VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

September 12, 1994

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. 94-414
SPS/ETS
Docket No. 50-280
License No. DPR-32

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNIT 1
THIRD INTERVAL INSERVICE INSPECTION PROGRAM
ADDITIONAL INFORMATION REQUEST

Your letter (Serial No. 94-414, dated June 8, 1994) requested additional information concerning the Surry Unit 1 third interval ISI program. This additional information has been provided in Attachment 1 to this letter.

As a result of our review of the information requested and recent ASME Code developments, Relief Request 4 (concerning hydrostatic testing of the component cooling water system) is no longer deemed necessary and is withdrawn. With the recent ASME approval of Code Case N-498-1, Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems and the relatively long duration of time before applicable third interval testing is required, adequate time should be available to permit endorsement of this Code Case through the normal Regulatory Guide 1.147 revision process. If this issue has not been resolved by the time 10-year testing is required, separate correspondence will be submitted for the specific areas needing relief.

Should you have any questions or require additional information, please contact us.

Very truly yours,

R. F. Saunders for
James P. O'Hanlon
Senior Vice President - Nuclear

Attachment

A047 1/1

cc: U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Atlanta, Georgia 30323

Mr. Morris Branch
NRC Senior Resident Inspector
Surry Power Station

ATTACHMENT 1

ADDITIONAL INFORMATION REQUESTED ON SURRY UNIT 1 THIRD INTERVAL ISI PROGRAM

A. NRC: Table IWB-2500-1, Examination Category B-G-1, Note 3, requires selection of bolting on heat exchangers, piping, pumps, and valves for examination be limited to those components selected for examination under Examination Categories B-B, B-J, B-L-2, and B-M-2.

In review of pump bolting selected for inspection, the staff noted that the pump bolting selection was associated with B-L-1 versus B-L-2, as the 89 Edition of Section XI requires. Please provide clarification and/or technical justification regarding the above discrepancy.

Response: The Code requires that the bolting selected for Category B-G-1 examinations coincide with the pump selected for examination under Category B-L-2. This was not indicated in the plan for the following reasons:

a) Category B-L-2 requires a visual VT-3 examination of our Class 1 reactor coolant pump casing internal pressure boundary surfaces, when one of the pumps is disassembled for maintenance, repair or volumetric examination. It was not known at the time of the plan development, which, if any, of the reactor coolant pumps would be disassembled for maintenance or repair.

b) Surry Unit 1 also uses Code Case N-481, Alternate Examination Requirements for Cast Austenitic Pump Casings Section XI, Division 1. This has eliminated the possibility of pump disassembly due to the volumetric examination requirement of Category B-L-1.

c) Code personnel were contacted regarding pump bolting inspections if a pump was not dissambled for inspection (B-L-2) during the interval. In the opinion of the committee members, it was not the Code's intent to eliminate the bolting examination requirements if a pump was not disassembled over the interval. Therefore, a set of pump bolts was included in the plan to ensure that the examination was performed.

If pump disassembly occurs, the plan will be modified to indicate that bolting examinations were performed on the disassembled pump. Otherwise, the pump identified in the plan will receive the required bolting examination to satisfy Category B-L-2.

B. NRC: Paragraph 10 CFR 50.55a(b)(2)(iv) requires that appropriate ASME Code Class 2 piping welds in the Residual Heat Removal (RHR), Emergency Core Cooling (ECC), and Containment Heat Removal (CHR) Systems be examined. The staff believes that piping welds in these systems should not be completely exempted from inservice volumetric examination based on Section XI exclusion criteria contained in Table IWC-2500-1.

In the review of Class 2 piping welds selected for examination, the staff noted that a significant number of welds in the Containment Spray and Safety Injection Systems are excluded from examination based on wall thickness. For example, all welds in the Containment Spray System (CSS) on the discharge side of the containment spray pumps have been excluded from examination. The CSS piping on the discharge side of the pumps is a critical part of the system that is relied on to function during emergency conditions. This portion of the CSS contains stagnate oxygenated borated water, which has been found to be a major contributor to Intergranular Stress Corrosion Cracking in stainless steel piping. To provide assurance of the structural integrity of the thin-walled welds, the NRC recommends that Licensees perform an augmented volumetric examination on a small percentage, specifically 7.5% of welds in those portions of lines excluded from examination. The licensee is requested to address this concern.

Response: The selections of Class 2 piping welds meet and exceed the requirements of Table IWC-2500-1. The Code requires in note 2(a) (Category C-F-1) that the selected welds be prorated by the number of nonexempt welds in a system. This would allow some systems to have less than 7.5% of the nonexempt welds selected for that system. The selection at Surry used the code requirements, and then increased any system with less than the 7.5% up to that amount without reducing the other weld selections. The selections were made on welds (C5.10) 0.375 inch wall-thickness or greater as required by the Code. The Containment Spray and Safety Injection Systems have enough welds of >0.375 inch thichness to meet the Code selection requirements or the system limitation of 7.5% of the nonexempt welds, which ever was more.

The Containment Spray (CSS) System distribution of selections are located in the suction piping as a result of using the Code required 0.375 inch wall-thickness limitation. However, weld 1-19 on line 8"-CS-34-153 is scheduled for a PT/UT (surface/volumetric) examination to meet Surry's Technical Specification augmented inspection requirements for sensitized stainless steel. This weld is located on the discharge side of containment spray pump, 1-CS-P-1B. Additionally, one of the welds selected on the suction side of the pumps will be replaced with one selected on the discharge side of 1-CS-P-1A. This weld will receive a volumetric and surface examination. The Code requirements would be maintained.

The Safety Injection (SI) System does include both suction and discharge selections. However any thin-walled piping was not selected again, because of the Code required >0.375 inch wall-thickness limitation in item C5.10.

Two additional welds will be selected on certain thin-walled (<0375 inch) SI piping. These welds will receive a volumetric and surface examination. All Code requirements would be maintained.

C. NRC: Relief Request SR-003: Examination Category B-D, Item B3.120 requires a 100% volumetric examination of the nozzle inside radius section of the pressurizer nozzles.

The Licensee proposes a visual (VT-2) examination of the pressurizer surge line nozzle area to be performed during the normally scheduled pressure test (Class 1) each refueling outage.

Paragraph IWA-2240, "Alternative Examinations", of the ASME Code Section XI states, "Alternative examination methods, a combination of methods, or newly developed techniques may be substituted for the methods specified in this Division, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those of the specified method." The above mentioned Code-required examination (VT-2 visual during pressure test) is not considered an alternative examination. Please provide additional information or an alternative examination that will ensure operational readiness of the subject examination areas.

Response: The Code requires a volumetric examination of the pressurizer surge nozzle's inside radius section. The relief request details the impracticality of performing an ultrasonic examination. The same impracticality would exist for radiographic examinations with additional configuration constraints for film and source placements. A surface examination would again require significant preparation to access the area in question, and would not address the inside radius section of the surge nozzle. An I.D. visual (VT-1) examination is considered impractical, since the area in question is covered by a welded retaining basket. This basket has only 3/8 inch (nominal) holes, making any penetration into the area of interest extremely difficult. Additionally, the area is partially covered by a thermal sleeve (drawing attached).

The visual (VT-2) examination is the only practical Code examination that may be performed. The integrity of the nozzle is additionally monitored in accordance with Technical Specifications, which requires leak rate monitoring of the Reactor Coolant System through calculation and radionuclide detection means. The nozzle's inside radius sections located on the top head of the pressurizer will receive a Code examination, which provides an assurance of integrity from a sampling perspective. As such, it is our position that sufficient alternatives to the

Code requirements exist to monitor the integrity of the pressurizer surge nozzle.

D. NRC: Relief Request SR-005: The existing calibration blocks at Surry Power Station, Unit 1, were designed and fabricated before guidelines of ASME Section XI were developed and approved. Please provide a list of the ultrasonic calibration standards being used during the third 10-year interval ISI at Surry Power Station, Unit 1. The list should include the calibration standard identifications, material specifications, sizes, and any variance from Code requirements.

Response: See attached list of calibration standards.

E. NRC: Relief Request No. 4: IWD-2500-1 requires a system hydrostatic test in accordance with IWD-5223, System Hydrostatic Test, for Class 3 pressure retaining piping.

The Licensee stated that the Component Cooling Water System is utilized for cooling important safety-related components associated with the nuclear core. In addition, the licensee states that portions of this system cannot be isolated, in most instances, without removing fuel totally from the core, and that this action would be time consuming and delay unnecessarily the refueling process. It appears that the required hydrostatic test could be done in conjunction with vessel inspections requiring total removal of the fuel. Please provide further justification for not performing the Code-required hydrostatic test.

Response: Since Code Case N-498-1, Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems, was recently approved by ASME, the need for this relief request will probably not exist, when the third interval 10-year hydrostatic tests are required (approximately 10 years from now). As such, Relief Request No. 4 is withdrawn. If at a later date the need for relief is again apparent (i.e., Code Case N-498-1 is not endorsed by the NRC), a separate relief request will be submitted identifying specific areas where impracticality exists for performance of hydrostatic tests in the component cooling water system along with the basis.

F. NRC: Relief request No. 11: IWA-5242(a), states that for systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure retaining bolted connections for visual examination VT-2.

The Licensee states that insulation will be removed and a direct visual inspection for evidence of leakage at pressure retaining-retaining bolting will be performed at the required frequency. However, the system/component may or may not be at pressure.

During a conference call held March 11, 1994, the licensee agreed to a

four-hour pressure test hold time prior to performing the VT-2 visual examination. Please confirm that the required VT-2 visual examination will be performed at test pressure after a 4-hour hold time at the required test pressure.

Response: Applicable insulated pressure boundary bolting inspected as described in Relief Request No. 11 will receive a visual (VT-2) examination without removing the insulation following a 4-hour hold time at the required test pressure.

G. NRC: Verify that there are no additional relief requests, other than those submitted July 16, 1993. If additional relief requests are required, the licensee should submit them for staff review.

Response: Separate correspondence has been submitted to utilize Code Cases N-416-1 (Serial No. 94-320, dated June 22, 1994), and N-524 (Serial No. 93-754, dated December 10, 1993) in the third interval. These code cases have not been approved by Regulatory Guide 1.147.

Additionally, the requirements of the first addenda to ASME/ANSI OM-1987, Part 4, are presently being reevaluated for visual examination of snubbers. It is anticipated that a relief request will be needed to clarify administrative differences between this standard and the guidance provided in Generic Letter 90-09, "Alternative Requirements For Snubber Visual Inspection Intervals and Corrective Actions", which was incorporated in Technical Specification 4.17.

SURRY NUCLEAR POWER PLANT UNIT #1 AND #2
CALIBRATION BLOCKS

IDENTITY	NOMINAL SIZE/SCHEDULE	IDENTITY OR HEAT NUMBER	MATERIAL	COMPONENT/SYSTEM
		PIPING BLOCKS		
VIR-1A	2.758"T x 12"L x 3"W	5160C-1	SA351 GR CF8A	Reactor Coolant Pipe (from ELL Side)
VIR-2	30" 1.1"T	3G5682	SA5I5 GR 70 CS	30" Mainsteam Piping
VIR-3	14" SCH 140 1.25"T	2637-4-2	SA376 TP 316 SS	14" Feedwater Piping
VIR-4	14" SCH 80 .750"T	L45865	SA106 GR B CS	14" Feedwater Piping
VIR-4A	14" SCH 80 .750"T	48082	SA355 GR P22	14" Feedwater (80-Repl) Piping
VIR-5	14" SCH 40 .438"T	71771	SA358 TP 316 SS	14" SCH 40 Piping
VIR-6	12" SCH 140 1.125"T	F0959	SA312 TP 304 SS	12" SCH 140 Piping
VIR-7	12" SCH 40S .375"T	805222-1	SA312 TP 304 SS	12" SCH 40S Piping
VIR-9	10" SCH 140 1.00"T	D61232	SA312 TP 304 SS	10" SCH 140 Piping
VIR-10	10" SCH 120 .844"T	6-448	SA312 TP 304 SS	Seal Water Injection Filter
VIR-11	10" SCH 40S .365"T	1971-12-1-2	SA312 TP 316 SS	10" SCH 40S Piping
VIR-14	6" SCH 160 .719"T	M2060	SA376 TP 304 SS	6" SCH 160 Piping
VIR-15	6" SCH 120 .562"T	M9948	SA376 TP 316 SS	6" SCH 120 Piping
VIR-16	6" SCH 80 .432"T	N14446	SA106 GR B CS	6" SCH 80 Piping
VIR-17	31" 1.5"T	3G8217	SA515 GR 70 SS	32" Mainsteam Piping
VIR-18	4" SCH 160 .531"T	01038	SA312 TP 304 SS	CRDM
VIR-19	4" SCH 120 .438"T	M6108	SA376 TP 316 SS	4" SCH 120 Piping
VIR-20	3" SCH 160 .438"T	N7212	SA376 TP 316 SS	3" SCH 160 Piping

IDENTITY	NOMINAL SIZE/SCHEDULE	IDENTITY OR HEAT NUMBER	MATERIAL	COMPONENT/SYSTEM
VIR-21	2" SCH 160 .344"T	01003	SA376 TP 316 SS	2" SCH 160 Piping
VIR-32	6" SCH 40S .280"T	M9959	A312 TP 304 SS	6" SCH 40S Piping
VIR-33	8" SCH 40S .322"T	M0937	A312 TP 316 SS	8" SCH 40S Piping
VIR-34	16" SCH 80 .844"T	L21488	SA 106 GR B CS	16" Feedwater Piping
VIR-35	30" 1.810"T	67B344	SA155 KC60 CL 1 CS	30" Tee Mainsteam Piping
VIR-44	2.320"Tx27.5"IDx32.14"OD	J6954	A376 TP 304 N	RC Loop Pipe Block
VIR-45F	2.625"Tx31"IDx36.25"OD	J6959	A376 TP 304 N	RC Loop Pipe Block
		VESSEL BLOCKS		
VIR-8	12" SCH 20 .250"T	8051726	SA312 TP 304 SS	Seal Water Heat Exchanger
VIR-13	8" SCH 120 .719"T	M0176	SA312 TP 304 SS	Excess Letdown HT/Ex
VIR-23	6.2"T x 6"W x 21.8"L	B&W Piece 1	SA508 CL 2	RV-Closure Head-to-Flange Weld
VIR-24	5.2"T x 6"W x 18.2"L	B&W Piece 1	SA508 CL 2	Channel Head to Tubesheet
VIR-25	4.375"T x 6"W x 15.5"L	D8366-5	SA533 GR A CL 1	Pressurizer
VIR-26	3.5"T x 6"W x 18.2"L	D8366-5	SA533 GR A CL 1	Steam Generator (Sec. Side)
VIR-29A	.627"T x 4"W x 9"L	42204	A240 TP 304 SS	Non Regen. Heat Exchanger
VIR-30	.313"T x 4"W x 9"L	30106	A240 TP 304 SS	Volume Control Tank
VIR-12	8" SCH 160 .906"T	2626-8-1	SA312 TP 304 SS	Regen Heat Exchanger

IDENTITY	NOMINAL SIZE/SCHEDULE	IDENTITY OR HEAT NUMBER	MATERIAL	COMPONENT/SYSTEM
		SIZING BLOCKS		
VP-.25-CS-03	.25"	321-0676	A36	1/4" Sizing Block CS
VP-.50-CS-03	.50"	331-0889	A36	1/2" Sizing Block CS
VP-.75-CS-03	.75"	1-57528	A36	3/4" Sizing Block CS
VP-1.0-CS-03	1.00"	333-0889	A36	1.0" Sizing Block CS
VP-1.25-CS-03B	1.25"	85489	A36	1.25" Sizing Block CS 10%-50%
VP-1.25 CS-03A	1.25"	85489	A36	1.25" Sizing Block CS 60%-90%
VP-1.50-CS-03B	1.50"	60378	A36	1.50" Sizing Block CS 10%-50%
VP-1.50-CS-03A	1.50"	60378	A36	1.50" Sizing Block CS 60%-90%
VP-1.75 CS-03B	1.75"	72674	A36	1.75" Sizing Block CS 10%-50%
VP-1.75-CS-03A	1.75"	72674	A36	1.75" Sizing Block CS 60%-90%
VP-2.0-CS-03B	2.00"	83427	A36	2.0" Sizing Block CS 10%-50%
VP-2.0-CS-03A	2.00"	83427	A36	2.0" Sizing Block CS 60%-90%
VP-.25-SS-03	.25"	130359	A479 TP 304	1/4" Sizing Block SS
VP-.50-SS-03	.50"	34214	A479 TP 304	1/2" Sizing Block SS
VP-.75-SS-03	.75"	70777	A479 TP 304	3/4" Sizing Block SS
VP-1.0-SS-03	1.00"	36463	A479 TP 304	1.0" Sizing Block SS
VP-1.25-SS-03B	1.25"	28498	A479 TP 304	1.25" Sizing Block SS 10%-50%
VP-1.25-SS-03A	1.25"	28498	A479 TP 304	1.25" Sizing Block SS 60%-90%
VP-1.50-SS-03B	1.50"	A13072	A479 TP 304	1.50" Sizing Block SS 10%-50%
VP-1.50-SS-03A	1.50"	A13072	A479 TP 304	1.50" Sizing Block SS 60%-90%
VP-1.75-SS-03B	1.75"	AH6895	A479 TP 304	1.75" Sizing Block SS 10%-50%
VP-1.75-SS-03A	1.75"	AH6895	A479 TP 304	1.75" Sizing Block SS 60%-90%
VP-2.50-SS-03B	2.50"	A14267	A479 TP 304	2.50" Sizing Block SS 10%-50%
VP-2.50-SS-03A	2.50"	A14267	A479 TP 304	2.50" Sizing Block SS 60%-90%
VP-3.0-SS-03B	3.00"	A14394	A479 TP 304	3.0" Sizing Block SS 10%-50%
VP-3.0-SS-03A	3.00"	A14394	A479 TP 304	3.0" Sizing Block SS 60%-90%

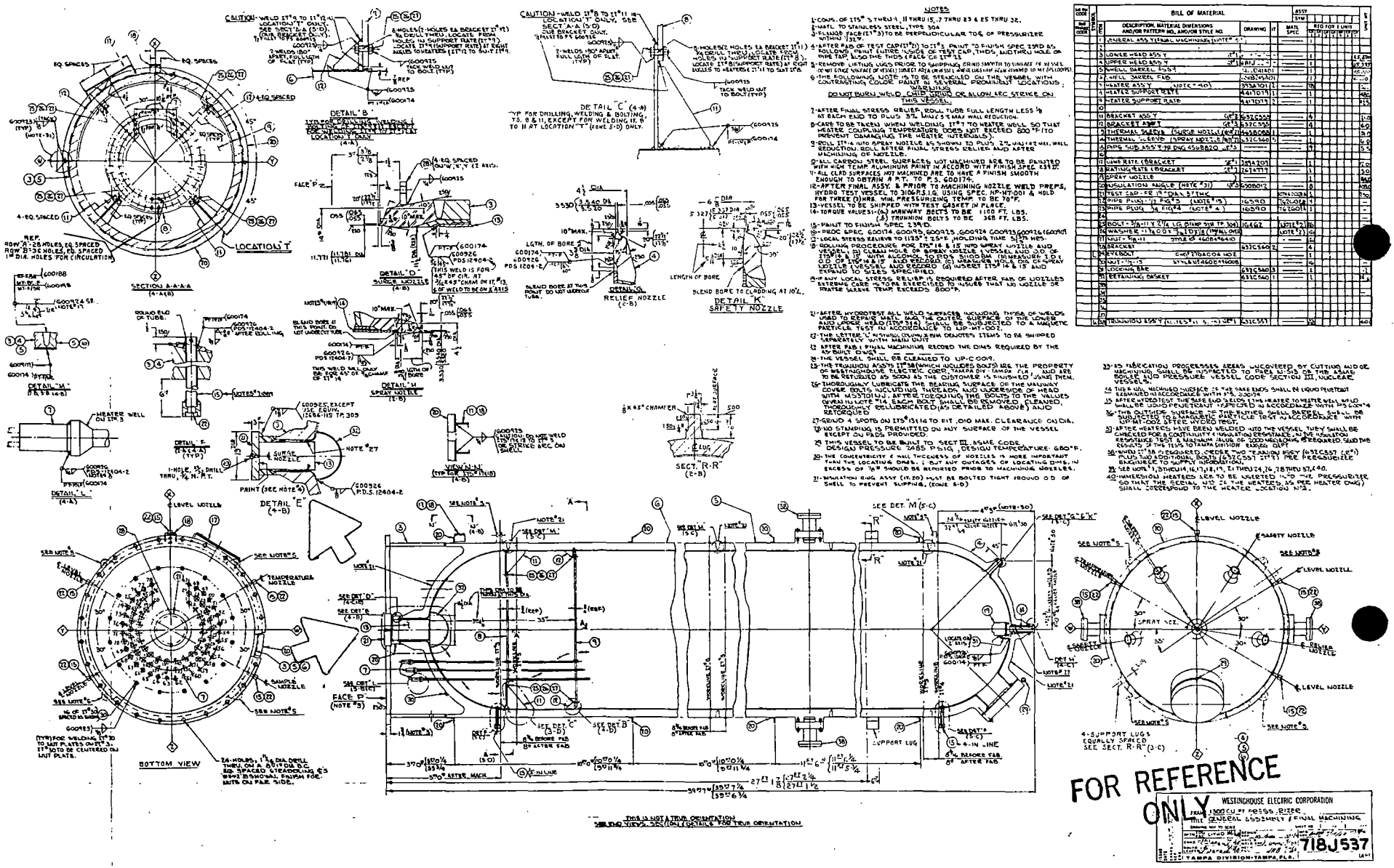
IDENTITY	NOMINAL SIZE/SCHEDULE	IDENTITY OR HEAT NUMBER	MATERIAL	COMPONENT/SYSTEM
		BOLTING BLOCKS		
VIR-36	5.75" Dia. x 10.5"L	112863	SA540 GR B24	Reactor Vessel Stud 80W80
VIR-37	5.75" Dia. x 18"L	112863	SA540 GR B24	Reactor Vessel-Stud 80W80
VIR-38	5.75" Dia. x 33"L	112863	SA540 GR B24	Reactor Vessel-Stud 80W80
VIR-39	4.32" Dia. x 18.25"L	112863	SA540 GR B24	Reactor Coolant Pump Stud
VIR-40	4.32" Dia. x 10.63"L	112863	SA540 GR B24	Reactor Coolant Pump Stud
VIR-41	4.32" Dia. x 6.81"L	112863	SA540 GR B24	Reactor Coolant Pump Stud
NDE-LS-88	2.62" Dia. x 22.5"L	60300	A286 Carpenter	Loop Stop Valve Bolt
LSVN-04	3.0" Dia. x 22.5"L	60300	A286 Carpenter	Loop Stop Valve Stud
RCP-03	4.5" Dia. x 30.5"L		SA540 GR B23	Reactor Cool Pump Bolt
RPV-03	6.0" Dia. x 63.25"L	X7225	SA540 GR B24	Reactor Vessel Closure Head Stud

NOTES:

NOTE 1: Notches for piping < 1" and vessels ≤1" thick are not staggered as specified by Figure III-3230-1. Satisfactory ultrasonic system calibration can be performed with the existing calibration blocks.

NOTE 2: Notches for piping calibration blocks < 1½" thick are located 1T from the end of block instead of a minimum of 1½" as specified by Figure III-3230-1. Satisfactory ultrasonic system calibration can be performed with the existing calibration blocks.

NOTE 3: Blocks VIR-23, VIR-24 and VIR-25 are partially clad instead of fully clad as shown by Figure T-441.1. The portion of the calibration blocks which contains the calibration reflectors is clad. Satisfactory ultrasonic system calibration can be performed with the existing calibration blocks.



FOR REFERENCE ONLY

WESTINGHOUSE ELECTRIC CORPORATION
1300 CU. FT. PRESS. SIZE
GENERAL ASSEMBLY & FINAL MACHINING
718J537
TAMPA DIVISION-TAMPA, FLA.

FIGURE 1-1. General Assembly and Final Machining