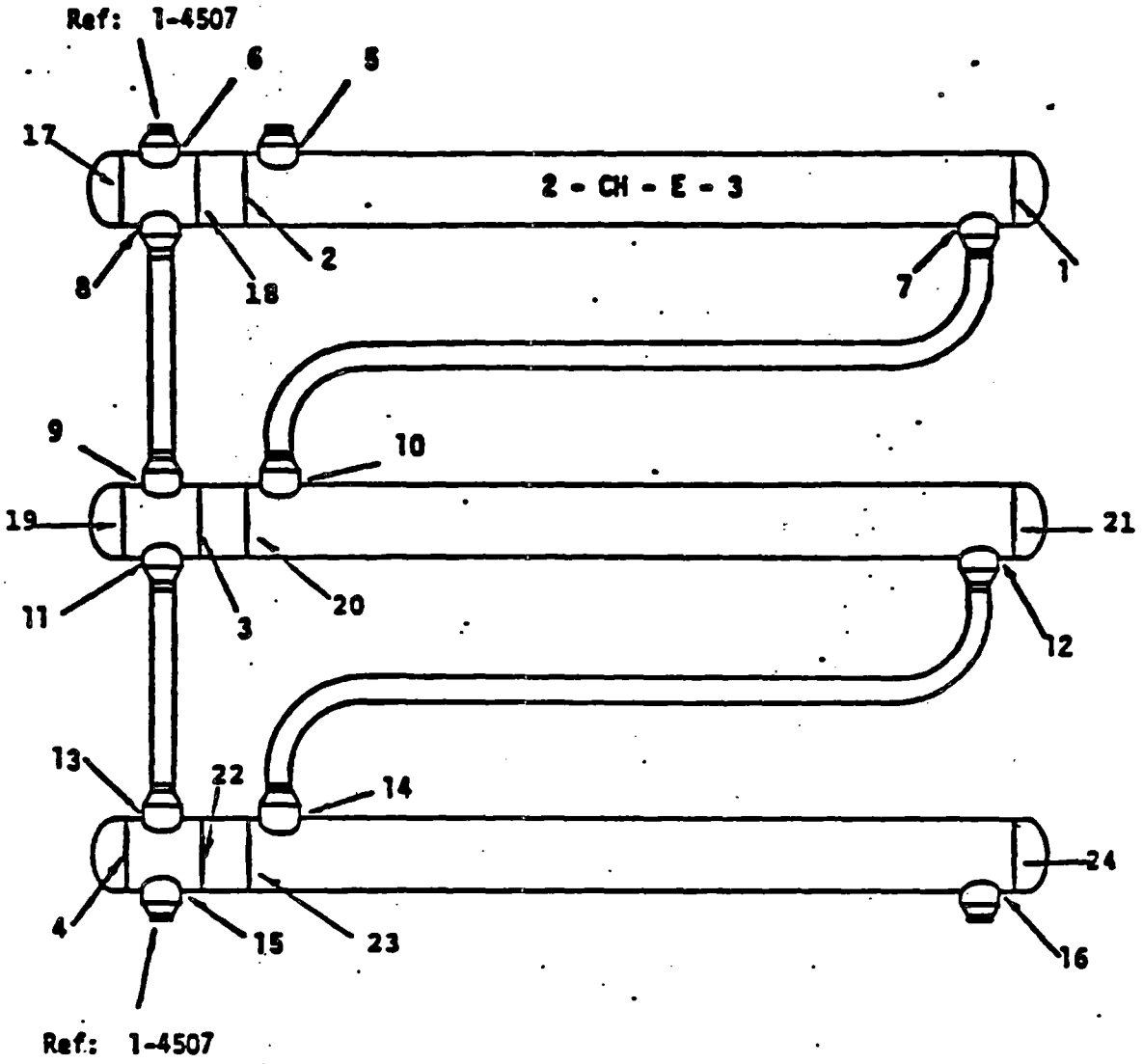
Mr. D. J. Burke
NRC Resident Inspector
Surry Power Station

ILLUSTRATIVE ONLY ATTACHMENT 1 VIR-1-3200

Rev. 0

REGENERATIVE HEAT EXCHANGER

01/01/84



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

Dia.: 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

ATTACHMENT 2

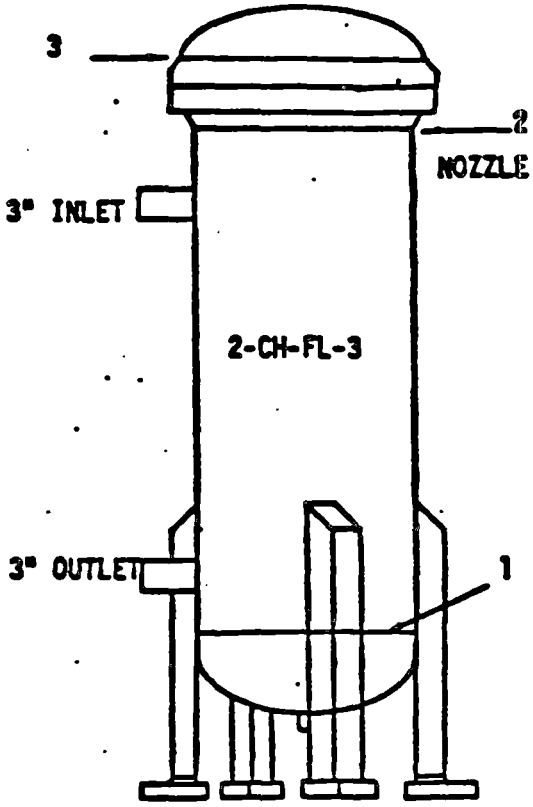
ILLUSTRATIVE ONLY

VIR-2-1320

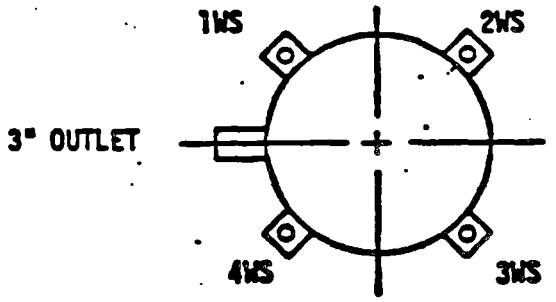
Rev. 0

01/01/84

SEAL WATER RETURN FILTER

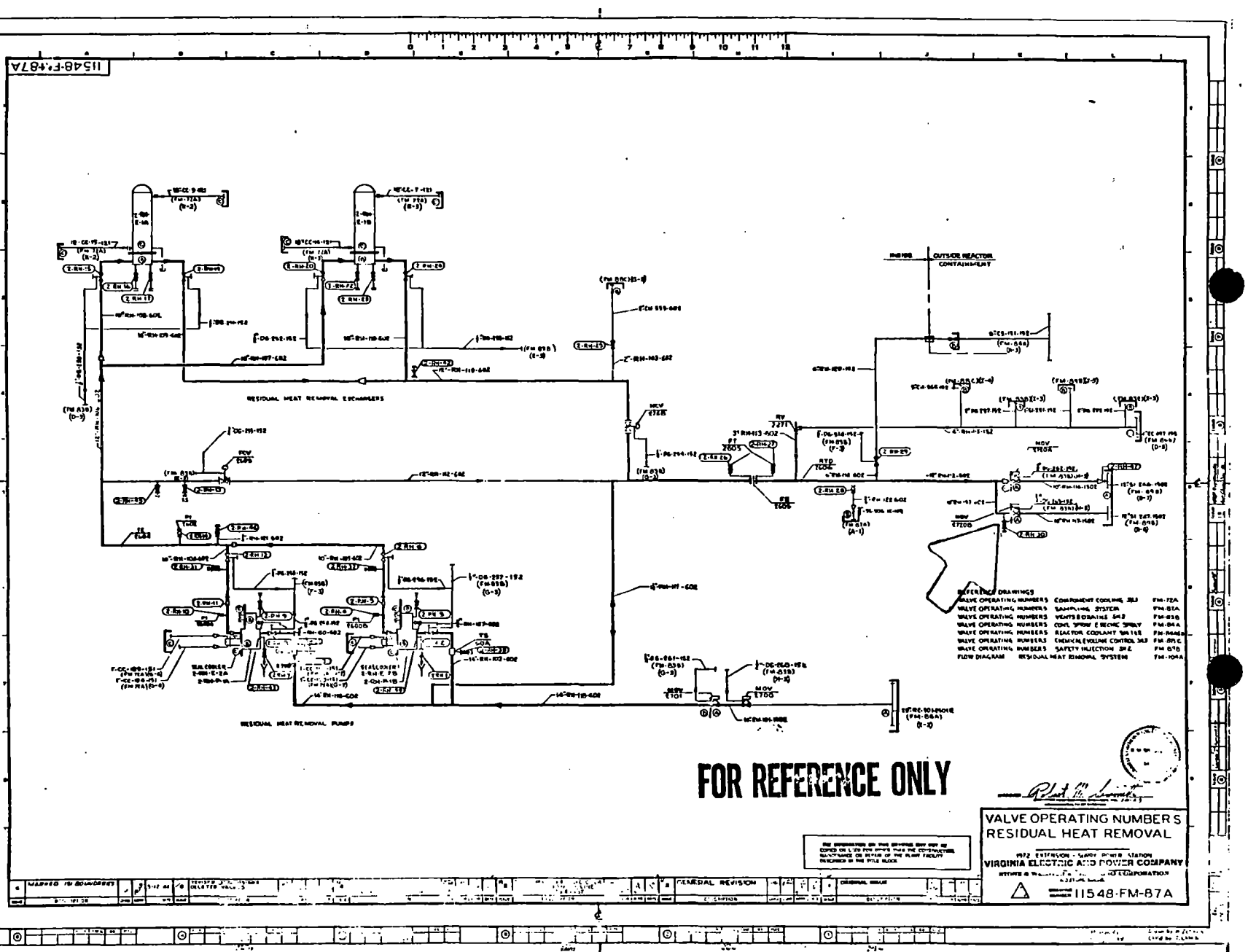


MATERIAL: 304 STAINLESS STEEL .188"T
Welds 1, 2&3 : 16" Diameter
50.24" Circumference
SUPPORTS: 4 Welded Supports
NOZZLE TO VESSEL WELDS: 3" diameter
BOLTING: 8 bolts .75" diameter
0 Reference : Centerline of 3" Inlet Nozzle



1/36/

ATTACHMENT 3



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

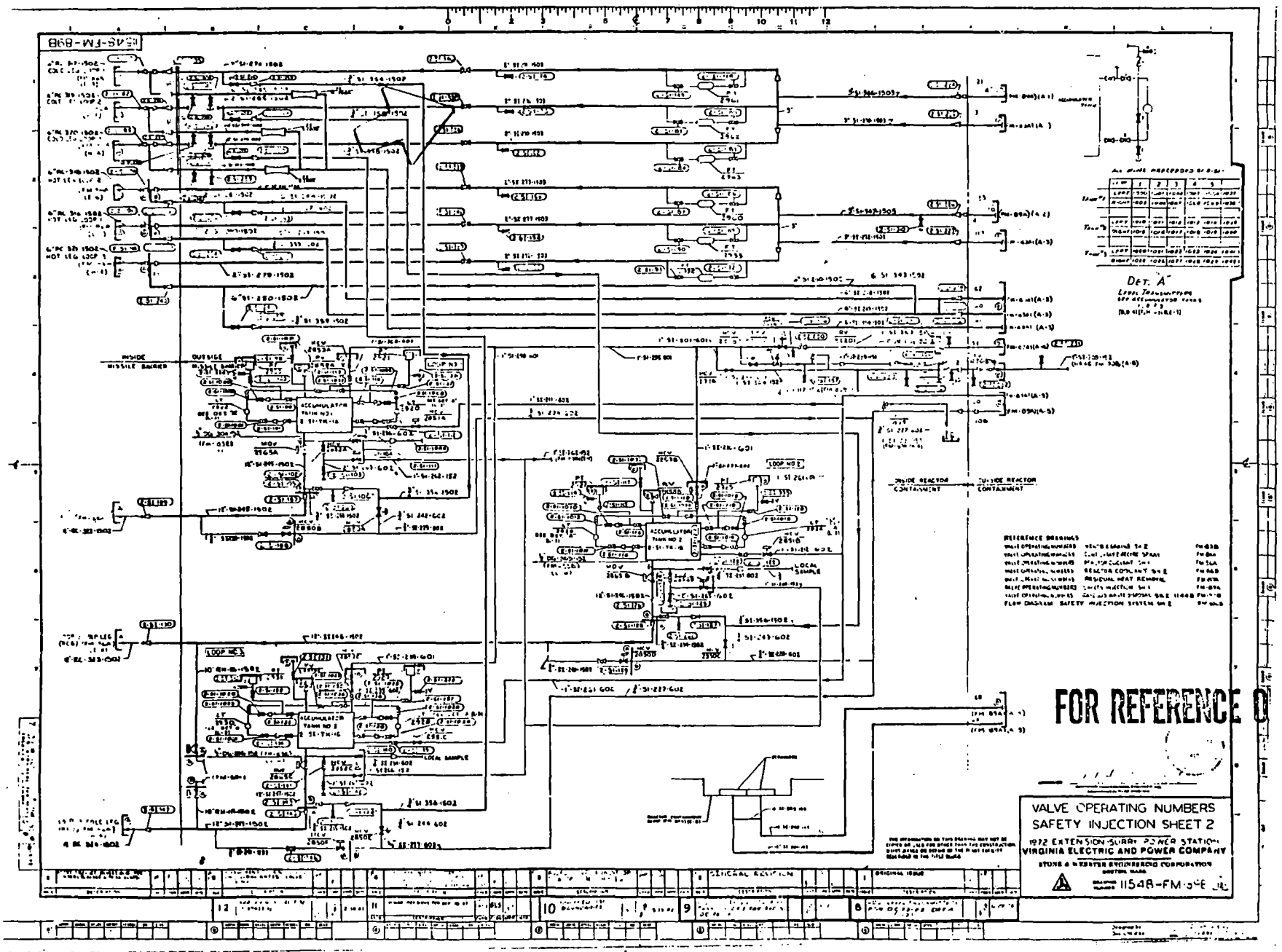
INSTRUMENT: 8 S/N 11221E	COUPLANT: Batch 8225 9 Sonotrace 40	CALIBRATION BLOCK: 10 VIR-1	TEST PERFORMED BY: 11 John S. Brode
TRANSDUCER: SIZE 1" FREQUENCY 0.5 MHZ 13	SCANNING TECHNIQUE: 14 SPOT ✓ CONTINUOUS ___		LEVEL OF CERTIFICATION: 12 II
NOMINAL MATERIAL THICKNESS: 15 N/A	MIN. THICKNESS ACCEPTABLE: 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
19	20				

Valve #2720B Note: Unable to achieve backwall possibly due to high attenuation of coarse grain structure JSB 5-24-85

VEPCO NDE Review [illegible] 5/25/85 MWD 5/25/85

ATTACHMENT 4



ATTACHMENT 5