MISSISSIPPI POWER AND LIGHT COMPANY
PRESERVICE INSPECTION PROGRAM
GRAND GULF NUCLEAR STATION UNIT 1

ATTACHMENT 1, 2, & 3

REQUEST FOR RELIEF 00002

INSERVICE INSPECTION

Component: Peripheral Control Rod Drive Housings welds (Tube to Tube, Tube to Flange) and bolting located on CRD Housings and In-Core Housings.

Code: These portions of the CRD and In-Core Housings were designed and fabricated to the ASME Section III, class I requirements. Applicable Pre/Inservice Inspections to be performed in accordance with the ASME Section XI, 1977 Edition through and including summer 1978 addenda.

Code Requirement (ASME Section XI)

1. Peripheral control Rod Drive Housings welds are required to be Surface Examined (Dye Penetrant) once as a Preservice. Welds located in 10% of the Peripheral CRD Housings require Surface Examination (P.T.) during each ten (10) year Inservice Inspection Interval in accordance with ASME Section XI, IWB-2500-1, examination category B-O.

2. Pressure retaining bolting for the Flange to Flange joints, located on the CRD and Incore Housings, are required to be visually examined (VT-1) once as a Preservice and once every ten (10) year Inspection Interval in accordance with ASME Section XI, IWB-2500-1, examination category B-G-2.

information to support the determination that the code requirement is impractical

The weld areas and bolting are not accessible for inspection unless the Control Rod Drive (CRD) Support Structure is removed. A total 360° Surface Examination cannot be accurately accomplished from the outside, due to interference from adjacent CRD Housings. Inspection of the weld from the inside of the CRD Housing would require that the Control Rod Drive mechanism be removed, which could result in damage to the Drive. With removal of the Drive, a small amount of Reactor water would escape to the CRD cavity area, possibly causing contamination of personnel and equipment. The time frame associated with the CRD Support Structure removal and CRD mechanism would be approximately six (6) man hours (per drive). Dosage received by personnel in this interval cannot justify the inspection process to possibly find a fault which would be discovered by excessive leakage in the Drywell Sump (monitored with technical specification limits in effect).

Reasons why relief should be granted

Request for exemption from Inservice Inspection of the Peripheral CRD Housing welds (Tube to Tube, Tube to Flange), Eight (8) bolts associated with each Flange of 193 CRD Housings and four (4) bolts associated with each Flange of 58 Incore Housings, be granted for the following reasons:

1. The Peripheral CRD Housing welds have been Volumetrically examined by Radiography and Liquid Penetrant methods, and have been Hydrostatic tested in accordance with ASME Section III code requirements.

2. All Incore and CRD Housing bolting has been examined in accordance with the requirements of ASME Section III.

3. The welds and bolting will be subject to Hydrostatic Testing upon completion of each outage, per the requirements of ASME Section XI.

4. If the welds and/or bolts fail while in operation, the maximum leakage rate, by calculation, will occur at the Peripheral CRD Housing tube to Flange weld. This leak rate will correspond to 681 GPM. By criteria established in IWB-1200, "exemptions by make up capacity", the normal makeup for GGNS is 878 GPM, which is in excess of the calculated maximum leakage.

5. Leak detection is provided with the Leakage Detection System, with continuous monitoring in the Control Room.

REQUEST FOR RELIEF 00003

PRE/INSERVICE INSPECTION

Component: Pump casing welds inaccessible, due to concrete encasement for the following pumps:

PUMP	PUMP NO.
Low Pressure Core Spray	1E21 C001
High Pressure Core Spray	1E22 C001
RHR "B"	1E12 C002B

Code: LPCS, HPCS and the RHR "B" pumps were designed and fabricated to the ASME Section III, class 2 requirements. Applicable Pre/Inservice Inspection to be performed in accordance with the ASME Section XI, 1977 edition through and including summer 1978 addenda.

Code Requirement: (ASME SECTION XI) The pressure retaining welds located on the LPCS, HPCS and RHR "B" pumps are required to be Pre/Inservice surface examined (magnetic particle) once as a Preservice and once every ten years in accordance with the ASME Section XI, IWC-2500-1 category C-G.

Information to support the determination that the code requirement is impractical: Inaccessible pump casing welds are located where the concrete pump support encasement only allows a 3" clearance between the pump casing and the concrete encasement wall (see attach drawing for details of the design). Due to this limited accessibility, it is impractical to surface examine those portions of welds located within the surroundings of the concrete pump support encasement.

Reasons why relief should be granted: Request for an exemption from Pre/Inservice Inspection of inaccessible portions of pump casing welds on HPCS, LPCS, RHR "B" pumps located inside of concrete pump support encasements. Examination of the accessible pump casing welds will be performed.

1. These welds have been volumetrically examined by radiography, passed in accordance with the ASME Section III, class 2 requirements.

2. The accessible length of each applicable weld will be surface examined (magnetic particle method) in accordance with ASME Section XI, etc.

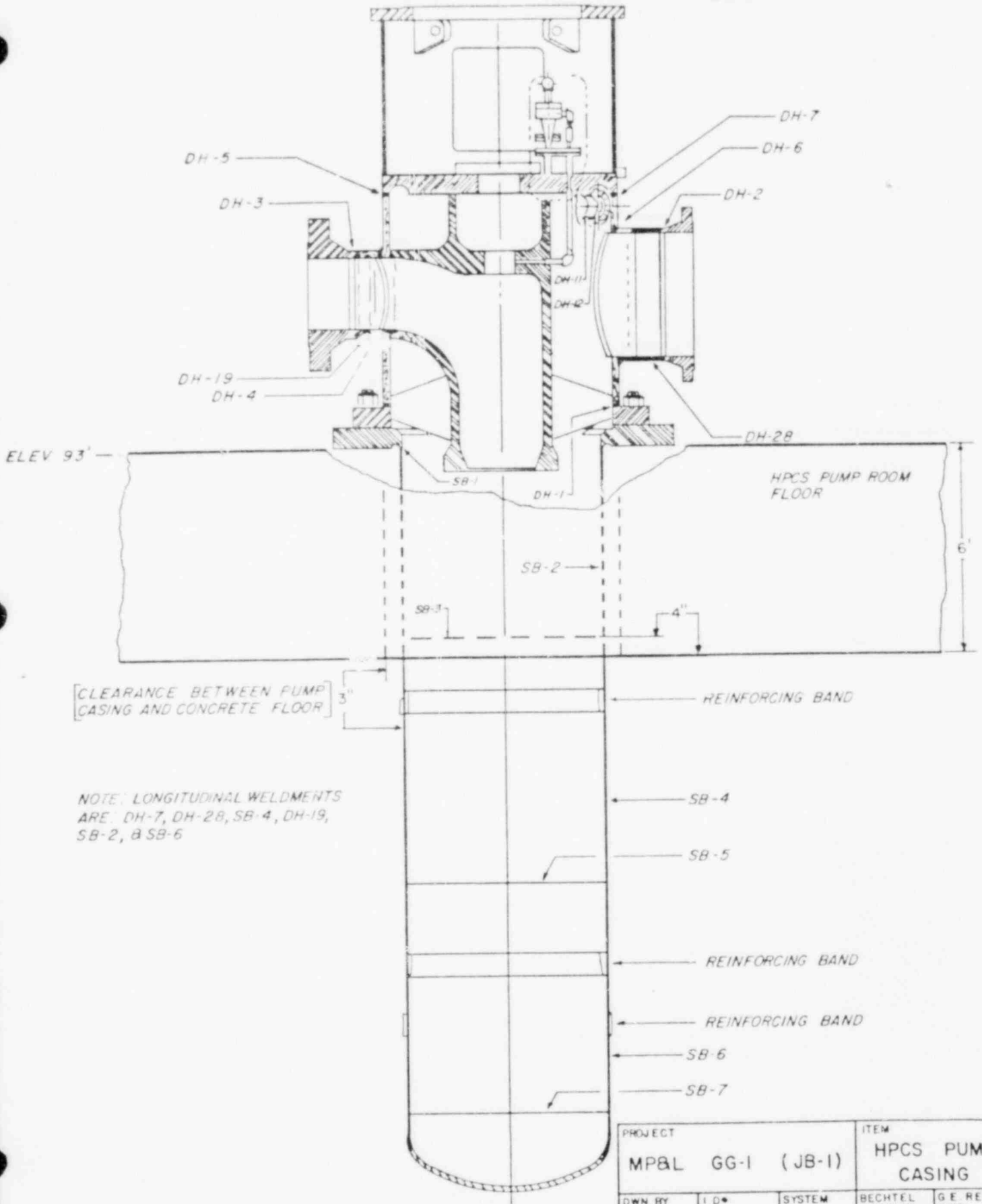
3. The failure of these welds, thus leading to failure of the pump, would have no adverse affect on plant safety as redundant ECCS systems are provided.

4. Annunciators (i.e. low suction pressure, discharge pressure abnormal, etc.) are provided in the Control Room along with other system indicators to alert the operators to abnormal operating conditions.

5. The systems, including the pumps, are tested at least once per 31 days, per Technical Specifications requirements, to ensure operability.

6. Pumps will be subject to a system pressure test in accordance with ASME Section XI, class 2 requirements.

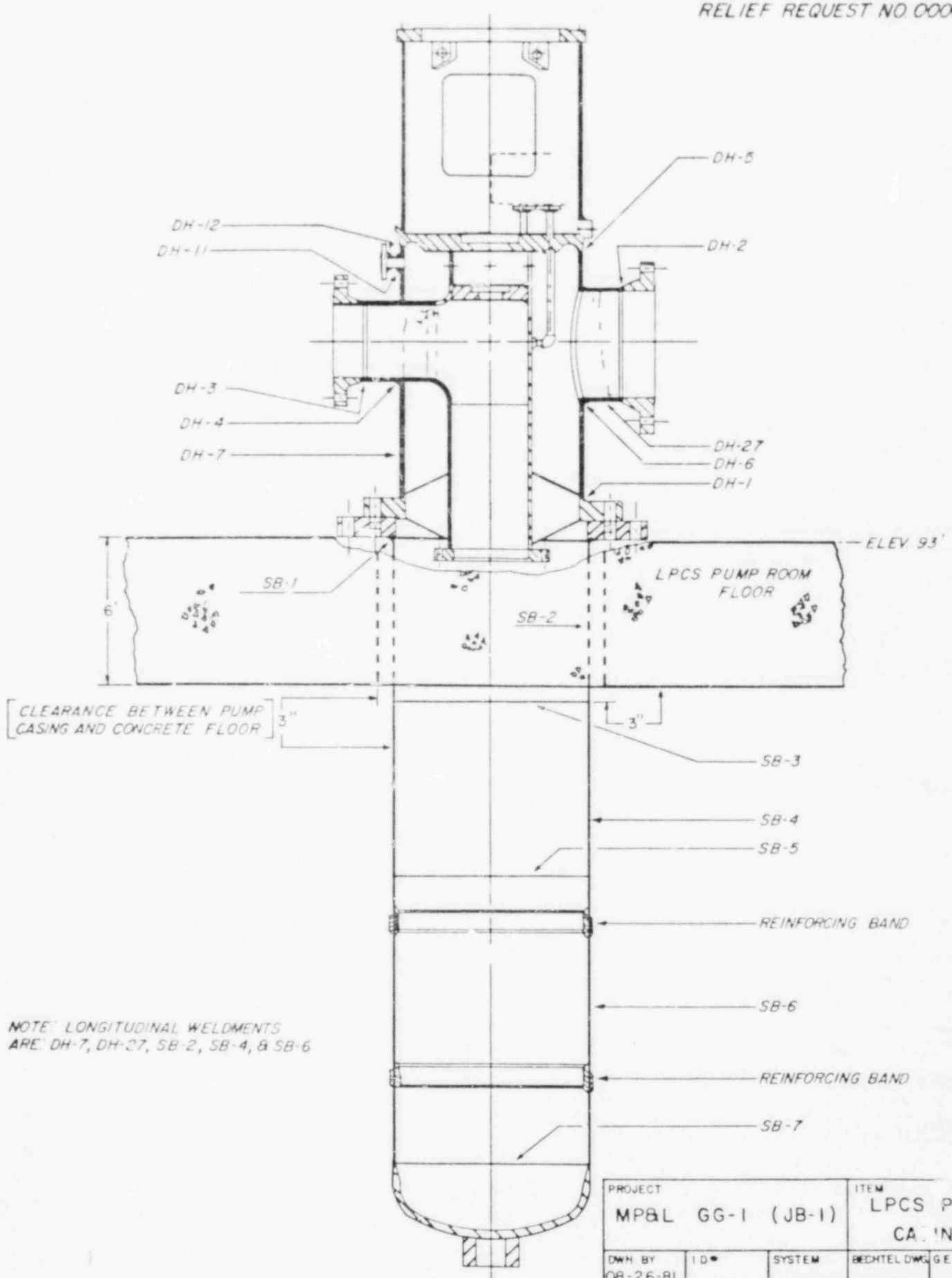
RELIEF REQUEST NO. 00003



NOTE: LONGITUDINAL WELDMENTS ARE: DH-7, DH-28, SB-4, DH-19, SB-2, & SB-6

PROJECT			ITEM	
MP&L GG-1 (JB-1)			HPCS PUMP CASING	
DWN BY	I.D.	SYSTEM	BECHTEL REF. DWG.	G.E. REF. DWG.
08-26-81 R. DILL	IE22C001C	IE22G001	M-1349A	HP-8-10

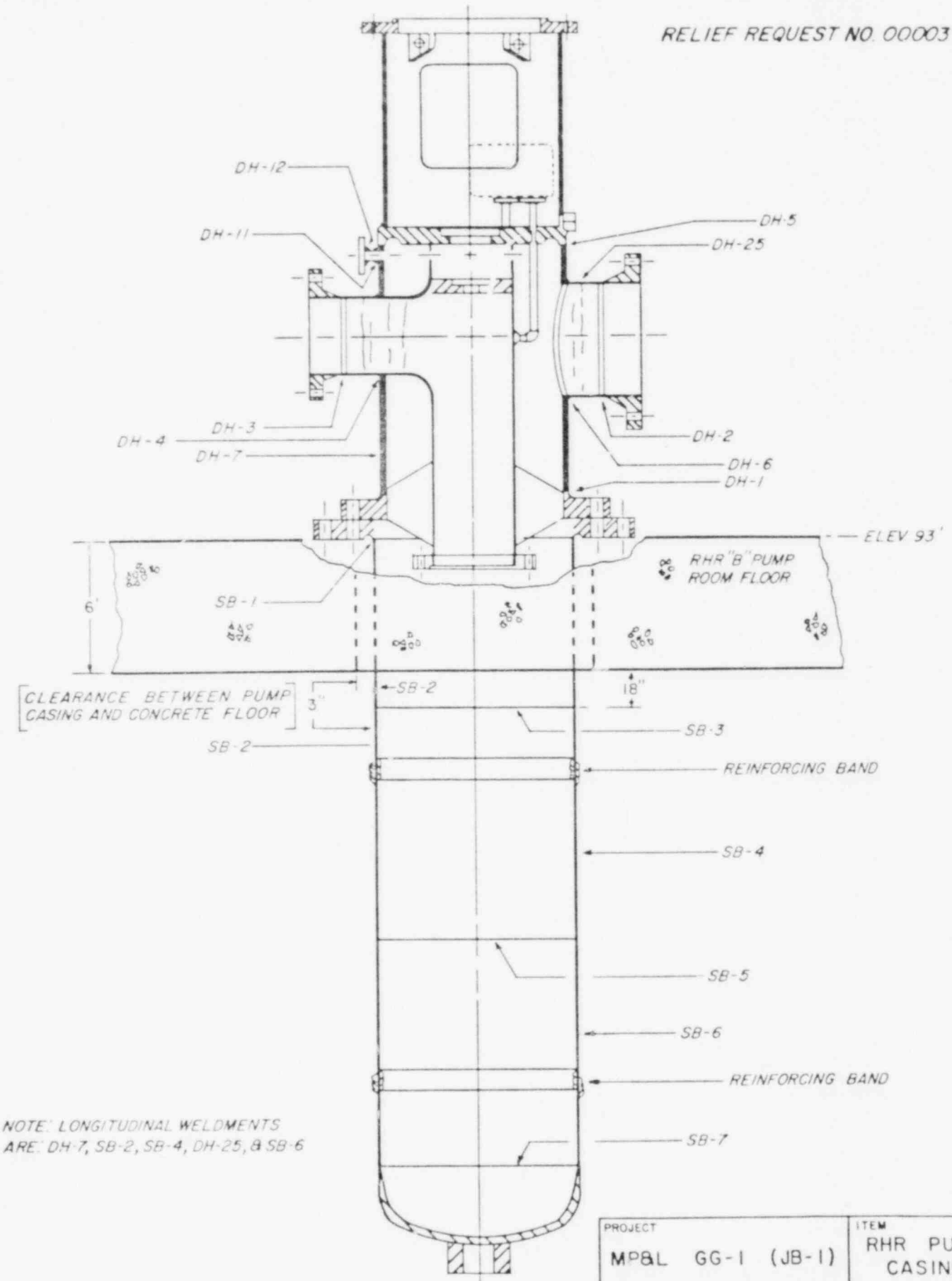
RELIEF REQUEST NO. 00003



NOTE: LONGITUDINAL WELDMENTS ARE: DH-7, DH-27, SB-2, SB-4, & SB-6

PROJECT			ITEM	
MP&L GG-1 (JB-1)			LPCS PUMP CASING	
DWN. BY	I.D.#	SYSTEM	BECHTEL DWG.	G.E. REF. DWG.
08-26-81 R DILL	IE21C001A	IE21G001	M-1350A	LP-9-4

RELIEF REQUEST NO. 00003



NOTE: LONGITUDINAL WELDMENTS ARE: DH-7, SB-2, SB-4, DH-25, & SB-6

PROJECT			ITEM	
MP&L GG-1 (JB-1)			RHR PUMP CASING	
DWN BY	I.D.	SYSTEM	BECHTEL REF. DWG	G.E. REF. DWG
08-26-81 R DILL	IE12C002B	IE12G010	M-1348B	RH-8-12

E12 - RHR PUMP CASING

WELDS SURFACE TESTED

DH-1	DH-4	DH-7	DH-25	SB-5
DH-2	DH-5	DH-11	SB-3	SB-6
DH-3	DH-6	DH-12	SB-4	SB-7

RELIEF REQUESTED

WELDS PARTIALLY COMPLETED DUE TO ACCESS

SB-2 (18" Done, 54" Not Done)

WELDS NOT SURFACE TESTED DUE TO ACCESS

SB-1

E21 - LPCS PUMP CASING

WELDS SURFACE TESTED

DH-1	DH-4	DH-7	DH-27	SB-5
DH-2	DH-5	DH-11	SB-3	SB-6
DH-3	DH-6	DH-12	SB-4	SB-7

RELIEF REQUESTED

WELDS PARTIALLY COMPLETE DUE TO ACCESS

SB-2 (3" Done, 69" Not Done)

WELDS NOT SURFACE TESTED DUE TO ACCESS

SB-1

E22 - HPCS PUMP CASING

WELDS SURFACE TESTED

DH-1	DH-4	DH-7	DH-19	SB-6
DH-2	DH-5	DH-19	DH-28	SB-7
DH-3	DH-6	DH-28	SB-5	

RELIEF REQUESTED

WELDS PARTIALLY COMPLETE DUE TO ACCESS

SB-4 (68" Done, 4" Not Done)

WELDS NOT SURFACE TESTED DUE TO ACCESS

SB-1
SB-2
SB-3

REQUEST FOR RELIEF 00004

PRESERVICE INSPECTION

Component:	Residual Heat Removal Heat Exchanger #1E12B001A Pressure Retaining Nozzle Welds (N3 & N4)
Code:	The RHR Heat Exchanger Nozzle Welds (N3 & N4) were fabricated in accordance with ASME Section III, class 2 requirements. Preservice Inspection to be performed in accordance with ASME Section XI, 1977 edition, through and including, summer 1978 addenda.
Code Requirement: (ASME Section XI)	The RHR Heat Exchanger Nozzle Welds (N3 & N4) are required to be Surface (Magnetic Particle) and Volumetric (Ultrasonics) examined, once as a Preservice and once every 10 year Inservice Inspection interval, in accordance with ASME Section XI, IWC-2500-1, examination category C-A, Item no. C2-20.
Information to support the determination that the code requirement is impractical for Preservice Inspection:	Approximately 1160 man hours would be required to remove and replace, already installed, insulation on the RHR Heat Exchanger Nozzles to perform the Surface Examination. With already acceptable, more strigent radiography and ultrasonics being performed per ASME Section III and General Electric Company specifications on these Nozzles, it is expected that the non-performance of the required Surface Examination will have no adverse effect on plant safety. Therefore, the expenditure of 1160 man hours to remove and replace insulation to perform a Surface Examination is felt to be impractical and will not enhance overall plant safety.
Reasons why relief: should be granted	Request for an exemption from Preservice Surface Examinations of RHR Heat Exchanger Nozzle welds N3 & N4. Required Surface Examinations will be performed during the first 10 year Inspection interval.

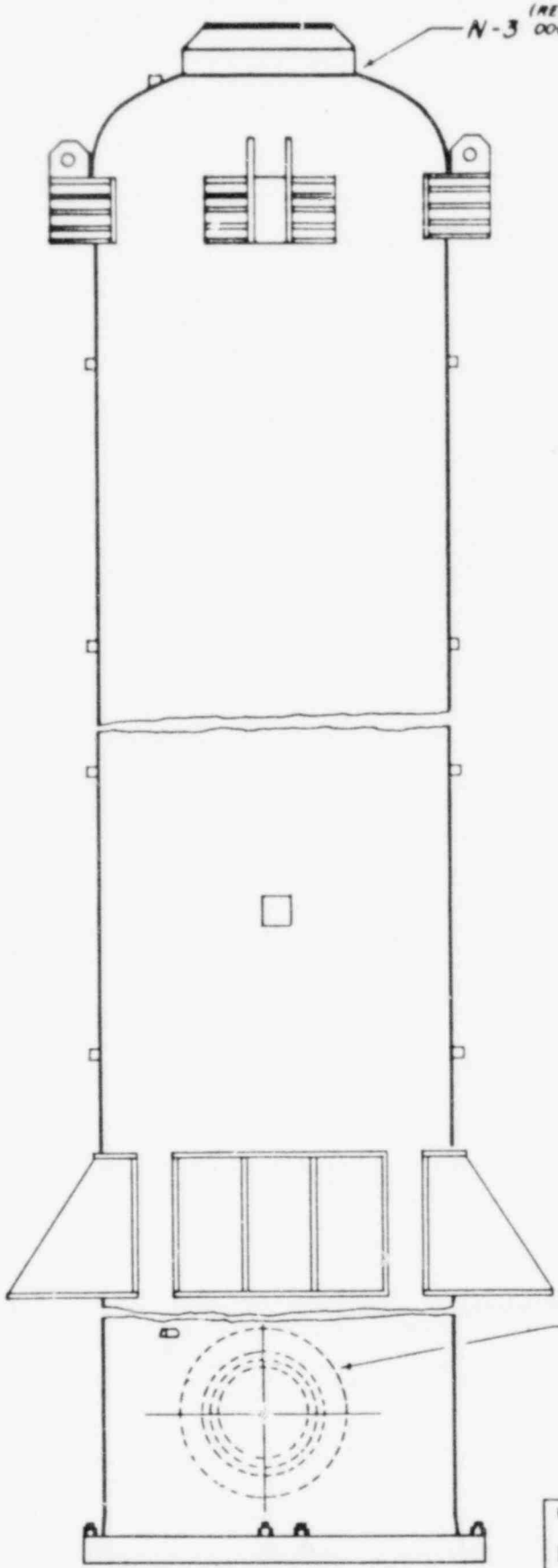
1. Nozzle welds (N3 & N4) have been Volumetrically examined by Radiography and Ultrasonics, passed in accordance with the ASME Section III, Class 2 requirements.

2. Nozzle welds (N3 & N4) were subject to, and passed, a design Hydrostatic Pressure Test during fabrication, in accordance with ASME Section III, class 2 requirements.

3. The RHR Heat Exchangers will be subject to a system Pressure Test, in accordance with ASME Section XI, class 2 requirements.

4. All modes of RHR, that require the use of the RHR Heat Exchangers, function as two (2) seperate streams (two (2) Heat Exchangers in series per stream). While there are no provisions for the isolation of any one (1) Heat Exchanger, either one of the two streams can be isolated. The RHR system design criteria allows for the isolation of either stream without adversely affecting plant safety or the ability of the system to perform its intended function.

RELIEF REQUEST NO 00004

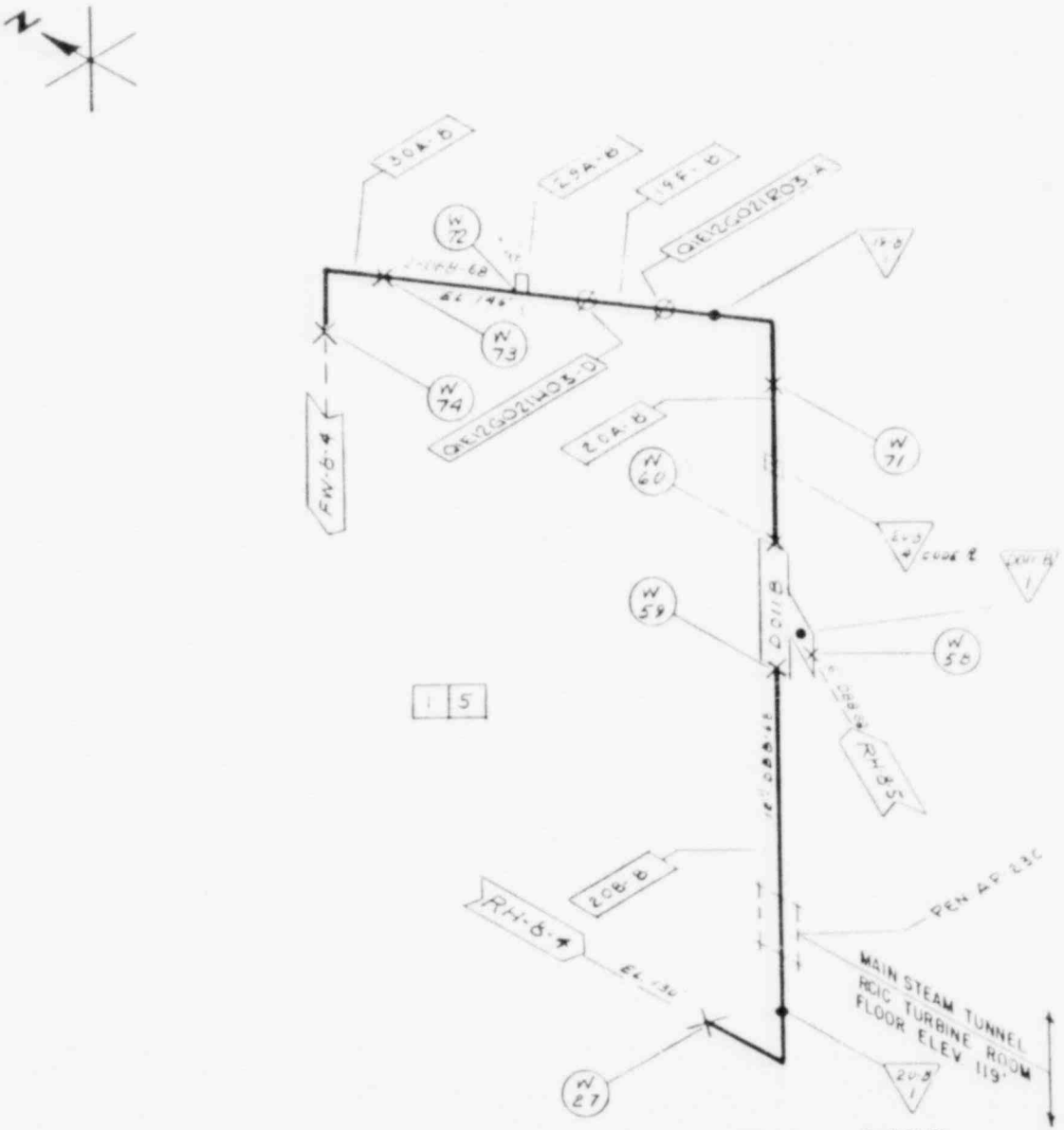


PROJECT			ITEM	
MP&L GG-1 (JB-1)			RHR HEAT EXCHANGER	
DWN. BY	I.D.#	SYSTEM	BECHTEL REF. DWG.	GE REF. DWG.
08-27-81 R.DILL	IE12B001A	IE12G012	M-1348A	RH-7-19

REQUEST FOR RELIEF 00005

PRE/INSERVICE INSPECTION

Component:	Thermal Tee Sleeve welds D011A (weld 54) D011B (weld 58) located on the RHR Return from RWCU Line (G.E. Isometrics RH-8-1 and RH-8-3).
Code:	Pressure Retaining Thermal Tee Sleeve welds (D011A & D011B) were fabricated in accordance with ASME Section III, class 2 requirements. Pre/Inservice inspections are to be performed in accordance with ASME Section XI, 1977 edition through and including Summer 1978 addenda.
Code Requirement ASME SECTION XI:	Thermal Tee Sleeve welds are required to be Surface (magnetic particle) and Volumetric (Ultrasonics) inspected once as a Preservice and once every ten (10) year Inservice Inspection interval in accordance with ASME Section XI, IWB-2500-1, examination category CF, Item #C5.21.
Information to support the determination that the code requirement is impractical:	Due to the design of the Thermal Tee Sleeve welds D011A (weld 54) and D011B (weld 58), there is not sufficient area to perform a meaningful Ultrasonic examination. Also, the position of the Thermal Sleeve, as well as lack of internal access, precludes the use of radiography.
Reason why relief should be granted:	Request for exemption from Pre/Inservice Volumetric (Ultrasonics and Radiography) inspections of Thermal Tee welds D011A (weld 54) and D011B (weld 58) on the RHR Return to RWCU Line. 1) The Thermal Tee welds have been Volumetrically examined by Radiography, found acceptable in accordance with ASME Section III, class 2 requirements. 2) The Thermal Tee welds have been Surface examined by Magnetic Particle, found acceptable in accordance with ASME Section XI, class 2 requirements. 3) The Thermal Tee welds will be Magnetic Particle inspected every ten (10) year interval in accordance with ASME Section XI, class 2 requirements. 4) Thermal Tee welds will be subject to a System Pressure Test in accordance with ASME Section XI, class 2 requirements. 5) Leak detection is provided for the Main Stream tunnel, via the leak detection system in the Control Room which would detect a leak in the Thermal Sleeve weld. 6) The system design would allow for isolation of the Thermal Sleeve without adversely affecting plant safety.



MPL NO. 1E12G021	WELD DESCR.	CODE CAT.	TYPE EXAM	EXAM TIME PERIOD	ACCESS SATIS.	I.D. MARK COMPL.
W-27	"C"	CF	UT	06-19-80		YES
20-B-1	"C"	CF	UT	06-19-80		YES
W-59	"C"	CF	UT	06-05-80		YES
W-58	"C"	CF	UT	06-17-80		YES
W-60	"C"	CF	UT	06-05-80		YES
W-71	"C"	CF	UT	06-11-80		YES
19-B-1	"C"	CF	UT	06-11-80		YES
W-73	"C"	CF	UT	06-11-80		YES
W-74	"C"	CF	UT	06-11-80		YES
W-27	"C"	CF	MT	03-03-81		YES
20-B-1	"C"	CF	MT	03-03-81		YES
W-59	"C"	CF	MT	02-17-81		YES
W-58	"C"	CF	MT	02-17-81		YES
W-60	"C"	CF	MT	02-17-81		YES
W-71	"C"	CF	MT	02-17-81		YES
19-B-1	"C"	CF	MT	03-03-81		YES
W-73	"C"	CF	MT	02-17-81		YES
W-74	"C"	CF	MT	02-17-81		YES
R03-A	HANGER	CE	VT			N/A
H03-D	HANGER	CE	VT			N/A
D011-B-1	"J"	CF	MT	07-27-81		YES

CAL STANDARD: D=15, =12 ISI DUE TO BECHTEL NOTE 23

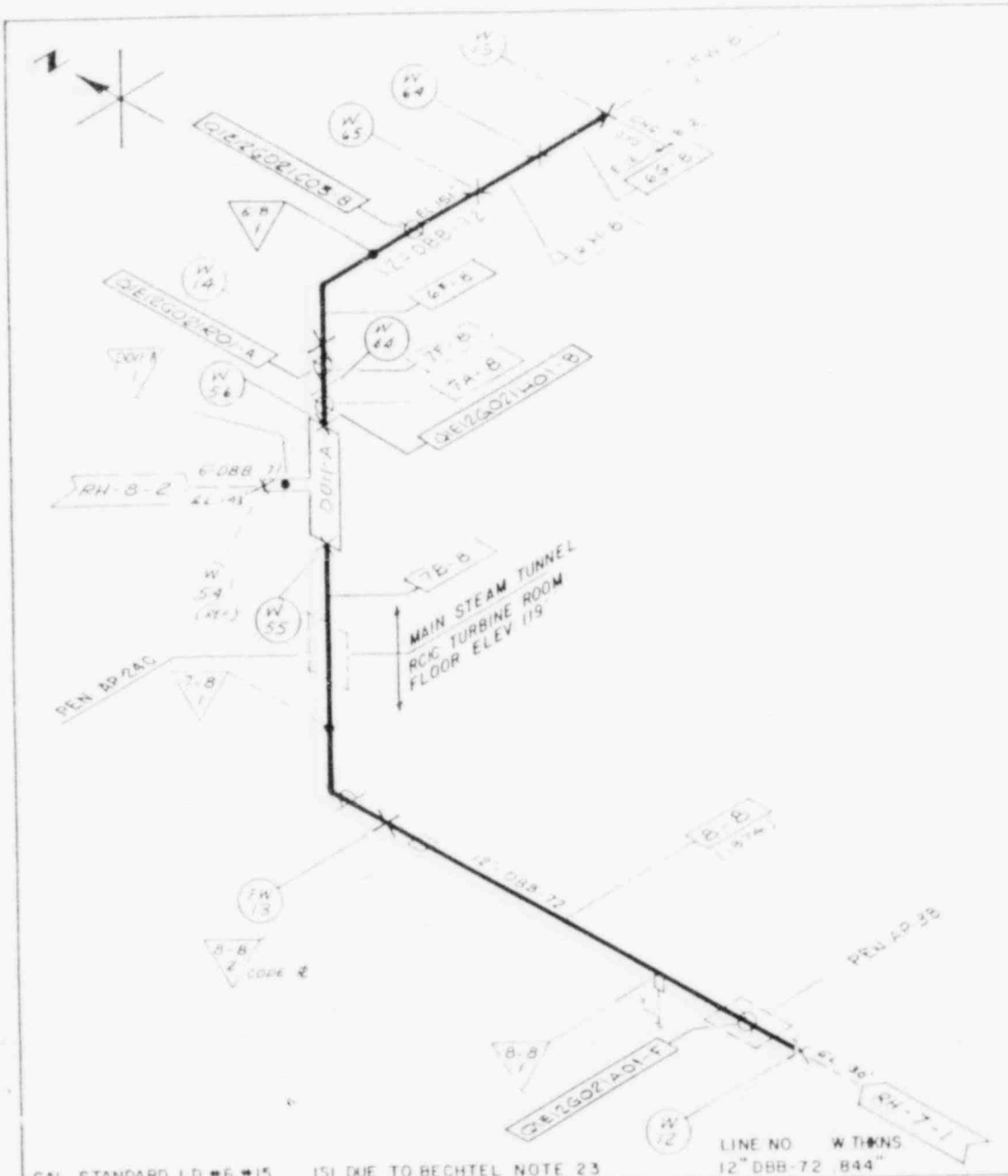
LINE NO. 12" DBB-68 W. THKNS. 844"

RH-G-2B

ORIGINAL COPY WHEN THIS IMPRINT IN RED 3

GENERAL ELECTRIC

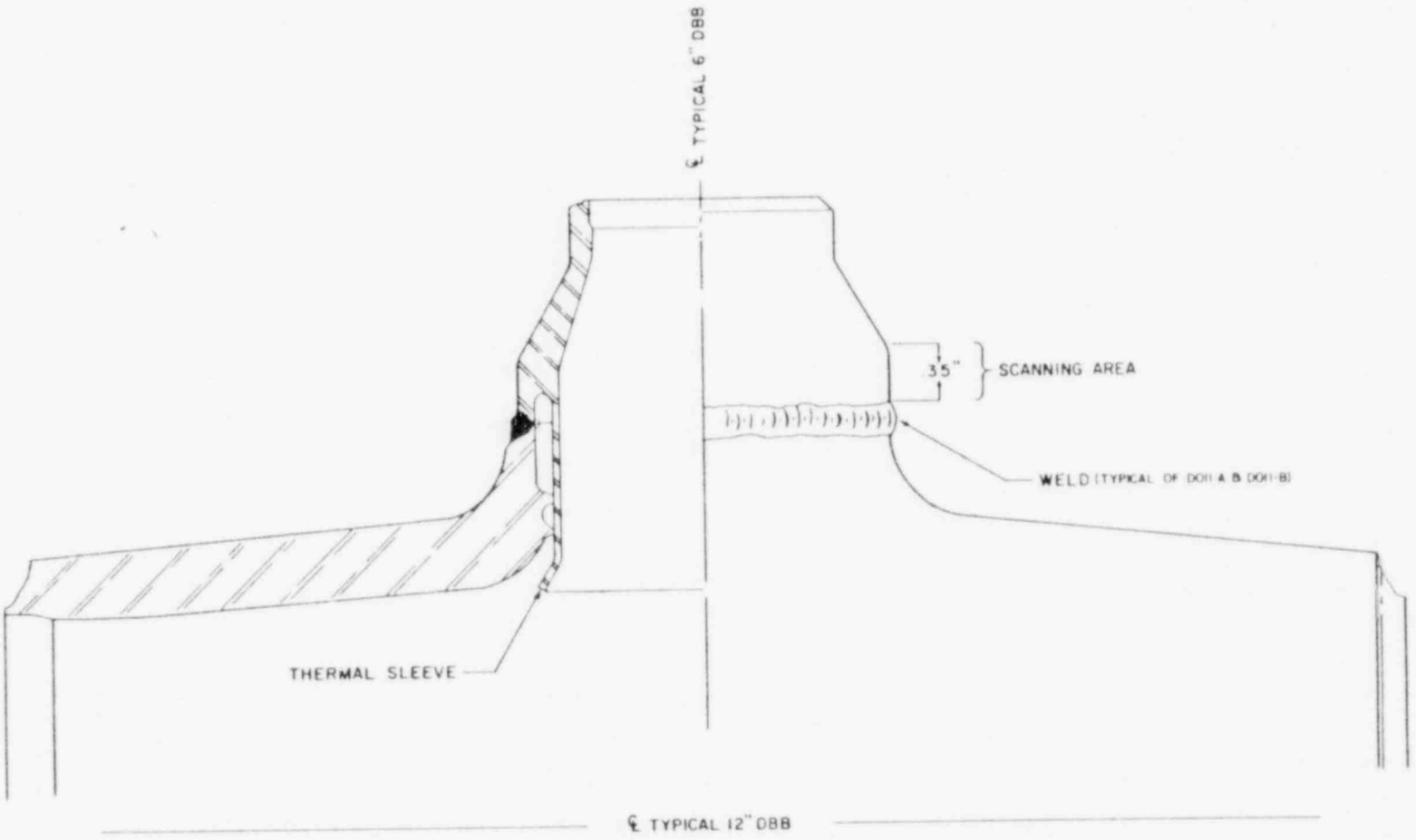
PROJECT			MADE BY		REV
MP&L GG-1 (JB-1)			06-12-80 SULLIVAN	I&SE - NSO ATLANTA	4
SYSTEM	LOCATION	REF DWG	REF PSID	ISOMETRIC NO.	SH. NO.
RHR RETURN FROM RWCU	STM TUN	M-1328K	M-1085B SK-M-1593	RH-B PAGE 1 of 1	3



MPL NO (B12.G021)	WELD DESCR	CODE CAT	TYPE EXAM	EXAM TIME PERIOD	ACCESS SATIS	I.D MARK COMP
W-12	"C"	CF	UT	06-06-80		YES
W-13	"C"	CF	UT	06-19-80		YES
7-B-1	"C"	CF	UT	06-19-80		YES
W-55	"C"	CF	UT	06-06-80		YES
W-56	"C"	CF	UT	06-06-80		YES
W-44	"C"	CF	UT	06-06-80		YES
W-14	"C"	CF	UT	07-16-79		YES
6-B-1	"C"	CF	UT	06-06-80		YES
W-65	"E"	CF	UT	06-06-80		YES
W-64	"E"	CF	UT	06-06-80		YES
W-15	"C"	CF	UT	06-06-80		YES
W-12	"C"	CF	MT	02-11-81		YES
W-13	"C"	CF	MT	02-11-81		YES
7-B-1	"C"	CF	MT	02-11-81		YES
W-55	"C"	CF	MT	02-11-81		YES
W-56	"C"	CF	MT	02-11-81		YES
W-44	"C"	CF	MT	02-17-81		YES
W-14	"C"	CF	MT	02-17-81		YES
6-B-1	"C"	CF	MT	02-17-81		YES
W-65	"E"	CF	MT	02-17-81		YES
W-64	"E"	CF	MT	02-17-81		YES
W-15	"C"	CF	MT	02-17-81		YES
A01-F	HANGER	CE	VT			N/A
H01-B	HANGER	CE	VT			N/A
R01-A	HANGER	CE	VT			N/A
C03-B	HANGER	CE	VT			N/A
D011-A-1	"J"	CF	MT	07-27-81		YES

ORIGINAL COPY WHEN THIS IMPRINT IN RED 3

MP&L GG-1 (JB-1)			DWN: 04-11-77 S GRAUS	IBSE NSO ATLANTA	REV	DATE
SYSTEM: RHR RETURN FROM RWCU	LOCATION: STM TUN	REF. ISO: M-1328K	REF. P&ID: M-1077A SK-M-1593	DWG NO: RH-8 PAGE 1 of 1	SHT: 1	



PROJECT				ITEM
MP&L GG-1 (JB-1)				THERMAL SLEEVE WELD
DRAWN BY	I.D.#	SYSTEM	BECHTEL REF DWG	GE REF DWG
08-25-81 R DILL	D011A (W-54) D011B (W-58)	RHR RETURN FROM RWCU	M-1328K	RH-B-1 RH-B-3

REQUEST FOR RELIEF 00006

INSERVICE INSPECTION

Component:	Reactor Recirculation Pumps C001A-N and C001B-N (pump casing).
Code:	Reactor Recirculation pump casings were designed and fabricated to the ASME Section III, Class 1 requirements. Applicable Pre/Inservice Inspections to be performed in accordance with the ASME Section XI, 1977 Edition through, and including, Summer 1978 Addenda.
Code Requirement: (ASME Section XI)	The Recirculation pump casing internals are required to be Pre/Inservice Visually Examined (VT-1), once as a Preservice and once every ten (10) year Inservice Inspection interval, in accordance with ASME Section XI, IWB-2500-1, Examination Category B-M-2, Item 12.20.
Information to support the determination that Code Requirement is impractical:	Visual Examination (VT-1) of the Internals, of subject pump, would require disassembly of the pumps. This would cause undue high radiation exposures to plant personnel, which is totally against the concept of the "ALARA" Program to keep radiation exposures to personnel to a minimum. The disassembly of these pumps would also impose an undue burden on the plant, due to extended outages that would be required, and may increase the probability of pump failure.
Reasons why relief shoud be granted:	Request for exemption from Inservice Visual Examination (VT-1) of pump casing internals of Reactor Recirculation pumps C001A-N and C001B-N. Should the pumps be required to be disassembled for other plant reasons, the required Inservice Visual Examinations will be considered. 1) The subject pump casings have been Volumetrically examined by Radiography and have been Hydrostatically tested in accordance with ASME Section III requirements. 2) Pumps are subject to a System Leakage Test after each refueling outage, and System Hydro-Test during each ten (10) year inspection interval, in accordance with ASME Section XI, Class 1 requirements. 3) Vibration monitoring, with indicators provided in the Control Room, are provided on the Recirc. pumps which would detect possible adverse conditions and prevent damage to the pumps.

4) Leak Detection is provided by way of the Leakage Detection System, with continuous monitoring in the Control Room.

5) Low and High temperature alarms are provided for each pump with continuous monitoring in the Control Room.

TABLE OF ASME SECTION XI CODE EXEMPTION
APPLICATION

APPLICATION	CODE EDITION	PARAGRAPH - DESCRIPTION	APPLIED	
			YES	NO
Class 1 Code Exemptions	1978	IWB-1220(a) Components connected to and part of the reactor coolant pressure boundary, but exempted from Class 1 requirements by regulations of the regulatory authority having jurisdiction at the plant site.		X
		IWB-1220(b) Component connections, piping and associated valves of 1 inch nominal pipe size and smaller, except for steam generator tubing.	X	
		IWB-1220(c) Reactor vessel head connections and associated piping 2 inches nominal pipe size and smaller, made inaccessible by control rod drive penetrations.	X	
Class 2 Code Exemptions (not RHR or ECCS)	1978	IWC-1220(a) Components of systems or portions of systems that during normal plant operating conditions are not required to operate or perform a system function but remain flooded under static conditions at a pressure of at least 80% of the pressure that the component or system will be subjected to when required to operate; or		X
		IWC-1220(b) Components of systems or portions of systems, other than Residual Heat Removal Systems and Emergency Core Cooling Systems, that are not required to operate above a pressure of 275 psig (1900 kPa) or above a temperature of 200 (93 C) F; or	X	
		IWC-1220(c) Component connections (including nozzles in vessels and pumps), piping and associated valves and vessels (and their supports) that are 4 in. nominal pipe size and smaller.	X	
Class 2 Code Exemptions (RHR or ECCS)	1975	IWC-1220(a) Components in systems where both the design pressure and temperature are equal to or less than 275 psig and 200 F, respectively.	X	
		IWC-1220(b) Components in systems or portions of systems, other than emergency core cooling systems, which do not function during normal reactor operation.	N/A	N/A

TABLE OF ASME SECTION XI CODE EXEMPTION
APPLICATION

APPLICATION	CODE EDITION	PARAGRAPH - DESCRIPTION	APPLIED	
			YES	NO
Class 2 Code Exemptions (RHR or ECCS)	1975	IWC-1220(c) Components which perform an emergency core cooling function, provided the control of the chemistry of the contained fluid is verified by periodic sampling and test.		X
		IWC-1220(d) Component connections, piping, and associated valves, and vessels (and their supports), that are 4 in. nominal pipe size and smaller.	X	

APPLICATION OF EXEMPTION CRITERIA

SUMMARY

A) CLASS 1

1) IWB-1220(b) of Summer 1978 Addenda was applied to all welds one (1) inch NPS and smaller. Due to the large number of lines in this category, no numerical count was performed.

2) Total number of welds greater than 1" NPS identified

1074

3) IWB-1220(c) of Summer 1978 Addenda will be applied to a total of 22 welds for Inservice Inspection. These welds were examined for the Preservice program.

4) Total number of welds greater than 1" NPS examined

1074

B) CLASS 2 (RHR & ECCS ONLY)

1) Due to the large number of lines smaller than 3" NPS, the weld totals do not include welds on these lines. No numerical count was performed.

2) Total number of welds greater than 3" NPS identified

1101

3) IWC-1220(a) of Summer 1975 Addenda was applied to a total of 201 welds.

4) IWC-1220(d) of Summer 1975 Addenda was applied to a total of 326 welds.

5) Total number of welds subject to the 10% selection criteria

574

6) Total number of welds examined

121

APPLICATION OF EXEMPTION CRITERIA (continued)

C) CLASS 2 (NON-RHR & ECCS)

1) Due to the large number of lines smaller than 3" NPS, the weld totals do not include welds on these lines. No numerical count was performed.

2) Total number of welds greater than 3" NPS identified

749

3) IWC-1220(b) of Summer 1978 Addenda was applied to a total of 342 welds.

4) IWC-1220(c) of Summer 1978 Addenda was applied to a total of 154 welds.

5) Total number of welds subject to the 25% selection criteria (50% for steam lines)

253

6) Total number of welds examined

222

GENERAL NOTE: The required percentages of welds to be examined is exceeded in some systems due to Augmented Inspection requirements.

	Welds	Exempt	Non-Exempt	Examined	Per Cent
CLASS 1	1074	-0-	1074	1074	100%
CLASS 2	1850	1023	827	343	41%
TOTAL	2924	1023	1901	1417	75%

MAKE-UP WATER TREATMENT SYSTEM

P&ID M-0033B

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 2**

   A. IWC-1220(c) has been applied to:

LINE NUMBER	NO. OF WELDS
4-HBB-155	2

   B. Total number of welds subject to selection criteria - 0

   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

STANDBY SERVICE WATER SYSTEM

P&ID M-1061B,D

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 19**

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
18-GBB-17	15

   B. IWC-1220(c) has been applied to:

LINE NUMBER	NO. OF WELDS
3-HBB-142	2
3-HBB-143	2

   C. Total number of welds subject to selection criteria - 15

   D. Total number of examinations - 4
   (Welds are scheduled for Preservice Inspection)

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

COMPONENT COOLING WATER SYSTEM

P&ID M-1063B (P42)

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 18**

   A. IWC-1220 (b) will be applied to:

LINE NUMBER	NO. OF WELDS
10-HBB-35	4
8-HBB-36	4
8-HBB-37	7
10-HBB-38	3

   B. Total welds subject to selection criteria - 0

   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

CONDENSATE & REFUELING WATER

STORAGE & TRANSFER SYSTEM

P&ID M-1065 (P11)

1. Number of Class 1 piping welds in system - 0*
2. Number of Class 2 piping welds in system - 49**
   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
12-HBB-30	13
6-HBB-34	3
20-HCB-9	12
18-HCB-1	18
6-HCB-8	3

   B. Total number of welds subject to selection criteria - 0
   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

INSTRUMENT AIR SYSTEM

P&ID M-1067A (P53)

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 2**

   A. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
3-HBB-45	2

   B. Total number of welds subject to selection criteria - 0

   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

SERVICE AIR SYSTEM

P&ID M-1068A (P52)

1. Number of Class 1 welds in system - 0*

2. Number of Class 2 welds in system - 0**
   (All Class 2 lines on this system are 4 inches NPS and less, therefore, all Class 2 lines are exempt per IWC-1220(c)).

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

PLANT SERVICE WATER SYSTEM

P&ID M-1072B (P44)

1. Number of Class 1 welds in piping system - 0*
2. Number of Class 2 welds in piping system - 25**
   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
5-HBB-40	2
4-HBB-40	4
4-HBB-42	5
5-HBB-42	2
4-HBB-39	4
5-HBB-39	2
4-HBB-41	4
5-HBB-41	2

   B. Total number of welds subject to selection criteria - 0

   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

NUCLEAR BOILER SYSTEM

P&ID M-1077A,B,c (B21)

1. Number of Class 1 piping welds in system - 346*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
24-DBA-13	14
24-DBA-17	3
1½-DBA-25	40
1½-DBA-69	4
1½-DBA-87	8
2-DBA-19	23
2-DBA-21	7
2-DBA-25	12
2-DBA-22	22
3-DBA-23	19
10-DBA-24	2
12-DBA-17	44
18-DBA-13	8
1½-DCA-3	14
28-Class 1	106
8-Class 1	20

   B. Total number of welds subject to selection criteria - 346

   C. Total number of examinations - 346

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

2. Number of Class 2 piping welds in system - 59**

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
24-DBB-141	4
24-DBB-73	29
28-DBB-23	12
28-DBB-143	14

   B. Total number of welds subject to selection criteria - 59

   C. Total number of examinations - 67
   (8 of these welds are also in NBZ)

3. Number of welds examined per NBZ examination criteria and not otherwise examined. (ref. FSAR 3.6A.2.1 (G))

LINE NUMBER	NO. OF WELDS
3-DBD-31	6

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

REACTOR RECIRCULATION SYSTEM

P&ID M-1078A,B (B33)

1. Number of Class 1 piping welds in system - 299*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
1¼" Class 1	8
4" Class 1	14
12" Class 1	96
16" Class 1	26
24" Class 1	82
4-DBA-11	18
4-DCA-1	12
4-DBA-9	1
2-DCA-24	18
2-DBA-41	9
2-DBA-40	6
2-DBA-42	5
20-DCA-25	2
20-DBA-64	2

   B. Total number of welds subject to selection criteria - 299

   C. Total number of welds examined - 299

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

REACTOR RECIRCULATION SYSTEM (continued)

P&ID M-1078A,B (B33)

2. Number of Class 2 piping welds in system - 12**

   A. Non-exempt welds - 0

   B. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
5-HBB-111	2

   C. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
4-HBB-111	10

   D. Total number of welds subject to selection criteria - 0

   E. Total number of welds examined - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

REACTOR WATER CLEAN-UP SYSTEM

P&ID M-1079 (G33)

1. Number of Class 1 piping welds in system - 89*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
2-DBA-12	4
4-DBA-11	16
4-DBA-10	5
4-DBA-9	5
6-DBA-9	24
6-DBA-90	11
6-DBA-89	24

   B. Total number of welds subject to selection criteria - 89

   C. Total number of examinations - 89

2. Number of Class 2 piping welds in system - 42**

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
6-EBB-1	2
6-DBB-140	9
6-DBB-104	22

   B. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
4-DBB-103	6
4-EBB-1	3

*Does not include welds 1 inch NPS and less for Code Class 1 piping.
**Does not include welds less than 3 inches NPS for Code Class 2 piping.

REACTOR WATER CLEAN-UP SYSTEM (continued)

P&ID M-1079 (G33)

C. Total number of welds subject to selection criteria - 33

D. Total number of examinations - 39
(13 of these welds fall under the criteria for NBZ)

3. Number of welds examined per NBZ examination criteria and not otherwise examined. (ref. FSAR 3.6A.2.1 (G))

LINE NUMBER	NO. OF WELDS
8-DBC-1	10
4-DBC-2	6

RWCU

FILTER/DEMINERALIZER SYSTEM

P&ID M-1080B (G36)

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 7**

   A. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
4-HBB-152	7

   B. Total number of welds subject to selection criteria - 0

   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

CONTROL ROD DRIVE

HYDRAULIC SYSTEM

P&ID M-1081A (C11)

NOTE: CRD System is no longer applicable. The system was capped off due to IGSCC modifications being performed in accordance with NUREG 0313.

STANDBY LIQUID CONTROL SYSTEM

P&ID M-1082

1. Number of Class 1 piping welds in system - 63*

   A. Non-exempt welds:

LINE NUMBERS	NO. OF WELDS
1½-DCA-2	6
1½-DCA-3	57

   B. Total number of welds subject to selection criteria - 63

   C. Total number of examinations - 63

2. Number of Class 2 piping welds in system - 41**

   A. IWC-1220(b) was applied to:

LINE NUMBERS	NO. OF WELDS
6-HCB-16	5
6-HCB-11	21
6-HCB-10	2
6-HCB-12	8

   B. IWV-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
3-HCB-11	2
3-HCB-10	3

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

STANDBY LIQUID CONTROL SYSTEM (continued)

P&ID M-1082

C. Total number of welds subject to selection criteria - 0

D. Total number of examinations - 0

REACTOR CORE ISOLATION COOLING SYSTEM

P&ID M-1083B (E51 and M-1085A (E12)

1. Number of Class 1 piping welds in system - 72*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
10-DBA-24	13
6-DBA-30	59

   B. Total number of welds subject to selection criteria - 72

   C. Total number examinations - 72

2. Number of Class 2 piping welds in system - 214**

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
6-DBB-57	26
6-DBB-58	2
10-DBB-56	7
8-HBB-53	1
16-HBB-53	30
16-HBB-61	4
16-HBB-62	1
6-DBB-44	26

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

REACTOR CORE ISOLATION COOLING SYSTEM (continued)

P&ID M-1083B (E51 and M-1085A (E12)

LINE NUMBER	NO. OF WELDS
20-HBB-53	12
16-HBB-53	32

B. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
6-HBB-49	33
6-HBB-57	15
6-HBB-52	2

C. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
4-DBB-51	21
4-DBB-57	2

D. Total number of welds subject to selection criteria - 141

E. Total number of examinations - 88

RESIDUAL HEAT REMOVAL SYSTEM

P&ID M-1085A&B (E12)

1. Number of Class 1 piping welds in system - 88*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
12-DBA-29	4
12-DBA-28	4
12-DBA-38	27
14-DBA-29	12
14-DBA-28	28
20-DBA-64	10
6-DBA-32	3

   B. Total number of welds subject to selection criteria - 88

   C. Total number of examinations - 88

2. Number of Class 2 piping welds in system - 835**

   A. Number of non-exempt piping welds:

LINE NUMBER	NO. OF WELDS
24-GBB-62	20
24-GBB-73	11
24-GBB-30	15
20-GBB-31	4

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

RESIDUAL HEAT REMOVAL SYSTEM (continued)

P&ID M-1085A&B (E12)

LINE NUMBER	NO. OF WELDS
20-GBB-81	2
20-GBB-18	1
20-GBB-70	3
20-GBB-78	4
20-GBB-19	7
18-GBB-58	29
18-GBB-63	2
18-GBB-81	45
18-GBB-89	4
18-GBB-75	5
18-GBB-76	11
18-GBB-77	2
18-GBB-74	26
18-GBB-17	3
18-GBB-78	9
18-GBB-32	14
18-GBB-107	4
18-GBB-118	3
18-GBB-20	39
18-GBB-52	9
18-GBB-51	9

RESIDUAL HEAT REMOVAL SYSTEM (continued)

P&ID M-1085A&B (E12)

LINE NUMBER	NO. OF WELDS
18-GBB-21	5
18-GBB-23	3
18-GBB-22	11
18-GBB-18	25
18-GBB-19	9
18-GBB-33	4
18-GBB-31	14
14-GBB-61	5
14-GBB-81	2
14-GBB-96	4
14-GBB-20	6
14-GBB-46	4
12-GBB-58	4
12-GBB-170	3
12-GBB-86	7
12-DBB-63	16
12-GBB-114	3
12-DBB-72	16
10-HBB-84	13
10-HBB-79	15
8-DBB-70	4
8-DBB-87	12

RESIDUAL HEAT REMOVAL SYSTEM (continued)

P&ID M-1085A&B (E12)

LINE NUMBER	NO. OF WELDS
8-DBB-69	5
8-HBB-84	3
6-GBB-84	10
6-DBB-88	11
6-GBB-92	2
6-GBB-43	2
6-DBB-71	9

B. IWC-1220(a) was applied to:

LINE NUMBER	NO. OF WELDS
20-HBB-81	2
24-HBB-81	3
18-HBB-82	11
12-HBB-82	10
18-GBB-52	18
8-GBB-53	8
8-GBB-54	6
8-GBB-55	17
6-GBB-54	13
6-HBB-78	12

C. IWC-1220 (d) was applied to:

LINE NUMBER	NO. OF WELDS
4-GBB-53	11
4-GBB-142	9

RESIDUAL HEAT REMOVAL SYSTEM (continued)

P&ID M-1085A&B (E12)

LINE NUMBER	NO. OF WELDS
4-GBB-37	10
4-GBB-27	3
4-GBB-24	10
4-GBB-75	2
4-GBB-154	2
4-HBB-120	9
4-GBB-95	8
4-GBB-50	16
4-GBB-141	4
4-GBB-122	5
4-GBB-64	8
4-HBB-115	4
4-GBB-119	5
4-GBB-88	7
4-GBB-90	12
4-GBB-91	2
4-HBB-114	3
4-HBB-113	10
4-GBB-110	10
4-GBB-112	4
4-HBB-117	10
4-HBB-52	5

RESIDUAL HEAT REMOVAL SYSTEM (continued)

P&ID M-1085A&B (E12)

LINE NUMBER	NO. OF WELDS
4-GBB-83	9
4-GBB-72	11
4-GBB-85	13
4-HBB-118	4
4-GBB-59	5
4-GBB-101	3
3-GBB-24	9

D. Total number of welds subject to selection criteria - 508

E. Total number of examinations - 109

HIGH PRESSURE CORE SPRAY SYSTEM

P&ID M-1086 (E22)

1. Number of Class 1 piping welds - 42*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
14-DBA-5	33
3-DBA-7	5
12-DBA-5	4

   B. Total number of welds subject to selection criteria - 42

   C. Total number of examinations - 42

2. Number of Class 2 piping welds - 166**

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
12-DBB-8	3
16-DBB-8	26
14-DBB-16	9
10-DBB-18	12
12-DBB-16	3

   B. (continued. page 2)

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

HIGH PRESSURE CORE SPRAY SYSTEM (continued)

P&ID M-1086 (E22)

B. IWC-1220(a) was applied to:

LINE NUMBER	NO. OF WELDS
12-HBB-32	3
14-HBB-32	18
24-HBB-19	5
18-HBB-19	7
24-HBB-21	17
20-HBB-21	2
18-HCB-1	18

C. IWC-1220(d) was applied to:

LINE NUMBER	NO. OF WELDS
4-DBB-20	4
4-DBB-13	8
4-DBB-14	9
4-DBB-11	9
4-DBB-31	5
4-DBB-25	3

D. Total number of welds subject to selection criteria - 53

E. Total number of examinations - 7

LOW PRESSURE CORE SPRAY

P&ID M-1087 (E21)

1. Number of Class 1 piping welds in system - 32*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
14-DBA-1	32

   B. Total number of welds subject to selection criteria - 32

   C. Total number of examinations - 32

2. Number of Class 2 piping welds in system - 100**

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
14-GBB-7	3
16-GBB-7	34
14-GBB-14	4

   B. (continued, page 2)

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

LOW PRESSURE CORE SPRAY (continued)

P&ID M-1087

B. IWC-1220(a) has been applied to:

LINE NUMBER	NO. OF WELDS
14-HBB-9	8
24-HBB-8	18
20-HBB-8	2
18-HBB-14	3

C. IWC-1220(d) has been applied to:

LINE NUMBER	NO. OF WELDS
4-GBB-5	3
4-GBB-10	2
4-GBB-11	12
4-GBB-9	3
4-HBB-13	5
4-HBB-17	3

D. Total number of welds subject to selection criteris - 43

E. Total number of examinations - 5

FUEL POOL COOLING & CLEAN-UP SYSTEM

P&ID M-1088C (G41)

1. Number of Class 1 piping welds in system - 0*

2. Number of class 2 piping welds in system - 22**

   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
8-HBB-7	6
8-HBB-6	7

   B. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
3-HCB-9	9

   C. Total number of welds subject to selection criteria - 0

   D. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

LEAK DETECTION SYSTEM

P&ID M-1090A (E31)

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 0**
   (As can be seen by the P&ID, all Class 2 lines in this system are 4 inches NPS and less. Therefore, they are all exempt per IWC-1220(c)).

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

COMBUSTIBLE GAS CONTROL SYSTEM

P&ID M-1091 (E61)

1. Number of Class 1 piping welds - 0*

2. Number of Class 2 piping welds - 79**

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
12-HBB-90(A)	3
12-HBB-90(B)	2

   B. IWC-1220(b) was applied to:

LINE NUMBERS	NO. OF WELDS
6-HBB-185(A)	3
6-HBB-185(B)	2
12-HBB-135(A)	1
12-HBB-135(B)	1
10-HBB-135(A)	16
10-HBB-135(B)	15
10-HBB-136(A)	2
10-HBB-136(B)	2
8-HBB-137	10
10-HBB-139	8
10-HBB-138	8
6-HBB-140	4

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

COMBUSTIBLE GAS CONTROL SYSTEM (continued)

P&ID M-1091 (E61)

C. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
6-HBB-190(A)	1
6-HBB-190(B)	1

D. Total number of welds subject to selection criteria - 5

E. Total number of examinations - 2

FLOOR & EQUIPMENT DRAINS SYSTEM

P&ID M-1094A,B (P45)

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 64**

   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
6-HBB-101	8
6-HBB-102	10

   B. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
4-HBB-95	15
3-HBB-95	3
3-HCB-19	10
3-HBB-96	3
4-HBB-96	15

   C. Total number of welds subject to selection criteria - 0

   D. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

SUPPRESSION POOL MAKE-UP SYSTEM

P&ID M-1096 (E30)

1. Number of Class 1 piping welds in system - 0*
2. Number of Class 2 piping welds in system - 33**
   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
30-HCB-26	2
30-HBB-162	31

   B. Total number of welds subject to selection criteria - 0
   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

MAIN STEAM ISOLATION VALVE

LEAKAGE CONTROL SYSTEM

P&ID M-1097 (E32)

1. Number of Class 1 piping welds in system - 32*

   A. Non-exempt welds:

LINE NUMBERS	NO. OF WELDS
1½-DBA-69	32

   B. Total number of welds subject to selection criteria - 32

   C. Total number of examinations - 32

2. Number of Class 2 piping welds in system - 34**

   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
6-HBB-176	5

   B. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
3-HBB-176	5
4-HBB-169	4
4-HBB-170	20

   C. Total number of welds subject to selection criteria - 0

   D. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

SUPPRESSION POOL CLEANUP SYSTEM

P&ID M-1099 (P60)

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 17**

   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
12-GBB-143	8
12-GBB-131	9

   B. Total number of welds subject to selection criteria - 0

   C. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

CONTAINMENT COOLING SYSTEM

P&ID M-1100A & B (M-41)

NOTE: All Class 2 piping welds in this system are exempt per IWC-1220(b)

PLANT CHILLED WATER SYSTEM

P&ID M-1109D (P71)

1. Number of Class 1 piping welds in system - 0*

2. Number of Class 2 piping welds in system - 12**

   A. IWC-1220(b) was applied to:

LINE NUMBER	NO. OF WELDS
5-HBB-44	2
5-HBB-43	2

   B. IWC-1220(c) was applied to:

LINE NUMBER	NO. OF WELDS
4-HBB-44	4
4-HBB-43	4

   C. Total number of welds subject to selection criteria - 0

   D. Total number of examinations - 0

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

CONTAINMENT LEAKAGE RATE TEST SYSTEM

P&ID M-1111A (M61)

NOTE: All Class 2 piping welds in this system are exempt under IWC-1220(b).

FEEDWATER LEAKAGE CONTROL SYSTEM

P&ID M-1112 (E38)

1. Number of Class 1 piping welds in system - 11*

   A. Non-exempt welds:

LINE NUMBER	NO. OF WELDS
1½-DBA-87	11

   B. Total number of welds subject to selection criteria - 11

   C. Total number of examinations - 11

*Does not include welds 1 inch NPS and less for Code Class 1 piping.

**Does not include welds less than 3 inches NPS for Code Class 2 piping.

RESPONSE TO 121.7

Responses to 121.10, 121.11, 121.12, 121.13, and 121.14 constitute a response to this question.

RESPONSE TO 121.10

MP&L was asked to discuss the apparent inconsistency between MP&L's selection criteria and the selection criteria described in ASME Section XI, Summer 1975 Addenda, paragraphs IWC-1220, IWC-2520, and IWC-2411.

GENERAL: The Section XI, selection criteria, is based on examining welds at structural discontinuities. The total of the welds to be examined is based on the average number of welds in the multiple streams of a system; or, if no multiple streams exist, the total number of welds in the stream. The exemptions of IWC-1220 are applied; the remaining welds are categorized into either the "C-F" or "C-G" portion of IWC-2520; taking advantage of multiple streams where possible; and the number of welds in the scope of the PSI/ISI program is then determined. The Inservice portion of the program then requires the examinations performed over the forty year life of the plant to cover 100% of the required welds, i.e. 25% of the welds are examined each 10 year interval.

The MP&L selection criteria achieves basically the same results. The exemptions of IWC-1220 are applied to the systems; the remaining welds make up the basis for the selection process. The sampling plan is based on stress values and is very similar to the sampling criteria presented in the Summer 1978 addenda to the 1977 edition of ASME Section XI and the sampling philosophy of NUREG-0313. The welds chosen are examined for the preservice portion of the program; subsequently, 100% of those welds are examined each 10 year interval over the forty year life of the plant.

COMPARISON OF SAMPLING PLANS FOR RHR, LPCS AND HPCS SYSTEMS: The following paragraphs provide a detailed comparison of the examinations which would take place under the ASME Section XI selection criteria (referred to as the "Code Plan"), versus the MP&L selection criteria (referred to as the "MP&L Plan").

RHR SYSTEM: The most complicated system to consider is the Residual Heat Removal System,; since this system involves (a) large numbers of welds, and (b) more than one mode of operation, i.e. performs several system functions. Some system functions involve circulation of Reactor coolant, in which case the more strigent category "C-F' of IWC-2520 must be used. Other system functions fall under category "C-G". The majority of the RHR system can be categorized conservatively as "C-F", requiring the equivalent of 100% examination of one of the multiple streams.

Under the Code Plan, the system breakdown would be as follows:

1) Two major loops are treated as category "C-F". One loop (appearing in P&ID M-1085A) is associated with the suction and discharge of pump C002B-B and Heat Exchangers B001B/B002B. The other loop appears on P&ID M-1085B and is associated with the suction and discharge of pump C002A-A and Heat Exchangers B001A/B002A. Loop A contains 194 welds at structural discontinuities.

Loop B contains 188 welds at structural discontinuities. Averaging the two loops would place 191 welds in the scope of the ISI program.

2) Suction/discharge piping associated with pump C002C-B (M-1085A) is treated as category "C-G". There is only one "stream" involved, so the 60 welds at structural discontinuities in this portion of the system would mean 50% of those, or 30 welds, would be added to the scope of the ISI program.

3) The HBB-79 line on M-1085A and the HBB-84 line on M-1085B would be treated as two systems. These lines contain 15 welds and 16 welds, respectively. Since these would be category "C-G", the average of 15.5 welds would mean 50% of these, or 8 welds, would be added to the scope of the ISI program.

4) The DBB-70/DBB-87 lines in M-1085A and the DBB-69/DBB-87 lines on M-1085B would be treated as two streams. The lines contain 10 welds and 11 welds, respectively. Since these would be category "C-G", the average of 10.5 welds would mean 50% of these, or 6 welds, would be added to the scope of the ISI program.

5) Two additional lines circulate Reactor coolant (category "C-F") and are not considered multiple streams. These are 6"-GBB-84 on P&ID M-1085A (10 welds) and 20"-GBB-31 on P&ID M-1085B (4 welds). These would add 14 welds to the scope of the ISI program.

6) Thus, the use of the code plan would require the inservice examination of:

191 welds	(from paragraph (1) above)
30 welds	(from paragraph (2) above)
8 welds	(from paragraph (3) above)
6 welds	(from paragraph (4) above)
14 welds	(from paragraph (5) above)
249 welds	Total

Approximately 62 welds on the RHR system would be examined each 10 years, for a total of 249 examinations over the life of the plant.

Under the MP&L plan, 101 welds are within the scope of the ISI program. Each weld would be examined each 10 years, for a total of 404 examinations conducted over the life of the plant.

LPCS AND HPCS SYSTEMS: A similar analysis of the Low and High Pressure Core Spray systems yields the following totals:

For LPCS, the system has a total of 36 welds at structural discontinuities. Applying category "C-G", 18 welds in the scope of the ISI program would be examined under the Code Plan, broken down into 10 year intervals as 5+4+5+4 = 18 total examinations. Under the MP&L Plan, the 5 welds in the ISI program would be examined each 10 years, for a total of 5+5+5+5 = 20 total examinations.

For the HPCS the system has a total of 47 welds at structural discontinuities. Applying category "C-G", 24 welds in the scope of the ISI program would be examined under the Code Plan, broken down into 10 year intervals of 6+6+6+6 = 24 total examinations. Under the MP&L Plan, the 7 welds in the ISI program would be examined each 10 years, for a total of 7+7+7+7 = 28 total examinations.

CONCLUSIONS: The MP&L Plan exceeds the ASME Code requirements in terms of total examination effort. In addition, a higher percentage of welds is examined during Inservice Inspection (as compared to the baseline examinations) under the MP&L selection criteria. The MP&L Plan concentrates examinations at locations where failure mechanisms are postulated to occur (high stress welds) and provides for better probability of detection of adverse trends in the pressure boundary since the same representative sample of welds is monitored over the life of the plant.

Any apparent inconsistency between the regulatory-required plan (the "Code Plan") and the MP&L selection criteria results from the fact that MP&L's plan is more plant specific than the generic code requirements and is more responsive to the needs of the BWR-6/Mark III containment system as installed at the Grand Gulf Nuclear Station.

RESPONSE TO 121.11

The anticipated date for the submittal of the finalized Preservice Inspection Report is June 1982, based on current fuel load schedule of December 1981. The results of the RPV Unit 1 Preservice Examinations were provided by way of NIS-1 owners Data Reports submitted for NRC review by letter, MP&L serial no. AECM 81/328

A) Per responses to NRC questions, 121.7 and 121.12, G.E. ISI Isometrics are being provided , confirming the MP&L PSI Program was performed in accordance with ASME Section XI Code requirements. Relief Request are being submitted as part of this response (see attached).

B) All Preservice RPV Unit 1 examinations have been complete and no Relief Request are required.

c) Relief Request for specific components and piping welds, with primary reasons that a specific examination is impractical, as well as technical justifications for relief, are being provided as part of this response.

d) The following is a list of those Request For Relief:

RELIEF REQUEST NO.	SUBJECT
00001*	Guard Pipe Access
00002	Pheripheral CRD's
00003	Pump Casing Welds
00004	RHR Heat Exchanger
00005	Thermal Tee Welds
00006	Recirculation Pumps

*Previously submitted to NRC by way of MP&L letter, serial no. AECM 80/248

RESPONSE TO 121.12

MP&L has been asked to discuss the criteria used to select ASME Code Class 2 components for Preservice Examination.

General: The GGNS PSI Program Abstract is based upon the MP&L letter AECM-801238, dated October 2, 1980. This letter documented MP&L's intent to adopt the 1977 Edition of the Section XI Code and Addenda through Summer 1978, as permitted by the Federal Register dated October 1974. However, the Register also requires that ECCS, RHR and CHR (CHR is not applicable to BWR) systems shall be examined per the 1974 Edition of Section XI and Addenda through Summer 1975. The specific criteria used to select Class 2 piping welds is as follows:

Non-ECCS and RHR Systems: Components in these systems not exempted by the provisions of IWC-1220 shall be examined , in so far as practical, by the requirements listed in Table IWC-2500-1, Examination Category C-F. As permitted by this table, the piping weld examinations performed shall total 25% of the non-exempt piping welds for that system. (50% for Main Steam) Portions of systems subject to this examination include the Main Steam and Feedwater Lines in the Auxiliary Building, the steam supply to the RCIC turbine, the Control Rod Drive System and portions of lines carrying steam to the RHR heat exchangers.

RHR and ECCS: The criteria used in selection of Code Class 2 piping welds in these systems shall be referred to as the "MP&L Plan". The MP&L Plan consists of the application of IWC-1220 (a) (the pressure and temperature exemption) and IWC-1220 (d) (size exemption) and not taking credit for IWC-1220 (b) (exemption of non-RHR and ECCS which do not function during normal reactor operation) and IWC-1220 (c) (water chemistry exemption). Therefore, MP&L's sampling plan is based upon the welds that are no longer exempted by water chemistry (IWC-1220 (b) was never applied). From this total number of welds, MP&L has elected to examine 10% as a sample. The 10% was applied as follows:

1. The welds to be examined shall be 100% of the terminal ends of pipe at vessel nozzles, with the ramainder of the 10% selected proportionally from the following:

   a) Circumferential welds at locations where loadings due to Normal and Upset conditions would result in stress levels calculated to exceed the value 0.8 $(1.2\ s_b + s_A)$ when determined by the sum of equations (9) and (10) in Paragraph NC-3652 of Section III of the ASME Code.

   b) Dissimilar metal welds.

   c) Welds which cannot be pressure tested in accordance with IWC-5000.

   d) A sufficient number of additionsl welds at structural discontinuities.

2. The welds to be examined shall be distributed approximately equally among runs (or portions of runs) that are essentially similar in design.

In addition, all welds within the No Break Zone (NBZ), not examined, per the 10% criteria, have been 100% Ultrasonically examined per FSAR Paragraph 3.6.A-15. Therefore, the total number of weld examinations reflected by the GGNS PSI Plan will be in excess of 10% of the non-exempt welds.

MP&L's response to the NRC question 121.10 discusses, in detail, the comparison between the MP&L Plan and the "Code Plan". This response concludes that the MP&L Plan exceeds the ASME Code requirements in terms of total examination effort. In addition, a higher percentage of welds is examined during Inservice Inspection (as compared to the baseline examinations) under the MP&L selection criteria. The MP&L Plan concentrates examinations at locations where failure mechanisms are postulated to occur (high stress welds) and provides for better probability of detection of adverse trends in the pressure boundary since the same representative sample of welds is monitored over the life of the plant.

Any apparent inconsistency between the regulatory-required plan (the "Code Plan") and the MP&L selection criteria results from the fact that MP&L's Plan is more plant specific than the generic code requirements and is more responsive to the needs of the BWR-6/Mark III containment system as installed at the Grand Gulf Nuclear Station.

In regards to the request for additional ISI Isometrics, MP&L is providing those ISI Isometrics as part of this response.

RESPONSE TO 121.13

Supplement 7 of ASME Section XI, Appendix III was used as the basis for examination of stainless steel piping welds. This supplement permits three recommended modifications of the Appendix III requirements.

(a) 1. Angles of other than 45^{0} are permitted where metallurgical characteristics impede the effective use of 45^{0} beams. This is not of major significance, since other angles could already be used for flaw evaluation or when weld geometry was more amendable to other angles.

2. The substitution of a reflector depth requirement of a flat 10% of (t) in lieu of the equation specified in III-3430. The standard equation specifies notch depth to be calculated as:

$$.104t - .009t^2 \qquad \text{(Equation 1)}$$

The effect of the expression ($.009t^2$) is to require a correspondingly smaller notch depth as (t) becomes large. At a (t) of 2.0 inches, the notch depth as calculated by Equation 1 would be:

$$.104(2.0) - .009(2.0)^2$$

$$.208 - .009(4)$$

$$.208 - .0036$$

$$.172" \text{ deep}$$

Substitution of a flat 10% of (t) would yield a notch depth of .200 under the supplement 7. An ultrasonic truism is that a smaller reference reflector provides a greater sensitivity than a larger reference reflector, all other things being equal. Therefore, we continued to manufacture calibration standards to Equation 1.

3. Supplement 7 states that Figure III-3230 may not apply to austenitic material. However, this is not actually the case. Figure III-3230 sets up a requirement relating search-unit-to-weld-centerline distance, wall thickness "t", and the tangent of the beam angle. The purpose is to ensure that the sound beam reaches the weld root area when examinations are limited to the half-vee examination.

The actual relationship of the three parameters is the same regardless of material type. What does change is the angle of the beam as the material changes from ferritic to austenitic.

(b) Adequate examination sensitivity over the required examination volume was assured. Calibration standards used were of the same material type, wall thickness, and diameter as the piping system being examined. Reference

reflectors were incorporated into the Distance Amplitude Correction (DAC) curves at the same metal paths as defects would be encountered during examination. In two cases, it was recognized that attenuation of the sound beams was excessive. These two cases were the large diameter/large wall thickness stainless steel recirculation piping clad with corrosion resistant 308L weld metal, and the dissimiliar metal welds on the RPV safe ends. In both instances, separate examination procedures were developed and utilized. For the CRC clad pipe welds, additional calibration standards were fabricated which were clad in the same manner as the welds in the plant. For the safe end welds, calibration was performed on side drilled holes located in weld metal and the angle beam examinations were supplemented by straight beam examinations. The use of straight beam examinations to supplement angle beam examinations is addressed in ASME Section V.

(c) All examination procedures used were demonstrated to the satisfaction of the Authorized Nuclear Inservice Inspection agency representative in accordance with ASME Section XI requirements.

(d) The suggestions made in paragraph (d) and (e) of question 121.13 are
(e) appreciated. However, similar requirements are already in place, or will be incorporated for the inservice examinations.

RESPONSE TO 121.14

Augmented Liquid Penetrant Examinations, of the inner radius and bore regions of the entire nozzle of each of the Feedwater Nozzles, was performed prior to installation of the Sparger in accordance with Section 4.3 of NUREG-0619.