

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

June 9, 1980

Director of Nuclear Reactor Regulation
Attention: Mr. L. S. Rubenstein, Acting Chief
Light Water Reactors Branch No. 4
Division of Project Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Rubenstein:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

Enclosed for your review are requests for relief from ASME Section XI preservice and inservice inspection requirements for Watts Bar Nuclear Plant. It is TVA's intent to revise the Preservice and Inservice Inspection Program for Watts Bar to reflect these exceptions. We request that any NRC comments on the enclosed material be forwarded to us by July 1, 1980.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

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REQUEST FOR RELIEF ISI-2

Components: Reactor coolant pumps (four per unit)

Class: 1

Inspection Requirement: Visual examination of pump internal pressure boundary surfaces, examination category B-L-2.

Basis for Relief: In absence of required maintenance, disassembly of a reactor coolant pump solely to perform a visual examination of internal surfaces is impractical. This would represent an unnecessary employee exposure to high radiation and contamination areas and an excessive expense to TVA.

Time required for this major task of disassembly, examination, and reassembly would consume at least three weeks at 24-hours-per-day work. Radiation dose rates of the pump exterior will average 100-300 mrem/hour, and pump internal dose rates will average 10-20 rem/hour. This would result in a cumulative dose of 100 to 300 man-rem.

The benefit received from this major effort is minimal considering employee exposure, potential damage to safety-related equipment, and cost in dollars.

In addition, the two units at Watts Bar Nuclear Plant will operate under similar conditions. Therefore, we feel that if a pump from one of the units is disassembled for maintenance during a 10-year interval, the visual examination performed will be representative of the pump condition for each unit. This would avoid unnecessary employee exposure to the high radiation dose rates noted above. We conclude that if one pump is disassembled for maintenance during the 10-year interval, the visual examination performed satisfies examination category B-L-2 requirements for both units. Disassembly of the pump solely for visual examination is impractical.

Alternate Inspection: The internal surfaces of the reactor coolant pump casing will be visually examined whenever the surfaces are made accessible when a pump is disassembled for maintenance purposes. If during the 10-year interval, a pump from either unit is not disassembled for maintenance, a pump from one unit shall be examined from the exterior. This shall be accomplished by ultrasonic thickness measurements of the pump casing.

REQUEST FOR RELIEF ISI-3

Components: Valves exceeding 4-inch nominal pipe size

Class: 1

Inspection Requirement: Visual examination of valve internal pressure boundary surfaces, examination category B-M-2.

Basis for Relief: During routine maintenance, visual examinations of valve body internal pressure boundary surfaces are performed and documented under existing plant administrative procedures. Most class 1 valves, particularly containment isolation valves, are disassembled frequently for maintenance. In addition, the two units at Watts Bar Nuclear Plant will operate under similar conditions. If a valve from one of the units is disassembled for maintenance within a 10-year interval, we feel that the visual examination performed would be sufficient to satisfy the examination requirements for both units for that particular valve classification as defined in examination category B-M-2.

We conclude that if one valve in each group of valves of the same constructional design and manufacturer that perform similar functions is disassembled from either unit during the 10-year interval, the visual examination performed satisfies examination category B-M-2 requirements for both units.

Alternate Inspection

If a valve from a particular classification has not been disassembled as the end of the inspection interval approaches, a case-by-case study will be made to determine the practicality of disassembling a valve from one of the units solely for visual examination (Determine if draining the vessel would be required, etc.). If necessary, a request for relief will be issued at that time.

GLB:DAG

REQUEST FOR RELIEF ISI-4

Components: Pressure-retaining welds in piping

Class: 1 and 2

Inspection Requirement: Volumetric examination of longitudinal, circumferential, and pipe branch connection welds, examination categories B-F, B-J, C-F, and C-G.

Basis for Relief: In some cases it will be impractical to inspect all welds in accordance with paragraph T-532 of Article 5, Section V of the ASME code, i.e., removable hanger interference or valve and pump casings adjoining the welds. These welds will be noted on the ultrasonic examination data sheets.

Alternate Inspection: In addition to the visual examination performed during system leakage and hydrostatic pressure tests, a "best effort" ultrasonic examination will be performed. Also, a surface examination will be performed on accessible areas of the weld(s).

GLB:DAG

REQUEST FOR RELIEF ISI-5

Component: Steam generator (four per unit)

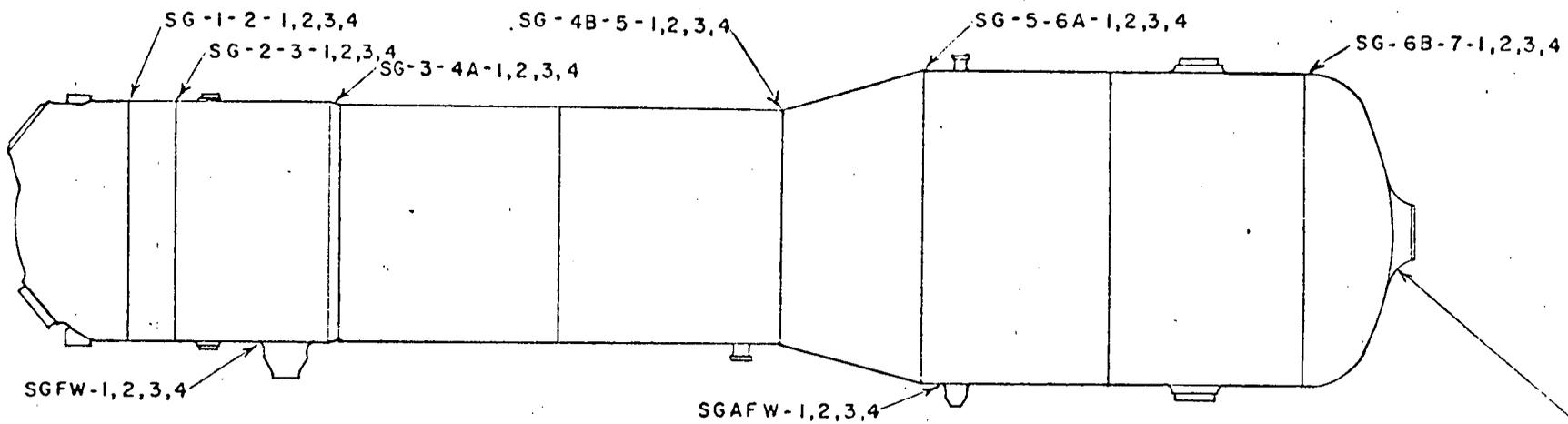
Class: 2

Inspection Requirement: Volumetric examination of circumferential shell welds, examination category C-A.

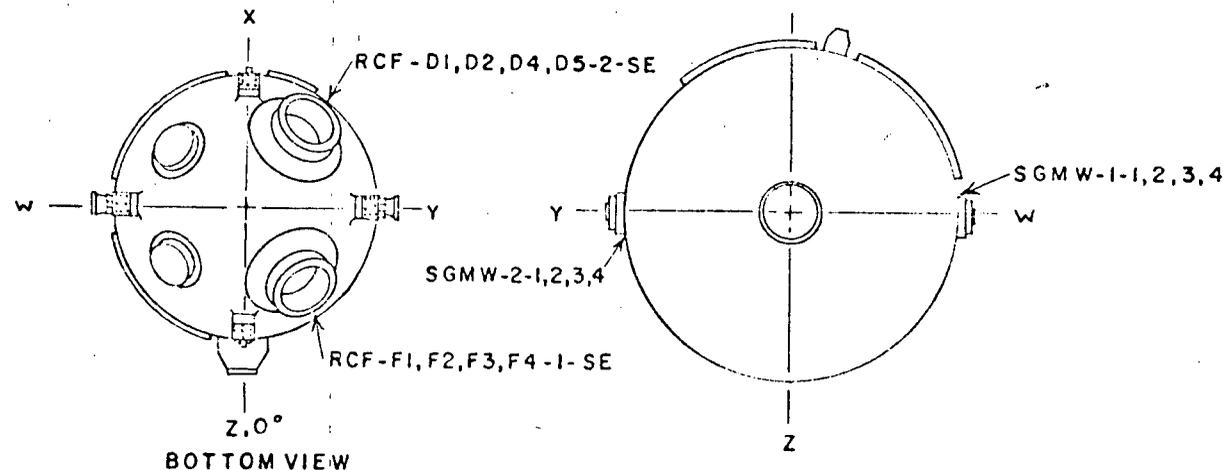
Basis for Relief: One circumferential shell weld on each generator is inaccessible due to the upper steam generator support brackets (weld numbers SG-4B-5-1, SG-4B-5-2, SG-4B-5-3, and SG-4B-5-4). See attached drawings. One weld on one generator will be examined on a "best effort" basis for the baseline inspection and during the four inservice inspection intervals in accordance with IWC-2411.

Alternate Inspection: None.

GLB:DAG
Attachments



4 MAIN STEAMNOZZLES
 WELD NOS.(TYPICAL):
 LOOP1, SGMS-1
 LOOP2, SGMS-2
 LOOP3, SGMS-3
 LOOP4, SGMS-4



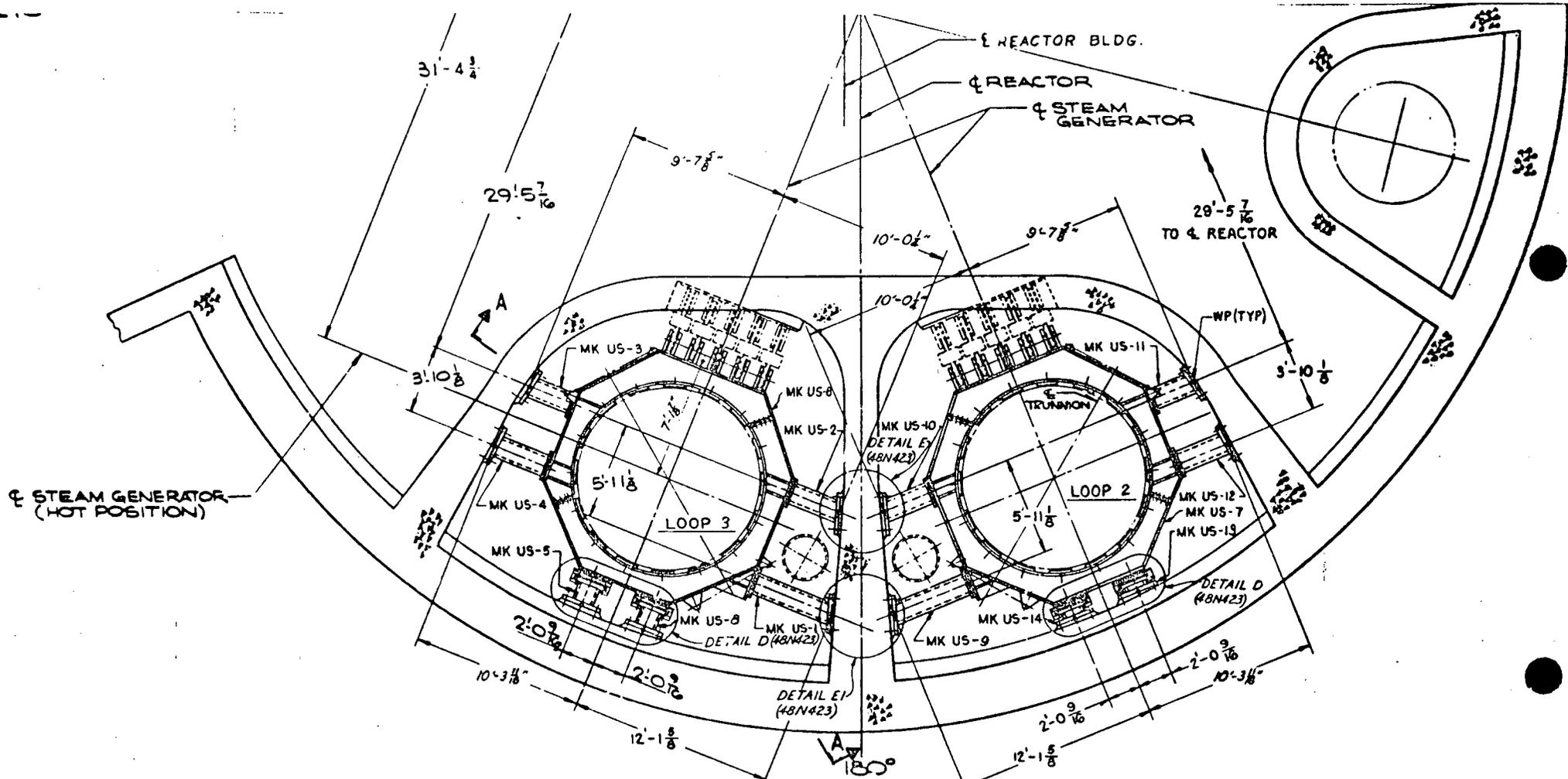
2.0°
 BOTTOM VIEW

TOP VIEW

LOOPS 1&3 AS SHOWN
 LOOPS 2&4 OPPOSITE HAND

REF. DWG.:CH-M-2547-B

TENNESSEE VALLEY AUTHORITY DEPARTMENT OF POWER PRODUCTION			
WRNP			
STEAM GENERATOR WELD MAP UNIT I			
SCALE	APPROVED	DATE	4-26-79
DATE	BY	CHKD	
ISSUED			CH-M-2660-B



UPPER STEAM GENERATOR SUPPORT ARRANGEMENT

FOR TRUNNION DETAILS
SEE DWG 48N428

UPPER RING
ROD END
EL. 758'-4 3/8 (COLD)
EL. 758'-6 1/8 (HOT)

STEAM GENERATOR

UPPER TRUNNIONS
ELEV 764'-9 13/16 (COLD)
ELEV 764'-11 1/16 (HOT)

EL 756'-7 7/8

UPPER SUPPORT STRUT
EL. 755'-6 1/8
(HOT POSITION)

PAUL-MORRIS
SHUBBER
MACHINE 2" FROM ROD PIVOT OF PD 1480C
ALL 5 SHUBBERS IN LOOPS 1&2, LOOP 2 ONLY

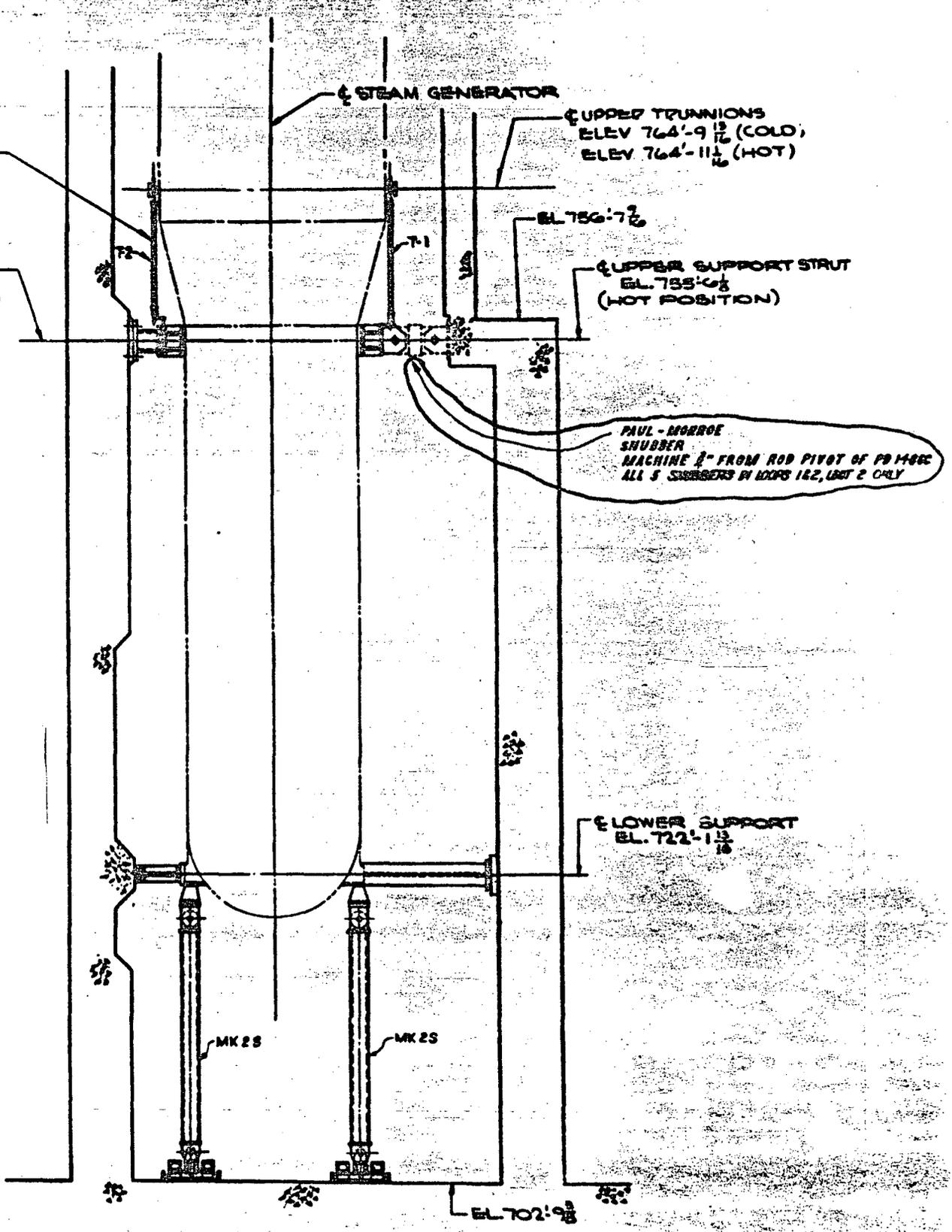
LOWER SUPPORT
EL. 722'-1 13/16

MK 2S

MK 2S

EL 702'-9 3/8

SECTION-A-A



REQUEST FOR RELIEF ISI-6

Component: Reactor Pressure Vessel

Class: 1

Inspection Requirement: 100 percent preservice baseline volumetric examination of lower head dollar weld, examination category B-B, under conditions and with equipment and techniques equivalent to those expected to be employed during inservice inspection.

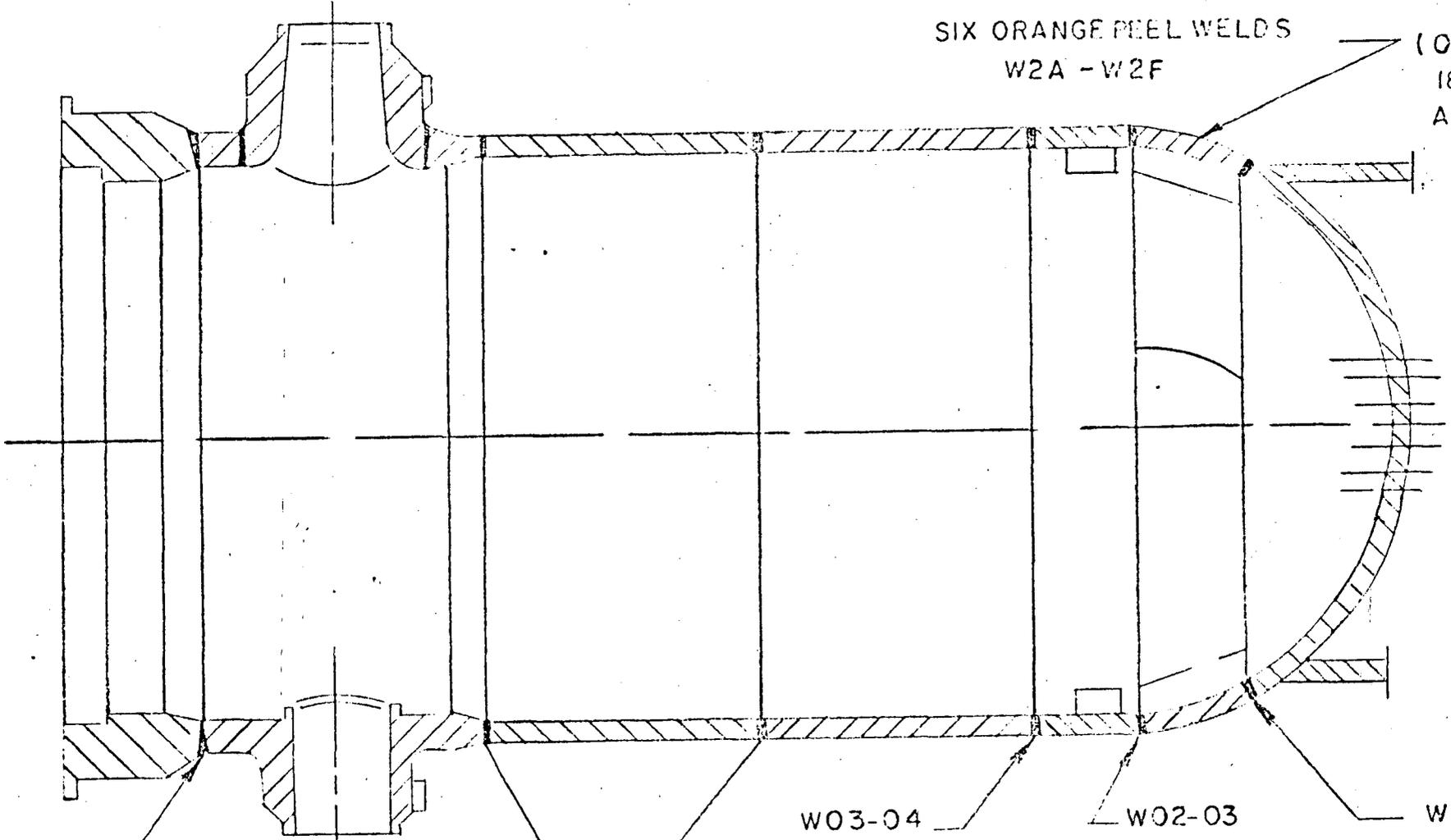
Basis for Relief: TVA will employ automated remote inspection devices to examine most of the reactor vessel welds. These examinations will be conducted from the vessel inside diameter. However, the lower head weld on each reactor pressure vessel is partially inaccessible for examination from the vessel inside diameter due to instrumentation tubes which penetrate the lower head (weld no. W01-02 - see attached drawings). Portions of the weld can be examined from one side (as permitted by I-5121 of Section XI) and will include 100 percent of the examination volume in accordance with IWB-3511.1 of Section XI. These portions of the weld will be re-examined during the inservice intervals in accordance with examination category B-B of Table IWB-2500.

Alternate Inspection: A 100 percent baseline examination of the weld will be conducted from the vessel outside diameter. This will be accomplished by performance of a manual ultrasonic examination. A remote ultrasonic examination will be conducted from the vessel inside diameter on all accessible areas of the weld.

GLB:DAG
Attachments

SIX ORANGE PEEL WELDS
W2A - W2F

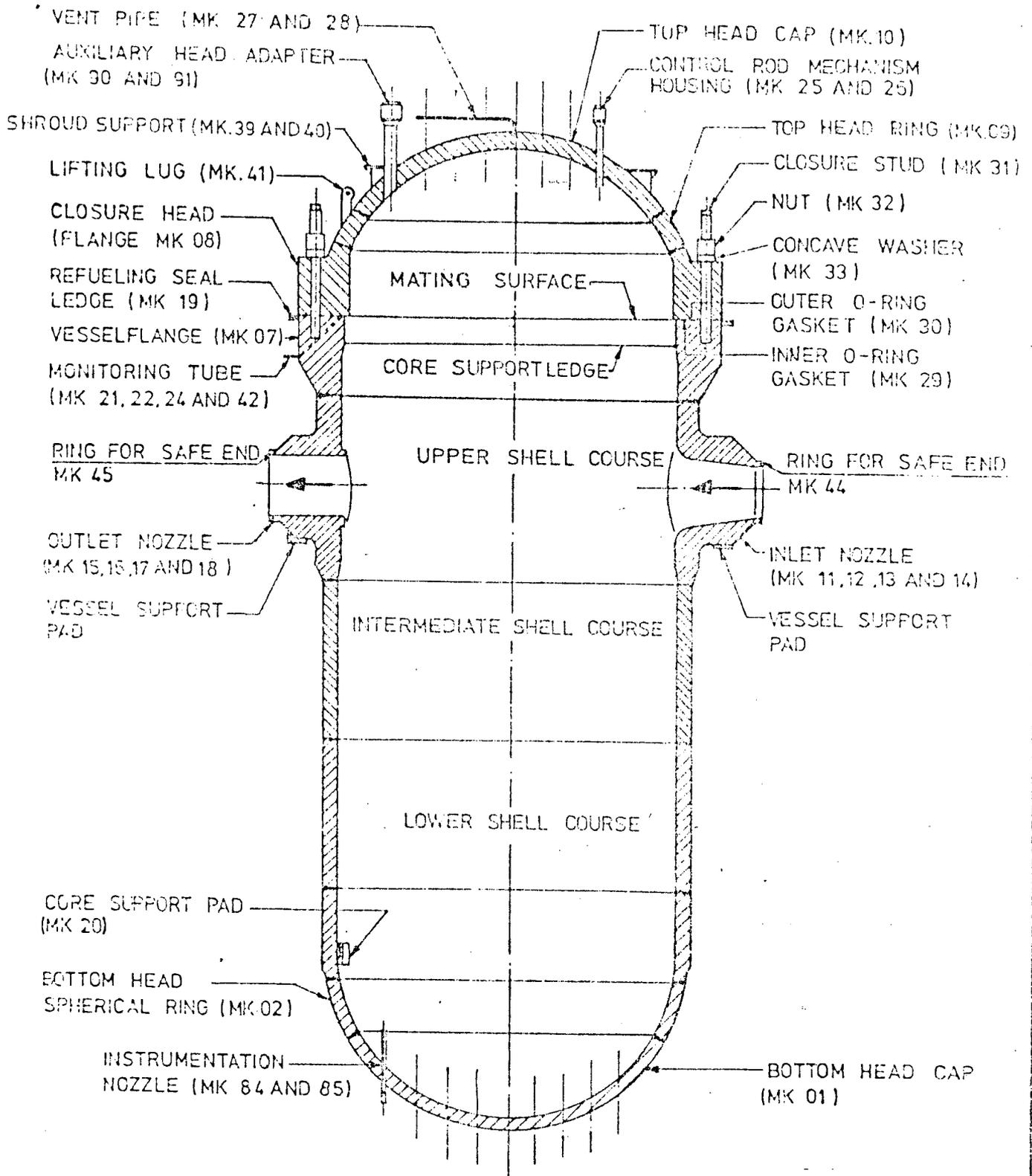
(0°, 60°, 120°,
180°, 240°,
AND 300°)



TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER PRODUCTION

REACTOR VESSEL STEAM WELDS
WATTS BAR NUCLEAR PLANT

SCALE: NTS	SUBMITTED	APPROVED	DATE 10-3-76
DRAWN: RAS			SHEET 02 SHEETS
CHECKED:			CH-M 2551A



REQUEST FOR RELIEF ISI-7

Component: Steam Generator (four per unit)

Class: 1

Inspection Requirement: Volumetric examination of nozzle inside radius section on the primary side, examination category B-D.

Basis for Relief: Each steam generator consists of two integrally cast nozzles. The present capability of ultrasonic testing is not sufficient to examine cast material of this thickness and achieve meaningful results.

Aternate Inspection: None.

GLB:DAG

REQUEST FOR RELIEF ISI-8

Component: Pressure-retaining bolting

Class: 2

Inspection Requirement: Visual, surface, and volumetric examination of pressure-retaining bolting exceeding one inch in diameter, examination category C-D.

Basis for Relief: Examination of class 2 pressure-retaining bolting in accordance with the Summer 1975 Addenda of Section XI exceeds inspection requirements for class 1 pressure-retaining bolting. An examination program for class 2 pressure-retaining bolting similar to that for class 1 would be desirable. This type of examination has been incorporated in the 1977 Edition, 1978 Addenda of Section XI, which Watts Bar Nuclear Plant will be required to meet for inservice examinations.

Alternate Inspection: Class 2 pressure-retaining bolting exceeding two inches in diameter shall be volumetrically examined in accordance with Table IWC-2500-1, examination category C-D of the 1977 Edition, Summer 1978 Addenda of Section XI. Pressure-retaining bolting two inches or less in diameter will not be examined.

CLB:DAG

REQUEST FOR RELIEF ISI-9

Components: Reactor coolant pumps (four per unit)

Class: 1

Inspection Requirement: Volumetric examination of pressure-retaining welds in pump casing, examination category B-L-1.

Basis for Relief: Each reactor coolant pump casing consists of a two-piece welded type 304 SST casting. The present capability of ultrasonic testing is not sufficient to examine cast material of this thickness and achieve meaningful results.

Alternate Inspection: All four welds will be surface examined for the preservice baseline, and one weld will be surface examined during each inspection interval.

GLB:DAG