

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO THE FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM

SYSTEMS ENERGY RESOURCES, INCORPORATED

GRAND GULF NUCLEAR STATION UNIT 1

DOCKET NO. 50-416

INTRODUCTION

The Technical Specification for the Grand Gulf Nuclear Station Unit 1 (GGNS-1) states that inservice examination of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g) except where specific written relief has been granted by the Commission. Some plants were designed in conformance to early editions and addenda of Section XI. Consequently, certain requirements of later editions and addenda of Section XI are impractical to perform because of the plant's design, component geometry, and materials of construction. Regulation 10 CFR 50.55a(g)(6)(i) authorizes the Commission to grant relief from those requirements upon making the necessary findings.

The Licensee submitted the first ten-year Interval Inservice Inspection Program for the Grand Gulf Nuclear Station, Unit 1, by letters dated May 11, June 3, June 29, July 25, September 20, 1984, and October 31, 1985. The staff, with assistance from its contractor, Science Applications International Corporation (SAIC), reviewed and approved the program for the period from July 1, 1985, to July 1, 1995. The Safety Evaluation Report was issued for that evaluation on July 22, 1986. The ISI program for the Grand Gulf Nuclear Station Unit 1 is based on the examination requirements of Section XI of the ASME Code, 1977 Edition, including Summer 1979 Addenda.

In submittals dated June 12, and August 14, 1987, the Licensee requested revision to Relief Requests I-00004, I-00009 and I-00010, which were previously reviewed and evaluated in the July 22, 1986, Safety Evaluation Report, and the review and evaluation of two new Relief Requests I-00014 and I-00015. The revised and new examination limitations were identified while performing inservice inspection during the first refueling outage. The October 26, 1987, letter withdrew the part of Relief Request I-00015 concerned with inspection of the reactor vessel head in accordance with the commitment to the staff in the October 15, 1987, meeting. The November 19, 1987, letter was to upgrade the examination procedure to the requirements of Section XI, 1983 Edition, including Summer 1983 Addenda, ASME Code, for leakage test boundary definition.

The review and evaluation of the Licensee's submittals was performed by the staff with technical assistance from its contractor, Idaho National Engineering Laboratory.

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### EVALUATION

The determinations addressed by the Licensee in the submittals of June 12, August 14, October 26, and November 19, 1987, that certain ASME Code requirements were impractical to perform at the Grand Gulf Nuclear Station Unit 1 were evaluated. A summary of our evaluation is shown in Table 1. The detailed evaluation is attached.

### CONCLUSION

Based on the review of the Inservice Inspection Program and the evaluation of the relief requests we conclude that for the components for which relief was requested and granted, the alternate methods imposed through this document give reasonable assurance of the piping and component pressure boundary and component support structural integrity. The staff has determined that the Code requirements are impractical and, pursuant to 10 CFR 50.55a(g)(6)(f), the granting of the requested relief is authorized by law and will not endanger life or property, or the common defense and security, and is otherwise in the public interest considering the burden that could result if the requirements were imposed on the facility.

TABLE 1

<u>Request Number</u>	<u>Examination Category</u>	<u>Description</u>	<u>Status</u>
I-00004, (Rev. 2)	B-A Item B1.21	Reactor Pressure Vessel	Granted
I-00009 (Revised)	C-C Item C3.70	Pump Casing and Pump Integral Attachment Welds	Granted
I-00010, (Rev. 1)	B-J Items B9.11 and B9.12	Pressure Retaining Piping Welds in Class 1 Systems	Granted
I-00014	B-D Items B3.90 and B3.100	Reactor Pressure Vessel	Granted
I-00015 (Revised)	B-A Items B1.11, B1.12, B1.22 B.130 and B1.40 B-D Items B3.90 and B3.100 B-F Item B5.10	Reactor Pressure Vessel	Granted
I-00016	D-A, D-B and D-C	Integral Attachment, Class 3	Granted
I-00017	C-H	Pressure Retaining Components, Class 2	Granted
I-00018	B-P	Pressure Retaining Components, Class 1	Granted

ATTACHMENT TO THE SAFETY EVALUATION  
BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO THE FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM  
SYSTEM ENERGY RESOURCES, INCORPORATED  
GRAND GULF NUCLEAR STATION - UNIT 1  
DOCKET NO.: 50-416

I. INTRODUCTION

This document was prepared with the technical assistance of U.S. Department of Energy (DOE) contractors from the Idaho National Engineering Laboratory (INEL).

Technical Specification 4.0.5 for the Grand Gulf Nuclear Station Unit 1 states that the inservice examination of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g) except where specific written relief has been granted by the Commission. Some plants were designed in conformance to early editions of this Code Section, consequently certain requirements of later editions and addenda of Section XI are impractical to perform because of the plant's design, component geometry, and materials of construction. Regulation 10 CFR 50.55a(g)(6)(i) authorizes the Commission to grant relief from those requirements upon making the necessary findings.

II. TECHNICAL REVIEW CONSIDERATIONS

On July 22, 1986, the NRC issued a Safety Evaluation Report (SER) discussing the evaluation of the First 10-Year Interval Inservice Inspection (ISI) Program for Grand Gulf Nuclear Station, Unit 1, and information related to requests for relief from certain Code requirements which the Licensee had determined to be impractical to perform during the first inspection interval. In a submittal dated June 12, 1987, the Licensee submitted revisions to Relief Requests I-00004 (Rev. 2), I-00009 (Revised), and I-00010 (Rev. 1), which were previously reviewed and evaluated in the July 22, 1986 SER, and two new relief requests (I-00014 and I-00015). These revised and new relief requests are necessary due to examination limitations identified while performing inservice inspections during the first refueling outage.

In submittals dated August 14 and November 19, 1987, the Licensee submitted three additional relief requests (I-00016, I-00017 and I-00018). The purpose of these requests was to allow the use of ASME Code Section XI, 1983 Edition, Summer 1983 Addenda for examinations of integral attachments and test boundary definition. In a submittal dated October 26, 1987, the Licensee submitted a revision to relief request I-00015.

## III. EVALUATION OF RELIEF REQUESTS

This evaluation, which addresses the June 12, August 14, October 26, and November 19, 1987, submittals, amends the review of Relief Requests I-00004, I-00009, and I-00010 as reported in the July 22, 1986 SER, and evaluates Relief Requests I-00014, I-00015 (Revised), I-00016, I-00017 and I-00018 in their entirety. The Licensee has demonstrated that either (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specific requirements of this section would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Unless otherwise stated, reference to the Code refers to the ASME Code, Section XI, 1977 Edition including Addenda through Summer 1979.

### A. Relief Request No. I-00004 (Revision 2), Examination Category B-A Item B1.21, RPV Lower Head-to-Shell Weld A-A

Revision 2 to Relief Request No. I-00004 provided additional information with regards to the extent of the alternative manual ultrasonic examinations of lower head-to-shell weld A-A. The Licensee reported that manual examinations will be performed to the maximum extent possible, considering the interferences caused by the RPV support skirt. The support skirt prevents both the 60° and 45° T-Scans from examining the total weld volume. The three recordable indications, previously identified, were recorded in the base material of the head utilizing the 0° scan. These indications will be monitored and, if any of the indications appear to be increasing in size, the Licensee will take appropriate actions.

Evaluation: As reported in the Safety Evaluation Report dated July 22, 1986, the lower head-to-shell weld A-A on the RPV is the transition from the cylindrical shell to the spherical lower head. The weld is accessible through an annular gap approximately 30 inches wide between the RPV and the biological shield wall. The upper portion of the weld will be examined over 100% of the Code required volume using remote, automated ultrasonic inspection equipment. However, the Licensee reports that the automated equipment, as currently configured, cannot be used to examine the lower portion of the weld due to the spherical curvature of the lower head. Manual ultrasonic examination of the lower portion of the weld is the only alternative currently available.

The lower portion of weld A-A was examined over 100% of the length during the preservice examination using manual ultrasonic methods. Based on this examination, the Licensee estimates that approximately 16 man-hours are required exclusive of exit and entry time to conduct a complete manual ultrasonic scan of the lower portion of weld A-A. The radiation field in the region of weld A-A has been estimated to be 800 mR/hr based on radiation fields in similar BWRs following 40-months operation. Combining the estimates of inspection time and radiation level, the Licensee estimates that a total exposure of 14,500 millirem would be required to conduct the inservice examination of the lower portion of weld A-A in the first period. Higher exposures would occur if the examinations are deferred.

In this revised relief request, the Licensee has reported that manual examinations will be performed to the maximum extent possible, considering the interferences caused by the RPV support skirt. In addition, the three indications previously identified will be monitored and, if any of the indications appear to be increasing in size, the Licensee will take appropriate actions.

Conclusions: The staff's Safety Evaluation Report (SER) dated July 22, 1986, concluded that the proposed alternate examinations for relief Request I-00004 will provide the necessary assurance of structural reliability provided the upper portion of the weld is volumetrically examined over 100% of its length, manual volumetric examinations in the lower portion of the weld are performed over a 12 inch by 12 inch area containing three recordable preservice indications and over a 12 inch by 12 inch reference area, and Code-required system pressure tests are performed. In its July 22, 1986 SER, the staff also recommended that more extensive examinations of the lower portion of the weld be performed if actual radiation fields are lower and that the entire lower portion of the weld be examined if automated techniques become available in the first 10-year inspection interval. The present revision to Relief Request I-00004 adopts the staff's recommendations and defines physical limitations to complete examination of the lower half of the weld due to the reactor vessel skirt. The staff concludes that its previous conclusions regarding this relief request have not changed because the manual examination of the lower portion of the weld to the maximum extent possible, considering physical limitations of the vessel skirt, will result in a significant portion of the weld being examined from the lower side and all the weld being examined from the upper side. Any increase in the size of indications of defects would be evaluated and appropriate actions would be taken, which may include more extensive ultrasonic examinations. The staff further 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.

B. Relief Request No. I-00009 (Revised), Examination Categories C-G and C-C, Pump Casing and Pump Integral Attachment Welds

NOTE: The pump casing welds are evaluated in the SER dated July 22, 1986. Relief Request No. I-00009 was revised to include Examination Category C-C, pump integral attachment welds. The request for relief for the pump integral attachment welds is evaluated below.

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-C, Item C3.70 requires a 100% surface examination of Class 2 pump integral welded attachments as defined by Figure IWC-2500-5. This examination is limited to attachments whose base material design thickness is 3/4 inch or greater and to those components required to be examined under Examination Category C-G.

Licensee's Code Relief Request: Relief is requested from performing 100% of the Code required surface examination of the integrally welded attachments, within the surrounding concrete pump support encasements, for the following pumps:

<u>PUMP</u>	<u>PUMP NO.</u>
Residual Heat Removal	1E12C002B
Low Pressure Core Spray	1E21C001
High Pressure Core Spray	1E22C001

Licensee's Proposed Alternative Examination: None.

Licensee's Basis for Requesting Relief: The subject pumps 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, which prevents sufficient access to perform the surface examination of the 1/2 inch of base material on each side of the attachment weld.

Evaluation: The Licensee's revised submittal has been reviewed, including the weld design, the Code requirement from which relief is being requested, and the figure which shows the examination limitation.

Based on this review, it is noted that the Licensee will examine the surface area of the welds and that the pump supports have to be redesigned in order to complete 100% of the Code-required surface examination on the adjacent base material.

Conclusions: 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.

C. Relief Request No. I-00010 (Revision 1), Examination Category B-J, Pressure Retaining Piping Welds in Class 1 Piping Systems

Revision 1 to Relief Request No. I-00010 (Rev. 1) includes an additional twenty Class 1 piping system welds for which relief is requested. The Licensee identified these additional welds during the first refueling outage at Grand Gulf Nuclear Station, Unit 1. All of the additional welds are pump-to-pipe, valve-to-pipe or fitting-to-pipe welds where the

pump, valve, and/or fitting restrict volumetric examination. The subject welds are listed below, along with the system, the weld configuration, and the type of scan with the percent of the weld which cannot be examined for that type of scan.

SYSTEM NO.	WELD NO.	WELD CONFIG.	P-SCAN LIMITATION	T-SCAN LIMITATION
B33	G001W5	ELBOW/PUMP	50%	27.2%
B33	G001W6	PUMP/PIPE	50%	42.4%
B33	G001W8	VALVE/PIPE		50%
B33	G001W28	ELBOW/PIPE	50%	38.4%
B33	G001W29	PUMP/PIPE	50%	38.6%
B33	G001W31	VALVE/PIPE	50%	50%
B33	G5-B1-B	PIPE/SWEEP	50%	40.8%
B33	G5-B1-E	PIPE/SWEEP	50%	36.5%
B33	G023W37	TEE/PIPE	50%	34.5%
B33	G024W8	SWEEP/PIPE		50%
B33	G024W27	SWEEP/PIPE		50%
B33	G10-B1-L	PIPE/SWEEP	50%	
B33	G10-B1-K	PIPE/SWEEP	50%	
B33	G10-B1-J	PIPE/SWEEP	50%	
B33	G10-B1-H	PIPE/SWEEP	50%	
B33	G10-B1-G	PIPE/SWEEP	50%	
B33	G10-B1-F	PIPE/SWEEP	50%	
B33	G001W34	PIPE/CROSS	50%	
B33	G001W34	PIPE/CROSS	50%	
B33	G10-B1-A	PIPE/CROSS	50%	
B33	C10-B1-B	PIPE/CROSS	50%	

Evaluation: As reported in the Safety Evaluation Report dated July 22, 1986, all of the subject welds will receive volumetric examination of the accessible portions during the inspection interval. The Licensee has also committed to conduct an engineering evaluation of the entire weld condition if indications are found during the volumetric examinations. The Code-required surface examination and pressure tests will be conducted on all the welds.

The Licensee has also stated failure of any of the subject welds would not have an adverse affect on plant safety since all of the areas can be isolated or the system can be shutdown in a manner consistent with plant design. In addition, continuous leak detection monitoring is provided on all of the systems containing inaccessible welds.

Conclusions: Based on the review of Revision 1 of Relief Request No. 1-00010 (Rev. 1) and the SER dated July 22, 1986, it is concluded that the limited Section XI volumetric examination, along with the Code-required Section XI surface examination and the hydrostatic test, ensure an acceptable level of inservice structural integrity and 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.

D. Relief Request No. I-00014, Examination Category B-D, Items B3.90 and B3.100, Reactor Pressure Vessel Nozzle-to-Vessel Welds and Nozzle Inside Radius Sections

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-D, Items B3.90 and B3.100 require a 100% volumetric examination of Reactor Pressure Vessel (RPV) nozzle-to-vessel welds and the nozzle inside radius sections as defined by Figure IWB-2500-7.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume on the nozzle-to-vessel welds that are examined utilizing automated methods. Also, relief is requested from examining those areas that are inaccessible with manual techniques for the nozzles that require manual examinations. The following are the affected nozzles:

Automated Techniques

- N1(A&B) Recirculation Outlet Nozzles
- N2(A-M) Recirculation Inlet Nozzles
- N3(A-D) Mainsteam Nozzles
- N4(A-F) Feedwater Nozzles
- N5(A&B) Core Spray Nozzles
- N6(A-C) RHR/LPCI Nozzles

Manual Techniques

- N7 & N8 Top Head Cooling Spray and Spare Nozzle
- N9(A&B) Jet Pump Instrument Nozzles
- N10 CRD Return Nozzle
- N1F Vibration Nozzle

Licensee's Proposed Alternative Examination: None. The Licensee will perform the Code-required volumetric examinations using automated or manual techniques to the maximum extent practical.

Licensee's Basis for Requesting Relief: The Licensee reports that the nozzle design of the BWR-6 does not allow for a full volume examination of the weld and associated 1/2T of base material for the following reasons:

1. Due to the short distance from the weld centerline to the nozzle-to-shell radius, the examination volume can only be scanned from one side (shell side).

2. Also, this short distance prevents extending the scanning arm far enough past the weld towards the nozzle to obtain full coverage of the required volume while scanning from the shell side.

NOTE: See Relief Request No. I-00015 (Revised) for additional limitations due to adjacent components.

Evaluation: The Licensee's submittal has been reviewed, including the tables listing the total Code-required volume of the subject welds with regards to the percentage of the accessible portions of the Code-required volume that can be examined, the information to support the determination that the Code-requirements are impractical, and the figure showing the examination limitations.

The tables provide a comparison of Code requirements and the examinations that are achievable. In this table, the Code-required volume has been subdivided into the areas recognized by Regulatory Guide 1.150 as being more critical and, additionally, the weld and head affected zone coverage has been reported separately. The table also compares the examination coverage that can be obtained manually against what is obtained with automated equipment. This limited additional volume does not appear to be justified based on the ALARA information provided by the Licensee.

The Licensee's submittal also provided supporting technical justifications with regard to applied stress levels, fatigue crack initiation/propagation, radiation embrittlement, consequences of postulated cracking, allowable crack size, and leak before break.

For further ISI examinations, the Licensee should continue to monitor the development of new or improved examination techniques. As improvements in these areas are achieved, the Commission will require that these enhanced techniques be made a part of the inservice examination requirements for the components or welds which received a limited examination.

Conclusions: Based on the above evaluation, it is concluded that a significant percentage of the Code-required volumetric examination will be performed and that this examination, in conjunction with the system leakage test at each refueling outage and a system hydrostatic test each inspection interval, will ensure an acceptable level of inservice structural integrity. 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.

- E. Relief Request No. I-00015 (Revised), Examination Categories B-A, B-D, and B-F, Reactor Pressure Vessel Welds

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-A, Items B1.11 (shell circumferential welds), B1.12

(shell longitudinal welds), B1.22 (meridional head welds), and B1.30 (shell-to-flange weld) all require a 100% volumetric examination as defined by Figures IWB-2500-1, -2, -3, and -4 respectively. Item B1.40 (head-to-flange weld) requires both 100% surface and volumetric examinations as defined by Figure IWB-2500-5.

Examination Category B-D, Items B3.90 (RPV nozzle-to-shell welds) and B3.100 (nozzle inside radius sections) both require a 100% volumetric examination as defined by Figure IWB-2500-7.

Examination Category B-F, Item B5.10 (RPV safe-end welds) requires both 100% surface and volumetric examinations as defined by Figure IWB-2500-8.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume on the following RPV welds:

Circumferential Weld	-	AD
Longitudinal Weld	-	BA, BB, BC, BH, BJ, BK, BM, BN, BP, & BR
Meridional Head Welds	-	DA, DB, BC, and DD
Shell-to-Flange Weld	-	AE
Nozzle-to-Vessel Welds	-	N2D, N2C, N2J, N2K, N4A, N4C, N4D, N4F, N9A, & N9B
Nozzle Inside Radius	-	N7 & N8
RPV Safe-End Welds	-	N1A, N1B, N2A thru N2N, N4A thru N4F, N5A, N5B, N6A, N6B, N6C, N9A, and N9B

Licensee's Proposed Alternative Examination: None. The Licensee states that the Code-required volumetric examination of the subject welds will be performed to the maximum extent practical.

Licensee's Basis for Requesting Relief: The Licensee's submittal provided descriptions of the geometric limitations for each of the subject welds. The RPV welds, including the nozzle-to-vessel welds, all have geometric interferences caused by adjacent nozzles, welded name plates, head penetrations, or restrictions caused by the closure head flanges.

The two nozzle inside radius sections (N7 and N8) will receive limited examinations due to twelve 1-3/8 inch diameter holes drilled and tapped 3 1/4 inches deep into the nozzle face. These holes prevent volumetric examination of the bore region of the nozzle inner radius.

Due to the geometric configuration of the nozzle-to-safe end assembly, full Code coverage cannot be obtained from two directions. The Licensee will be performing these examinations with either shear wave, refracted longitudinal wave, or both due to the complex bi and trimetallic structures of the nozzle-to-safe end assembly.

Evaluation: The Licensee's submittal has been reviewed, including the figures showing the geometric configuration of the welds and the examination limitations, the tables providing a listing of the affected components and RPV welds with a detailed description of the cause and degree of the limitation, and the technical justifications for the granting of relief.

The examination limitations of the RPV welds, including the nozzle-to-vessel welds, appear to be consistent with those reported on plants with similar vessel design. Because of the larger annulus between the reactor vessel and the concrete shield at Grand Gulf Unit 1, there is better access for inservice inspection of the reactor vessel than for most BWRs.

Currently, examinations of the nozzle-to-safe end assembly welds are performed utilizing automated systems. The coverage reported in the Licensee's submittal indicates that a limited additional coverage can be obtained in the event future examinations are performed with manual techniques. However, relief would still be required even if the manual volumetric examinations are performed because 100% of the Code-required coverage cannot be obtained.

For future ISI examinations, the Licensee should continue to monitor the development of new or improved examination techniques. As improvements in these areas are achieved, the Commission will require that these enhanced techniques be made a part of the inservice examination requirements for the components or welds which received a limited examination.

Conclusions: The staff concludes that examination to the extent described in this relief request will provide the necessary assurance of structural integrity because the large sample of welds that will be examined is sufficient to detect any significant service-induced degradation. 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.

F. Relief Request No. 1-00016, ISI of Examination Category D-A, D-B, and D-C, Integral Attachments

Code Requirement: Section XI, Table IWD-2500-1, Examination Categories D-A, D-B, and D-C, all require Class 3 integral attachments to receive a visual examination (VT-3) each inspection period.

Licensee's Code Relief Request: Relief is requested from performing the Code-required VT-3 examinations on Class 3 integral attachments on a frequency consistent with the requirements of ASME Code Section XI, 1977 Edition, Summer 1979 Addenda, Table IWD-2500-1.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform the Code-required VI-3 examinations on Class 3 integral attachments on a frequency consistent with the requirements of ASME Code Section XI, 1983 Edition, Summer 1983 Addenda, Table IWD-2500-1.

Licensee's Basis for Requesting Relief: This request for relief is based on the following:

1. The subject integral attachments were designed, fabricated and examined to the requirements of ASME Code Section III, Class 3 requirements.
2. The requested change would be consistent with the examination frequencies specified in ASME Code Section XI for Class 1 and Class 2 components of similar function.
3. Examining the integral attachments once each interval compared to three times each interval reduces total man-rem exposure by 66%.
4. The material stress allowables and method of analysis used in the design of Class 3 integral attachments is the same as those used in Class 2 designs. The design safety margin for a Class 3 integral attachment is therefore the same as for a Class 2 design. For this reason, examinations of Class 3 integral attachments at a frequency exceeding that of Class 2 is not necessary.
5. This request for relief is consistent with the currently approved edition of ASME Section XI (1983 Edition, Summer 1983 Addenda).

Evaluation: 10CFR50.55a(g)(3)(v) permits updating to the requirements of later approved editions and addenda of the ASME Code, or portions thereof, which are incorporated by reference in paragraph 50.55a(b), subject to the limitations and modifications listed therein.

Conclusions: Based on the above evaluation, it is concluded that the Licensee is permitted to update to later editions and addenda of the Code and that compliance with the specific requirements of Section XI (77579) would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety. Therefore, relief is granted as requested.

G. Relief Request No. I-00017, Examination Category C-H, Class 2 System Pressure Tests

Code Requirement: Class 2 pressure retaining components, Examination Category C-H, are required to receive a system pressure or functional test each inspection period and a system hydrostatic test each inspection interval.

Licensee's Code Relief Request: Relief is requested from performing the Code-required system pressure test in accordance with ASME Code Section XI, 1977 Edition, Summer 1979 Addenda (77S79).

Licensee's Proposed Alternative Examination: The Licensee proposed to perform the Code-required system pressure test utilizing boundaries consistent with ASME Code Section XI, 1983 Edition, Summer 1983 Addenda (83S83), Table IWC-2500-1, Examination Category C-H, note 7.

Licensee's Basis for Requesting Relief: This relief request is based on the following:

1. All components excluded from pressure testing by the clarification provided in 83S83 are designed, fabricated, installed, and tested to the requirements of ASME Code Section III, Class 2.
2. The components excluded from pressure testing by this relief request are not required to aid the systems in performing their safety function.
3. This request for relief is consistent with the currently approved edition of ASME Section XI (83S83) which provides definition or scope of the pressure boundary that is required to be tested.

Evaluation: 77S79, Table IWC-2500-1, Examination Category C-H does not provide definition or scope of the pressure boundary that is required to be pressure tested. Later editions added clarification that the pressure boundary includes only those portions of the system required to operate or support the safety system function up to and including the first normally closed valve (including a safety or relief valve) or valve capable of automatic closure when the safety function is required. With the addition of this clarification, non-essential piping is removed from the pressure test boundaries, thus eliminating unnecessary man-rem exposure.

10 CFR 50.55a(g)(3)(v) permits updating to the requirements of later approved editions and addenda of the ASME Code, or portions thereof which are incorporated by reference in paragraph 50.55a(b), subject to the limitations and modifications listed therein.

Conclusion: Based on the above evaluation, it is concluded that the Licensee is permitted to update to later editions and addenda of the Code and that compliance with the specific requirements of Section XI (77S79) would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety. Therefore, relief is granted as requested.

H. Relief Request No. I-00018, Examination Category B-P, Class 1 Pressure Retaining Components

Code Requirement: Class 1 pressure retaining components, Examination Category B-P, are required to receive a system leakage

test (IWB-5221) each refueling outage, and a system hydrostatic test (IWB-5222) each inspection interval.

Licensee's Code Relief Request: Permission is requested to perform system leakage testing of the Class 1 boundary pursuant to the requirements of Section XI of the ASME Code, 1983 Edition, Summer 1983 Addenda, Table IWB-2500-1, Category B-P. The request applies to the leakage test and not to the hydrostatic test required each interval. A list of the systems that are examined by the VT-2 method but excluded from pressurization is as follows:

<u>ITEM</u>	<u>SYSTEM</u>	<u>LINE CLASS</u>	<u>DESCRIPTION</u>
1	B21	2"-DBA-19	LINE DOWNSTREAM OF Q1B21-F002
2	B21	1"-DBA-87	LINE DOWNSTREAM OF Q1B21-F136A
3	B21	1"-DBA-87	LINE DOWNSTREAM OF Q1B21-F136B
4	B33	2"-DBA-42	LINE DOWNSTREAM OF Q1B33-F029
5	B33	2"-DCA-24	LINE DOWNSTREAM OF Q1B33-F051A
6	B33	2"-DCA-24	LINE DOWNSTREAM OF Q1B33-F051B
7	C41	3/4"-DCA-4	LINE DOWNSTREAM OF Q1C41-F215B
8	C41	1"-DCA-31	LINE DOWNSTREAM OF Q1C41-F210
9	C41	3/4"-DCA-33	LINE DOWNSTREAM OF Q1E12-F219
10	E12	1"-DBA-80	LINE DOWNSTREAM OF Q1E12-F344
11	E21	1"-DBA-31	LINE DOWNSTREAM OF Q1E21-F207
12	G33	3/4"-DBA-82	LINE DOWNSTREAM OF Q1G33-F001
13	G33	1"-DBA-86	LINE DOWNSTREAM OF Q1G33-F241
14	E22	1"-DBA-78	LINE DOWNSTREAM OF Q1E22-F218
15	E22	12"-DBA-75	LINE UPSTREAM OF Q1E22-F005
16	E22	14"-DBA-5	LINE UPSTREAM OF Q1E22-F003
17	E38	1 1/2"-DBA-87	LINE UPSTREAM OF Q1E38-F002A&B

Licensee's Proposed Alternative Examination: None

Licensee's Basis for Requesting Relief: The request is based on the following considerations:

1. All components excluded from the system leakage test are designed, fabricated, installed, and tested to the requirements of ASME Section III, Subsection NB (Class 1).
2. The components excluded from the system leakage test are subjected to the system hydrostatic test once each interval.
3. The high/low pressure interfaces identified by Grand Gulf Nuclear Station Technical Specification 4.4.3.2.3 are exempt from this request for relief.

4. This request for relief is consistent with the current NRC approved edition of ASME Section XI (1983 Edition, Summer 1983 Addenda).

Evaluation: 10 CFR 50.55a(g)(3)(v) permits updating to the examination requirements of later approved editions and addenda of the ASME Code, or portions thereof, which are incorporated by reference in paragraph 50.55a(b), subject to the limitations and modifications listed therein.

Conclusions: It is concluded that the Licensee is permitted to update the examination requirements to later editions and addenda of the ASME Code and that compliance with the specific requirements of Section XI, 1977 Edition including Summer 1979 Addenda, would result in a hardship on the Licensee without a compensating increase in the level of quality and safety. The relief is granted as requested in a letter dated November 19, 1987.

#### IV. CONCLUSIONS

We conclude from our evaluation of the Licensee's determination that certain Section XI ASME Code, 1977 Edition Summer 1979 Addenda, examination requirements are not practical to perform at the Grand Gulf Nuclear Station, Unit 1. The Licensee requested relief from performing those requirements. Pursuant to 10 CFR 50.55a(g)(f)(i), relief is granted for the following requests: I-00004 (Rev. 2), I-0009 (Revised), I-00010 (Rev. 1), I-00014, I-00015 (Revised), I-00016, I-00017, and (I-00018).