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July 3, 1991

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
ASME Section XI Relief Request Number I-00009 Revision 2

GNRO-91/00113

Gentlemen:

This Submittal requests relief from the requirements of ASME Section XI, in accordance with 10CFR50.55a(g)(5)(iv) and 10CFR50.55c(g)(6)(i). A revision to the previously approved relief request is attached.

Relief Request I-00009 Revision 2 addresses three welds that have been deleted. These welds are in 3/4" component connections. It has been determined that these welds are exempt from inservice inspection under provisions of ASME Section XI, subparagraph IWC-1220 (c). Deletion of these welds reduces the percentage of accessible welds requiring surface examination to 82% (from 87%).

Certain welds were also added. These welds were included in Relief Request I-00009, Revision 0 and relief from examination was granted by the NRC. The welds were inadvertently omitted from Revision 1 of the relief request. Relief from examination is still required.

Section VI, Item 7, of the relief request is revised to delete specific reference to frequency of testing. It was not the intent of the relief request to define a test frequency. Technical Specifications specify the frequency of tests required to assure system operability. Deletion of test frequency does not change the basis for relief.

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Your review and approval of these requests is requested prior to January 1, 1992, in order to allow planning for the upcoming refueling outage, which is scheduled for April 1992. If additional information is required to support your review, please advise.

Yours truly,

WTC

WTC/JEO/mtc

attachments: 1. Summary of Revision 2 Changes
2. Relief Request Number I-00009 Revision 2

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Summary of Revision 1 Changes - Relief Request I-00009

"Inservice Inspection of Pump Casing and Attachment Welds"

Relief Request Revision 2 Item No.	Change Requested	Reason for Change/Comments
E12 RHR pump "B" welds DH-11 and DH-12; E21 LPCS pump welds DH-11 and DH-12; E22 HPCS pump welds DH-11 and DH-12.	Delete Items	These items are in 3/4" component connections and are exempt from inservice inspection under ASME Section XI, subparagraph IWC-1220(c). This would reduce the percentage of <u>accessible</u> welds requiring surface examination from 87% to 82%. Section IV, Item 9.
Section VI, Item 7	Delete	Technical Specifications specify the frequency of tests required to assure system operability.
E22 HPCS pump welds SB-2 and SB-3.	Add Items	These welds were included in Revision 0 and relief was granted. The welds were inadvertently omitted from Revision 1 of the relief request. Relief from examination is still required.

Relief Request Number I-00009 Revision 2

"Inservice Inspection of Pump Casing and
Attachment Welds"

Pages Following:

5 Pages	Relief Request - Revision 2
4 Pages	Drawings

GRAND GULF NUCLEAR STATION
INSERVICE INSPECTION
TEN YEAR PROGRAM

Inservice Inspection Requirements
Section 4
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INSERVICE INSPECTION OF PUMP CASING AND ATTACHMENT WELDS

- I. Component: Pump casing and attachment welds located within the surrounding concrete pump support encasement for the following pumps (see attached list and sketches):
- | <u>PUMP</u> | <u>PUMP NO.</u> | <u>SKETCH NO.</u> |
|--------------------------|-----------------|-------------------|
| Residual Heat Removal | 1E12C002B | RH-8-12 |
| Low Pressure Core Spray | 1E21C001 | LP-9-4 |
| High Pressure Core Spray | 1E22C001 | HP-8-10 |
- II. Code: The three pumps listed above were designed and fabricated to the ASME Section III, class 2 requirements. Applicable Inservice Inspection is to be performed in accordance with ASME Section XI, 1977 Edition through and including Summer 1979 Addenda and Code Case N 343.
- III. Code Requirements: Pressure retaining welds, and attachment welds that provide a support function are required to receive a surface examination once every ten-year interval in accordance with ASME Section XI, Table IWC-2500-1 category C-C and C-G.
- IV. Information to support the determination that the Code requirements are impractical: Inaccessible pump casing welds are located where the concrete pump support encasement only allows a 3 inch clearance between the pump casing and the concrete encasement wall (see figure 1 for details of the design). Due to the limited accessibility, it is impractical to surface examine those portions of the welds located within the surrounding concrete pump support encasement. The 1E12C002B and 1E21C001 pumps also have a support integrally welded to the bottom exterior of the pump barrel that rests against the sump floor. The clearance between the floor and the bottom of the barrel is approximately 1 inch preventing sufficient access to perform the surface examination of the 1/2 inch of base material on each side of the attaching weld (see figure 2).

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INSERVICE INSPECTION OF PUMP CASING AND ATTACHMENT WELDS

V. Specific relief
Requested:

Permission is requested to exempt from inservice inspection the inaccessible portions of the pump casing welds listed on Table 1. Also permission is requested to exempt the base material associated with the support attachment welds from the surface examinations as shown in figure 2.

VI. Reasons why relief
should be granted:

Request for exemption should be granted for the following reasons:

1. The pump casing welds have been volumetrically examined by radiography and passed in accordance with the ASME Section III, Class 2 requirements.
2. The attachment welds were surface examined and accepted in accordance with the requirements of ASME Section III, Class 2 requirements.
3. The accessible length of each applicable casing weld will be surface examined in accordance with ASME Class 2 requirements.
4. The entire weld volume of each support attachment weld will be surface examined in accordance with ASME Class 2 requirements.
5. The failure of these welds, thus leading to failure of the pump, would have no adverse effect on plant safety, as redundant emergency core cooling systems are provided.
6. 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.
7. The systems, including the pumps, are tested per the GGNS Operating License Manual (Technical Specifications) requirements to ensure operability.

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INSERVICE INSPECTION OF PUMP CASING AND ATTACHMENT WELDS

VI. Reasons why relief
should be granted
(continued):

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

9. Approximately 82 percent of the welds on the
subject pump, which require surface
examination, are accessible. Performance of
the required examinations on these
accessible welds should ensure that generic
degradation is not occurring in these pump
casing welds.

NOTE: A similar request for relief from preservice
inspection of the pump casing welds has been
accepted by the NRC in GGNS Safety Evaluation
Report, Supplement No. 2.

VII. Alternate Testing:

None

VIII. NRC discussion
statement
(Revision 1):

The following statements, conclusions,
recommendations, etc. have been adopted by the NRC
and are to be considered part of this
request-for-relief's approval.

Since the surface examinations can be conducted
from either the external or internal surface of
the pump casing, an attempt should be made to
examine the portions of the casing welds,
inaccessible on the external surface, on an
internal surface if the pumps are disassembled for
maintenance.

Therefore, relief is recommended as requested
provided:

- (a) The surface examinations are performed to
the maximum extent practical,
- (b) the code-required system pressure tests are
performed, and
- (c) the surface examinations are completed from
the internal surface if a pump is
disassembled for maintenance.

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INSERVICE INSPECTION OF PUMP CASING AND ATTACHMENT WELDS

VIII. NRC discussion
statement (Revision 1,
continued):

NRC additional discussion for revision 1 to the
relief request:

The staff concludes that the limited surface examination of the support-to-casing welds for the residual heat removal pump and the low pressure core spray pump will provide the necessary assurance of structural reliability because although 1/2 inch of base metal on each side of the weld cannot be examined, 100% of the weld metal will be examined. In addition, if the pumps are disassembled for maintenance, surface examinations will be completed from the internal surface. The staff also concludes that compliance with the specific requirements of Section XI would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety. Therefore, relief is granted as requested.

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TABLE 1
LIST OF PUMP WELDS

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E12 - RHR PUMP "B" CASING

Welds Surfaces That Shall Be Examined

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

Welds That Can Be Partially Examined

SB-2 (18" accessible, 54" inaccessible)

Welds that cannot be examined

SB-1 (inaccessible)

Attachment welds that can be partially examined

SB-12 (see figure 2 for details of limitation)

E21 - LPCS PUMP CASING

Welds Surfaces That Shall Be Examined

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

Welds That Can Be Partially Examined

SB-2 (3" accessible, 69" inaccessible)

Welds That Cannot Be Examined

SB-1 (inaccessible)

Attachment Welds That Can Be Partially Examined

SB-12 (see figure 2 for details of limitation)

E22-HPCS PUMP CASING

Welds Surfaces That Shall Be Examined

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

Welds That Can Be Partially Examined

SB-4 (68" accessible, 4" inaccessible)

Welds That Cannot Be Examined

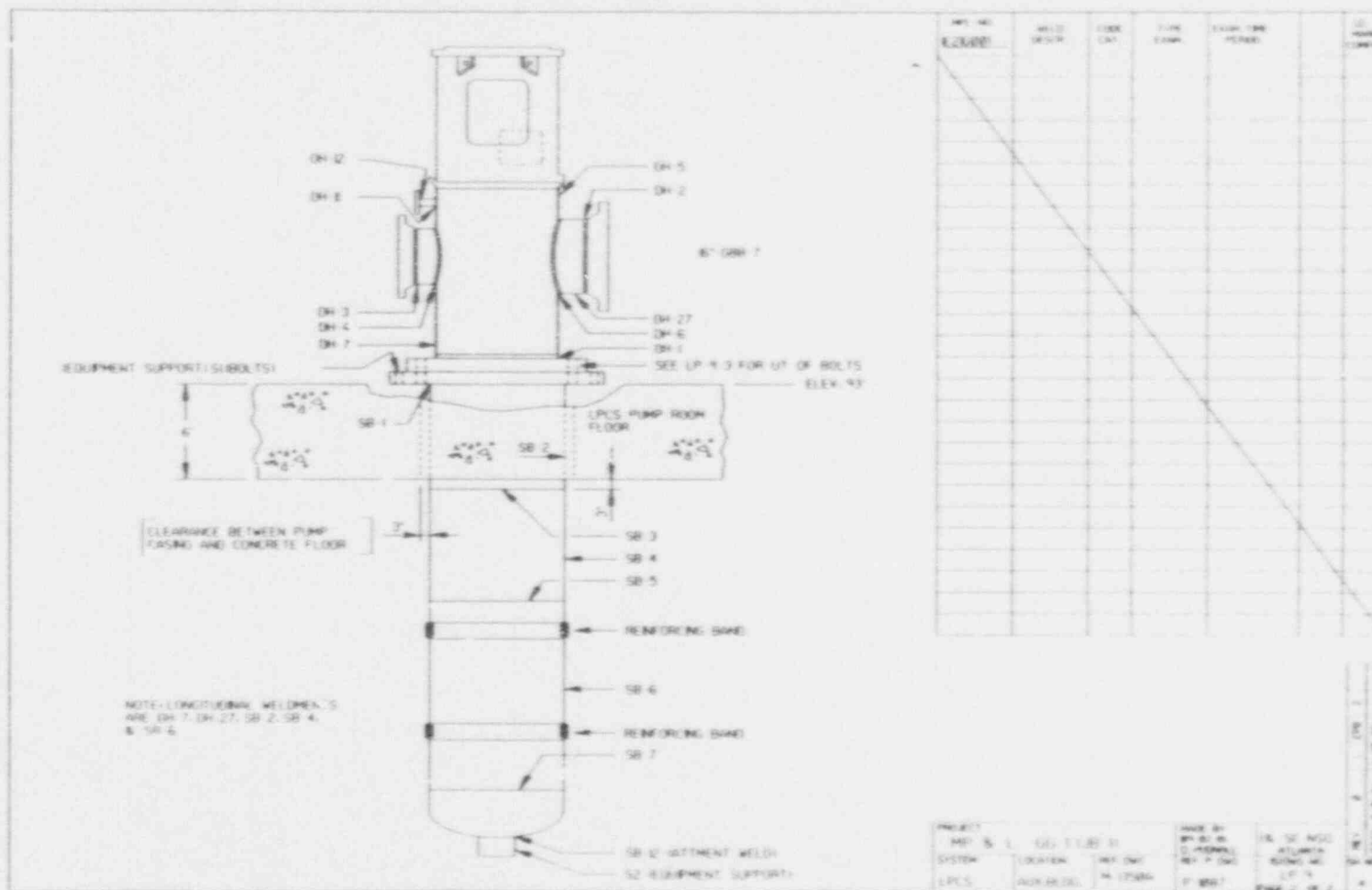
SB-1 (inaccessible)

SB-2 (inaccessible)

SB-3 (inaccessible)

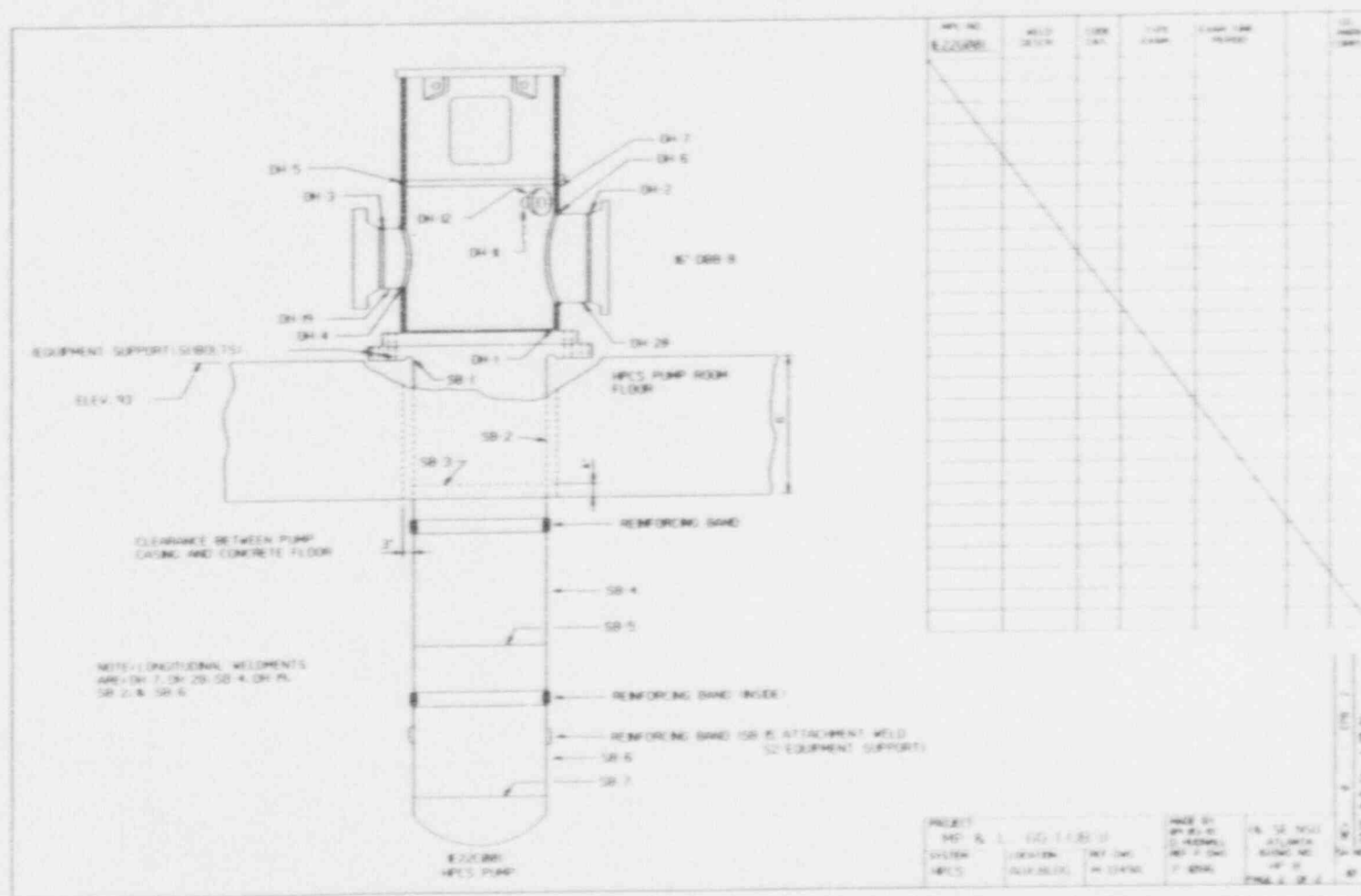
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FIGURE 1



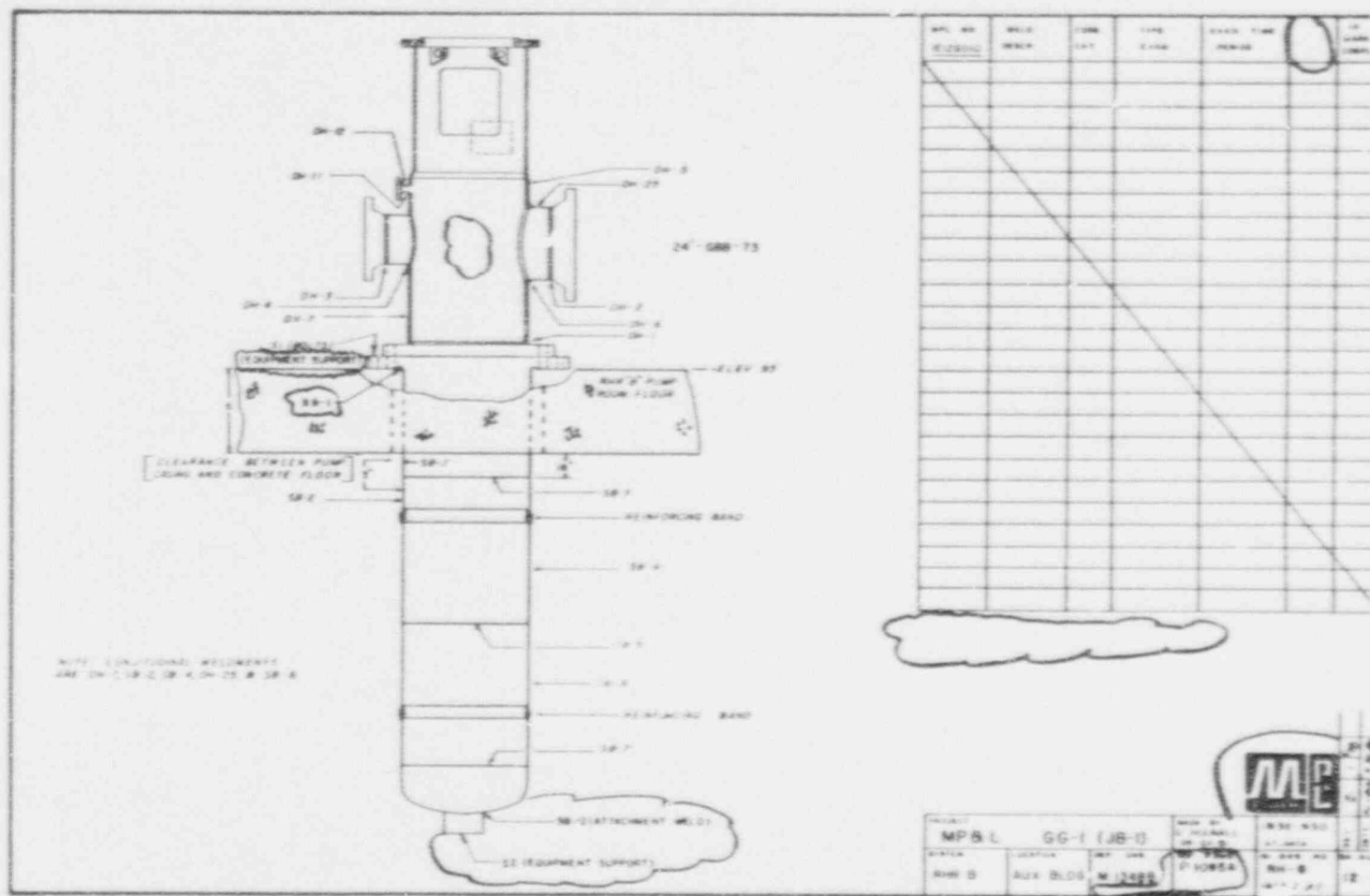
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FIGURE 1



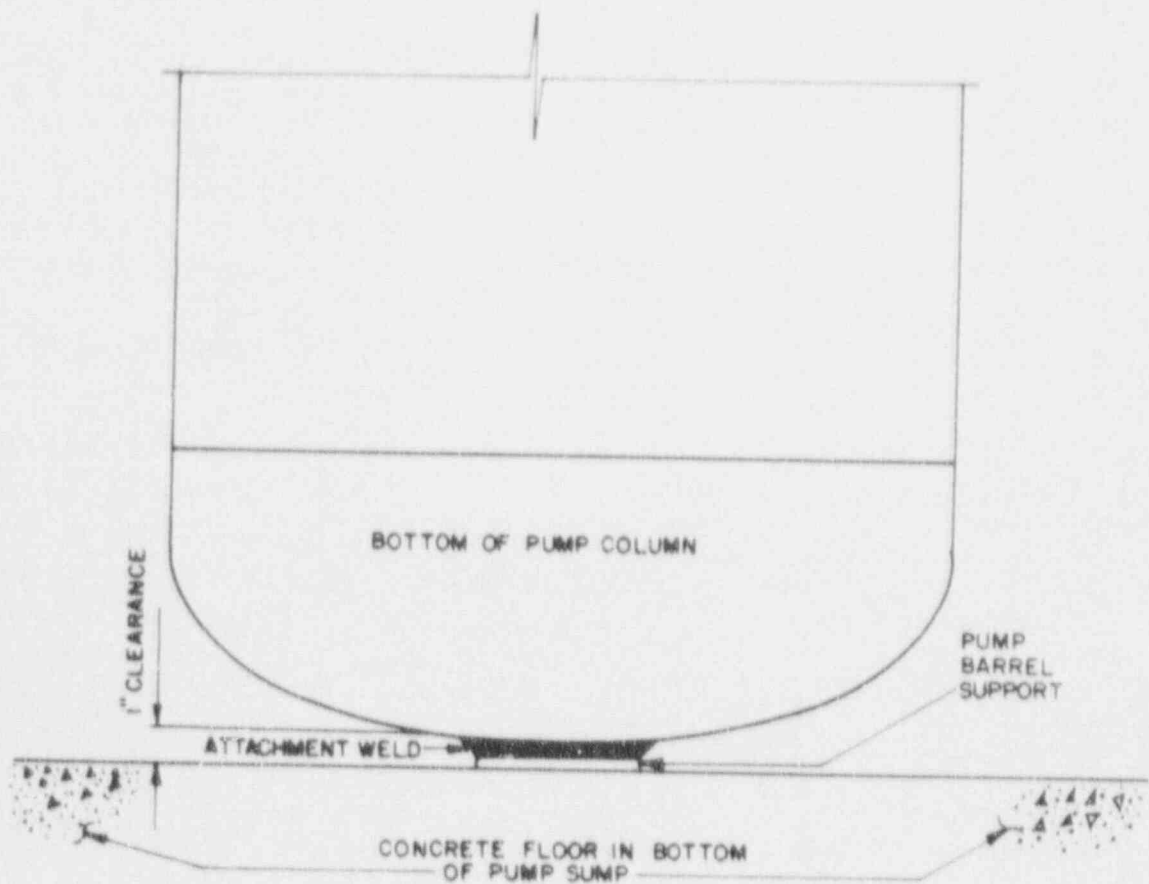
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FIGURE 1



Relief Request NO. I-00009

FIGURE 2



ATTACHMENT WELD LIMITATIONS
PUMPS 1E12C002B AND 1E21C001