EGG-MS-10169
May 1992

Idaho
National
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TECHNICAL EVALUATION REPORT

TECHNICAL EVALUATION REPORT ON THE SECOND
10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN:
GPU NUCLEAR CORPORATION,
THREE MILE ISLAND NUCLEAR STATION, UNIT 1,
DOCKET NUMBER 50-289

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Work performed under
DOE Contract
No. DE-AC07-76ID01570

Prepared for the
U.S. NUCLEAR REGULATORY COMMISSION

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Prepared for:

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
under
DOE Contract No. DE-AC07-76ID01570
FIN No. D6022 (Project 5)

ABSTRACT

This report presents the results of the evaluation of the *Three Mile Island Nuclear Station, Unit 1 (TMI-1), Second 10-Year Interval Inservice Inspection (ISI) Program Plan*, Revision 0, submitted April 19, 1991, including the requests for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI requirements that the Licensee has determined to be impractical. The Inservice Inspection Program Plan is evaluated in Section 2 of this report for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during the Nuclear Regulatory Commission's (NRC) previous reviews. The requests for relief are evaluated in Section 3 of this report.

This work was funded under:

U.S. Nuclear Regulatory Commission
FIN No. D6022, Project 5
Operating Reactor Licensing Issues Program,
Review of ISI for ASME Code Class 1, 2, and 3 Components

SUMMARY

The Licensee, GPU Nuclear Corporation, has prepared the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection (ISI) Program Plan*, Revision 0, to meet the requirements of the 1986 Edition of ASME Code Section XI. The second 10-year interval began on April 20, 1991 and ends April 19, 2001.

The information in the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection Program Plan*, Revision 0, submitted April 19, 1991, was reviewed. Included in the review were the requests for relief from the ASME Code Section XI requirements that the Licensee has determined to be impractical. As a result of this review, a request for additional information (RAI) was prepared describing the information and/or clarification required from the Licensee in order to complete the review. The Licensee provided the requested information in the submittal dated December 12, 1991.

Based on the review of the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection Program Plan*, Revision 0, the Licensee's response to the Nuclear Regulatory Commission's RAI, and the recommendations for granting relief from the ISI examinations that cannot be performed to the extent required by Section XI of the ASME Code, it is concluded that the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection Program Plan*, Revision 0, is acceptable and in compliance with 10 CFR 50.55a(g)(4), with the exception of Requests for Relief Nos. 10, 13, 14 (in part), and 15 (in part), as discussed in Section 3.0 of this report.

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TECHNICAL EVALUATION REPORT ON THE SECOND 10 YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN: GPU NUCLEAR CORPORATION, THREE MILE ISLAND NUCLEAR STATION, UNIT 1, DOCKET NUMBER 50-289

1. INTRODUCTION

Throughout the service life of a water-cooled nuclear power facility, 10 CFR 50.55a(g)(4) (Reference 1) requires that components (including supports) that are classified as American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1, Class 2, and Class 3 meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components" (Reference 2), to the extent practical within the limitations of design, geometry, and materials of construction of the components. This section of the regulations also requires that inservice examinations of components and system pressure tests conducted during successive 120-month inspection intervals comply with the requirements in the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed therein. The components (including supports) may meet requirements set forth in subsequent editions and addenda of this Code that are incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein. The Licensee, GPU Nuclear (GPUN) Corporation, has prepared the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection (ISI) Program Plan*, Revision 0 (Reference 3), to meet the requirements of the 1986 Edition of the ASME Code Section XI. The second 10-year interval began April 20, 1991 and ends April 19, 2001.

As required by 10 CFR 50.55a(g)(5), if the licensee determines that certain Code examination requirements are impractical and requests relief from them, the licensee shall submit information and justifications to the Nuclear Regulatory Commission (NRC) to support that determination.

Pursuant to 10 CFR 50.55a(g)(6), the NRC will evaluate the licensee's determination that Code requirements are impractical to implement. Alternatively, pursuant to 10 CFR 50.55a(a)(3), the NRC will evaluate the Licensee's determination that either (i) the proposed alternatives provide an acceptable level of quality and safety or that (ii) Code compliance would result in hardship or unusual difficulty without a compensating increase in safety. The NRC may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

The information in the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval ISI Program Plan*, Revision 0, submitted April 19, 1991, was reviewed, including the requests for relief from the ASME Code Section XI requirements that the Licensee has determined to be impractical. The review of the ISI Program Plan was performed using *Standard Review Plan* NUREG-0800 (Reference 4), Section 5.2.4, "Reactor Coolant Boundary Inservice Inspections and Testing," and Section 6.6, "Inservice Inspection of Class 2 and 3 Components."

In a letter dated September 19, 1991 (Reference 5), the NRC requested additional information that was required in order to complete the review of the ISI Program Plan. The requested information was provided by the Licensee in the response to request for additional information regarding the second ten year inservice inspection interval dated December 12, 1991 (Reference 6). In this response, the Licensee, GPU Nuclear Corporation, committed to the volumetric examination of 7.5% of the non-exempt Class 2 piping welds where the wall thickness does not meet the minimum requirements for examination in Table IWC-2500-1, Examination Category C-F-1 (i.e., wall thickness <3/8").

The *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval ISI Program Plan* is evaluated in Section 2 of this report. The ISI Program Plan is evaluated for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and

(d) compliance with ISI-related commitments identified during the NRC's previous reviews.

The requests for relief are evaluated in Section 3 of this report. Unless otherwise stated, references to the Code refer to the ASME Code, Section XI, 1986 Edition. Specific inservice test (IST) programs for pumps and valves are being evaluated in other reports.

2. EVALUATION OF INSERVICE INSPECTION PROGRAM PLAN

This evaluation consists of a review of the applicable program documents to determine whether or not they are in compliance with the Code requirements and any license conditions pertinent to ISI activities. This section describes the submittals reviewed and the results of the review.

2.1 Documents Evaluated

Review has been completed on the following information from the Licensee:

(a) *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection Program Plan* (Revision 0), dated April 1991; and,

(b) Letter, dated December 12, 1991, response to the NRC request for additional information.

2.2 Compliance with Code Requirements

2.2.1 Compliance with Applicable Code Editions

The Inservice Inspection Program Plan shall be based on the Code editions defined in 10 CFR 50.55a(g)(4) and 10 CFR 50.55a(b). The Code applicable to the second 10-year ISI interval, based on the starting date of April 20, 1991, is the 1986 Edition. The Licensee has prepared the second interval 10-year ISI program, Revision 0, to meet the 1986 Edition.

2.2.2 Acceptability of the Examination Sample

Inservice volumetric, surface, and visual examinations shall be performed on ASME Code Class 1, 2, and 3 components and their supports using sampling schedules described in Section XI of the ASME Code and 10 CFR 50.55a(b). Sample size and weld selection have been implemented in accordance with the Code and 10 CFR 50.55a(b) and appear to be correct.

2.2.3 Exemption Criteria

The criteria used to exempt components from examination shall be consistent with Paragraphs IWB-1220, IWC-1220, IWC-1230, IWD-1220, and 10 CFR 50.55a(b). The exemption criteria have been applied by the licensee in accordance with the Code as discussed in the ISI program plan, and appear to be correct.

2.2.4 Augmented Examination Commitments

In addition to the requirements as specified in Section XI of the ASME Code, the Licensee has committed to perform the following augmented examinations:

(a) The reactor pressure vessel examinations will comply with the requirements of Regulatory Guide 1.150, Revision 1 (Reference 7);

(b) Examinations of the reactor coolant pump motor flywheel assembly will be performed in accordance with TMI-1 Technical Specification 4.2.4;

(c) Examinations of certain main steam system welds outside of containment will be performed in accordance with TMI-1 Technical Specification 4.15. This requires examination of welds MS-0001, MS-0002, MS-0003 and MS-0004L at 3-1/2 year intervals or the nearest refueling outage.

(d) All load bearing welds will be examined over the normal inservice inspection interval using standard ISI techniques for the head and internals handling fixture (Tripod) using NUREG 0612, *Control of Heavy Loads at Nuclear Power Plants* (Reference 8); and

(e) Examinations of main feedwater Welds FW-0034 through FW-0039 will be performed every interval because of postulated break analysis to assure compliance with the break exclusion requirements as specified in Paragraph B.1.b (7) of Branch Technical Position MEB 3-1 (Reference 9).

2.3 Conclusions

Based on the review of the documents listed above, it is concluded that the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval*

ISI Program Plan, Revision 0, is acceptable and in compliance with 10 CFR 50.55a(g)(4).

3. EVALUATION OF RELIEF REQUESTS

The requests for relief from the ASME Code requirements that the Licensee has determined to be impractical for the second 10-year inspection interval are evaluated in the following sections.

3.1 Class 1 Components

3.1.1 Reactor Pressure Vessel

3.1.1.1 Request for Relief No. 1, Examination Category B-F, Item B5.130 and Examination Category B-J, Item B9.11, Dissimilar Metal and Terminal End Piping Welds

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-F, Item B5.130, and Examination Category B-J, Item B9.11, requires both surface and volumetric examination of all dissimilar metal piping welds and terminal end piping welds at vessels as defined by Figure IWB-2500-8.

Licensee's Code Relief Request: Relief is requested from performing 100% of the Code-required surface examination for Welds CF-0001, CF-0020, RC-0001, RC-0052, RC-0106, RC-0054, RC-0087, RV-0009BM, and RV-0010BM.

Licensee's Basis for Requesting Relief: Relief is requested from performing the surface examinations because the above listed welds are located inside the reactor vessel primary shield wall and performing these examinations would require removal of sand plugs and insulation to gain access into this high radiation environment. GPUN estimates that a cumulative exposure of 87 Person-Rem would be necessary to complete the Code-required examinations.

Licensee's Proposed Alternative Examination: GPUN will perform ultrasonic examination of the OD surface of these welds from the ID using techniques qualified by Babcock and Wilcox.

Evaluation: The Licensee has stated that the required surface examinations of the subject welds cannot be performed without excessive personnel radiation exposure. The proposed alternative of a volumetric inspection from the ID is acceptable provided the Licensee meets the following conditions:

(1) The remote volumetric examination includes the entire weld volume and heat affected zone instead of only the inner one-third of the weld.

(2) The ultrasonic testing instrumentation and procedures are demonstrated to be capable of detecting OD surface connected defects, in the circumferential orientation, in a laboratory test block. The defects should be cracks and not machined notches.

The proposed alternative examination, with the above supplemental conditions, will provide reasonable assurance that unallowable inservice flaws have not developed in the subject welds or that they will be detected and repaired prior to return of the plant to service.

Conclusions: It is concluded that the Code-required surface examination of the subject welds would result in personnel radiation exposures contrary to ALARA principles. The examination is therefore impractical to perform at TMI-1. In the December 12, 1991 response to the NRC request for additional information, the Licensee committed to meet the above stated conditions. When these conditions are met, the proposed alternative volumetric examination from the ID of the pipe will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.1.1.2 Request for Relief No. 7, Examination Category F-A, Item F1.40, Reactor Vessel Support Skirt

Code Requirement: Section XI, Table IWF-2500-1, Examination Category F-A, Item F1.40 requires a 100% visual examination (VT-3) of plate- and shell-type supports to the extent indicated in paragraphs IWF-1300 and IWF-2510 and as defined by Figure IWF-1300-1.

Licensee's Code Relief Request: Relief is requested from performing 100% of the Code-required VT-3 examination on the outside surface and approximately 50% on the inside of the reactor vessel support skirt.

Licensee's Basis for Requesting Relief: The Licensee states that access to the inside surface is obtained by entering a tunnel leading to the reactor vessel lower head and incore instrument guide tubes. The entire lower head and approximately half of the support shirt are obstructed by mirror insulation when accessed from beneath the reactor vessel. The inside anchor area and a portion of the support skirt are visible using a remote hand held camera for about 50% of the circumference. The remaining circumference, where the incore guide tubes exit the reactor shield area, is inaccessible because of the incore guide tubes.

Access to the outside surface of the skirt could only be obtained from the top of the reactor vessel by lowering remote camera equipment between the reactor vessel and insulation and between the primary shield wall and insulation. This approach requires removal of sand plugs and insulation. It would be necessary to navigate between insulation supports using remote crawlers of some type in order to view the anchor area.

Licensee's Proposed Alternative Examination: Perform a remote visual examination of the accessible areas of the support skirt inside surface.

Evaluation: The Licensee's submittal has been reviewed, including the drawing which shows the examination limitations. Based on the design of the RPV support skirt, it is concluded that visual examination to the extent required by the Code is impractical and would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. A remote visual examination of the accessible portion of the support skirt will give a reasonable assurance of continued inservice structural integrity.

Conclusions: Based on the above evaluation, the impracticality of performing the Code-required examination, and pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.1.2 Pressurizer (No relief requests)

3.1.3 Heat Exchangers and Steam Generators

3.1.3.1 Request for Relief No. 2, Examination Category B-H, Item B8.30, Steam Generator Integrally Welded Attachments

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-H, Item B8.30 requires a 100% surface examination as defined by Figure IWB-2500-13.

Licensee's Code Relief Request: Relief is requested from performing the Code-required surface examination of the area labeled C to D (Figure IWB-2500-13) for Welds SG-0006 and SG-0013 on Steam Generators RC-H-1A and RC-H-1B, respectively.

Licensee's Proposed Alternative Examination: None. The Licensee proposes to perform a Code-required surface examination on area A to B and a visual examination of area C to D.

Licensee's Basis for Requesting Relief: The Licensee states that the steam generator is designed in such a manner that access to this area for a meaningful examination is impractical. Substantial surface preparation would be required to perform a surface examination and the weld face reduces to a 1-3/4 inch radius, restricting access for weld preparation equipment and personnel.

Evaluation: Detail "X" of Drawing 131117E shows the restriction associated with the inside surface of integral attachment Welds SG-0006 and SG-0013 on Steam Generators RC-H-1A and RC-H-1B. The 1-3/4 inch radius at the inside weld face limits access for personnel and surface preparation equipment. The steam generator design makes the Code-required surface examination of the inside weld surface impractical to perform. Imposition of the Code requirement on GPUN would cause a burden that would not be compensated significantly by an increase in safety above that provided by the proposed examination.

Conclusions: It is concluded that the combination of the Code-required surface examination to the outside of these welds and a visual examination of the inside surface will provide reasonable assurance of continued inservice integrity of the subject welds. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.1.3.2 Request for Relief No. 3, Examination Category B-B, Item B2.70, Letdown Cooler (primary side) - Longitudinal Shell Welds

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-B, Item B2.70 requires a 100% volumetric examination of 1 foot of one longitudinal weld at each end of the shell, at the intersection of the circumferential weld, as defined by Figure IWB-2500-2. The examination may be limited to one vessel among a group of vessels performing a similar function.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of one foot at each end of longitudinal Welds MU-1019L, MU-1020L, MU-1021L, MU-1022L, MU-1034L, MU-1035L, MU-1036L and MU-1037L on Letdown Coolers MU-C-1A and MU-C-1B.

Licensee's Basis for Requesting Relief: The Licensee states that the letdown coolers are of a helical coil design using a split manifold to allow for tube expansion and seal welding prior to completing manufacture of the manifold. The tube bundle and all but approximately 1-1/4 inch of the inlet and 2-1/4 inch of the outlet manifolds are then covered by the Class 3 (heat sink) side of the heat exchanger. Access is limited to the short section of manifold outboard of the heat sink side of the vessel.

Licensee's Proposed Alternative Examination: None. GPUN proposes to volumetrically examine the accessible length of all manifold welds on one cooler during the 10-year interval.

Evaluation: The drawings submitted by the Licensee have been reviewed and it has been determined that the volumetric examination of one foot of longitudinal weld at each end of the shell welds is impractical to perform due to inaccessibility. The accessible portions of the subject welds are the most highly stressed areas and will receive the Code-required volumetric examination. In order to complete the volumetric examination to the extent required by the Code, the letdown coolers would require extensive modifications. The inservice structural integrity will be assured by the performance of a volumetric examination to accessible portions of the subject manifolds.

Conclusions: It is concluded that the volumetric examination of one foot of longitudinal weld on each end of the letdown cooler manifolds is impractical to perform at Three Mile Island, Unit 1, to the extent required by the Code. The granting of relief will not endanger life, property, or the common defense and security and is otherwise in the public interest, considering the burden

upon the facility. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.1.4 Piping Pressure Boundary (No relief requests)

3.1.5 Pump Pressure Boundary

3.1.5.1 Request for Relief No. 8, Examination Category B-L-2, Item B12.20, Reactor Coolant Pump Casings

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-L-2, Item B12.20 requires a 100% VT-3 visual examination of the internal surfaces of Class 1 pump casings by the end of the interval. The examination is limited to at least one pump in each group of pumps performing similar functions in the system.

Licensee's Code Relief Request: Relief is requested from performing the Code-required VT-3 visual examination of the reactor coolant pump internal surface.

Licensee's Basis for Requesting Relief: The Licensee believes that the Code requirement to disassemble a reactor coolant pump strictly for the purpose of visual examination does not provide an increase in safety commensurate with the resultant personnel radiation exposure associated with the inspection.

Licensee's Proposed Alternative Examination: Visual examination of the casing interior surface of one reactor coolant pump will be performed only if a pump is disassembled for repair or maintenance.

Evaluation: The visual examination is performed to determine if unanticipated severe degradation of the casing is occurring due to phenomena such as erosion, corrosion, or cracking. However,

experience with similar pumps at other plants has not shown any significant degradation of pump casings. Because of this, later editions and addenda of the ASME Code (1988 Addenda) state that only pumps that are disassembled for reasons such as maintenance, repair, or volumetric examination must have their internal surfaces examined.

The disassembly of the reactor coolant pumps for the sole purpose of visual examination of the casing internal surfaces is a major effort and requires many manhours from skilled maintenance and inspection personnel. The possibility of damage to the pump and the excessive radiation exposure would not have a compensating increase in safety.

Since no major problems have been reported in the industry with regard to pump casings, the Licensee's proposal will provide adequate assurance of the continued inservice structural integrity of the Reactor Coolant Pumps.

Conclusions: The disassembly of a pump for the sole purpose of inspection is impractical to perform at TMI-1. It is concluded that public health and safety will not be endangered by allowing the proposed examination to be performed in lieu of the Code requirement. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted provided that, if a pump has not been disassembled, the Licensee should report this fact in the ISI Summary Report at the end of the interval.

3.1.6 Valve Pressure Boundary

3.1.6.1 Request for Relief No. 11, Examination Category B-M-2, Item B12.50, Valve Body Internal Surfaces

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-M-2, Item B12.50 requires a VT-3 visual examination of the internal surfaces of valve bodies exceeding 4-inch nominal

pipe size. This examination is limited to one valve within each group of valves that are of the same design and manufacturing method and that perform similar functions in the system.

Licensee's Code Relief Request: Relief is requested from performing the required VT-3 visual examination for valves DH-V1, DH-V2, DH-V22A/B, CF-V4A/B, and CF-V5A/B unless they are disassembled for maintenance.

Licensee's Basis for Requesting Relief: The Licensee reports that the design of the valves is such that disassembly is required to perform the examination. Disassembly of valves DH-V1 and DH-V2 would require full core offload. In addition, the refueling canal water would have to be drained or a freeze seal would have to be used in order to disassemble DH-V1. Lowering the refueling canal water level could extend an outage by approximately two days and would add approximately four person-rem to an outage. The Licensee states that use of a freeze seal on such a large pipe so close to the reactor vessel would not be advisable.

The Licensee also states that the CF-V4A/B, CF-V5A/B, and DH-V22A/B inspections could be performed without core offload but there would be an increased potential for a loss of decay heat if performed while the RCS is in a drained condition. If CF-V5A/B were chosen to be disassembled while in a drained condition, a freeze seal would still be required because of their proximity to the RCS.

The Licensee points out that the 1989 Edition of Section XI requires these examinations only if a valve is disassembled for maintenance, repair, or volumetric examination. None of these valve designs utilize a valve body weld.

Licensee's Proposed Alternative Examination: None. The Section XI required visual examinations of Valves DH-V1, DH-V2,

DH-V22A/B, CF-V4A/B, and CF-V5A/B will be performed only if the valve is disassembled for maintenance or repair.

Evaluation: The visual examination is performed to determine if unanticipated degradation of the valve body is occurring due to phenomena such as erosion, corrosion, or cracking. However, previous experience during examination of similar valves at other plants has not shown any significant degradation of valve bodies.

In order to examine the internal surfaces of a valve body in accordance with the requirements, complete disassembly of the valve would be required which, in addition to the possibility of damage to the valve, could result in personnel receiving excessive radiation exposure. Imposition of this requirement on GPUN would cause a burden that would not be compensated significantly by an increase in safety above that provided by the proposed examination.

Later editions and addenda of the ASME Code (1988 Addenda) state that the internal surface visual examination requirement is only applicable to valves that are disassembled for reasons such as maintenance, repair, or volumetric examination.

Conclusions: It is concluded that the disassembly of a valve for the sole purpose of inspection is impractical at TMI-1, and that compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted provided that if a valve has not been disassembled, this fact should be reported by the Licensee in the ISI Summary Report at the end of the interval.

3.1.7 General

3.1.7.1 Request for Relief No. 13 (Part 1 of 3), Paragraph IWB-2430, Additional Examinations

Code Requirement: Section XI, Paragraph IWB-2430 states,
(a) Examinations performed in accordance with Table IWB-2500-1 that reveal indications exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations at this outage. The additional examinations shall include the remaining welds, areas, or parts included in the inspection item listing and scheduled for this and the subsequent period. If the examinations for that inspection item are not scheduled in the subsequent period, the most immediate period containing scheduled examinations shall be taken as the subsequent period.

(b) If the additional examinations required by (a) above reveal indications exceeding the acceptance standards of Table IWB-3410-1, the examinations shall be further extended to include additional examinations at this outage. The additional examinations shall include all the welds, areas, or parts of similar design, size, and function.

(c) For the inspection period following the period in which the examinations of (a) or (b) above were completed, the examinations shall be performed as normally scheduled in accordance with IWB-2400.

Licensee's Code Relief Request: Relief is requested from performing Additional Examinations as required in IWB-2430 of the 1986 Code.

Licensee's Basis for Requesting Relief: The Licensee states that the requirements in the 1986 Code are very prescriptive and could actually not allow credit for examination of components that should be examined as part of an expanded sample. ASME has

recognized that these situations can exist and is in the process of changing the Code additional examination requirements. These changes allow selection of additional examinations based on similar materials and service thus the root cause of the condition requiring additional examinations is considered when expanding examination samples.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform additional examinations based on proposed changes to Paragraph IWB-2430 of Section XI, as follows:

(a) Examinations performed in accordance with Table IWB-2500-1, except for Examination Categories B-E and B-P, that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations at this outage. The additional examinations shall include an additional number of welds, areas, or parts included in the inspection item equal in number to the welds, areas, or parts included in the inspection item that were scheduled to be performed during the present inspection period. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require the inclusion of piping systems other than the one containing the flaws or relevant conditions.

(b) If the additional examinations required by (a) above reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1, the examinations shall be further extended to include additional examinations at this outage. These additional examinations shall include the remaining number of welds, areas, or parts, included in the inspection item of similar material and service subject to the same type of flaws or relevant conditions.

(c) For the inspection period following the period in which the examinations of (a) or (b) above were completed, the examinations

shall be performed as normally scheduled in accordance with IWB-2400.

(d) For steam generator tubing, additional examinations shall be governed by the Plant Technical Specification.

Evaluation: The proposed alternative to paragraph IWB-2430 appears in the 1991 Addenda. Although the proposed alternative may have technical merit, the NRC staff has not yet reviewed and endorsed this change. Approval of this request for relief before NRC staff review would undermine the review process.

Conclusions: Based on the unapproved nature of the 1991 Addenda, it is recommended that this specific request for relief from the additional examination requirements of the ASME Code be denied.

3.2 Class 2 Components

3.2.1 Pressure Vessels

3.2.1.1 Request for Relief No. 5, Examination Category C-B, Item C2.32, Decay Heat Removal (DHR) Coolers Nozzle-to-Vessel Welds

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-B, Item C2.32 requires a volumetric examination of the inner 1/3 wall thickness of nozzle welds and the nozzle inner radii as defined by Figure IWC-2500-4(c) when the inside of the vessel is accessible.

Licensee's Code Relief Request: Relief is requested from performing the Code-required volumetric examination of welds DH-0396B, DH-0397B, DH-0401B, and DH-0403B and the associated inner radii on Decay Heat Removal Coolers DH-C-1A and DH-C-1B.

Licensee's Basis for Requesting Relief: The Licensee states that nozzles of this design are difficult to examine using ultrasonic

testing (UT) due to their inherently complex three dimensional nature and scan surface limitations. In addition to the complex geometry, the Licensee refers to the material of construction, 304 series stainless steel, which causes additional attenuation and beam re-directional problems.

Licensee's Proposed Alternative Examination: A liquid penetrant examination (PT) of these nozzle welds and inner radii will be performed if the coolers are dissembled for maintenance.

Evaluation: The Code requires that the nozzle-to-shell (or head) welds and associated inner radii receive a volumetric examination when the inside of the DHR coolers is accessible. The Licensee proposes to perform a surface examination (PT) of the inside of the nozzles if the coolers are disassembled for maintenance.

In the response to the NRC's request for additional information, dated December 12, 1991, the Licensee explained the impracticality associated with this Code requirement at TMI-1. Although the volumetric examination is possible to perform, the radiation levels inside the DHR Coolers are estimated to be 16 R/hr. The manual ultrasonic examination is expected to require about 2 hours of scanning time inside the cooler. A liquid penetrant examination of the area of interest would require about ten minutes of time in the cooler. Based on the ALARA considerations associated with the examination of the interior of the DHR Coolers, the liquid penetrant examination would minimize personnel exposure. Since the objective of the required examination is to detect service induced flaws initiating at the ID, a PT examination would provide a reasonable assurance of the continued inservice structural integrity.

Conclusions: In order to perform the Code requirement the Licensee would have to develop an automated data acquisition and analysis system with a remote operated manipulator. This technology is not considered to be reasonably available for such a specific nozzle design, therefore the Code requirement is

impractical and imposition would create a burden that would not be compensated by an increase in safety above that provided by the proposed alternative. It is recommended that, pursuant to 10 CFR 50.55a(g)(6)(i), relief be granted as requested.

3.2.1.2 Request for Relief No. 6, Examination Category C-A, Item C1.10, DHR Cooler Shell Welds

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-A, Item C1.10 requires a 100% volumetric examination, as defined by Figure IWC-2500-1, of the heat exchanger shell welds at gross structural discontinuities.

Licensee's Code Relief Request: Relief is requested from performing 100% of the Code-required volumetric examination of welds DH-0399 and DH-0404 on DHR Coolers DH-C-1A and DH-C-1B.

Licensee's Basis for Requesting Relief: The subject retaining ring-to-shell weld is covered by a sliding flange. The Licensee states that this design makes examination of these welds impractical unless the cooler is disassembled. Even if disassembled, a meaningful volumetric examination could only be performed from the inside of the head. Ultrasonic examination from inside of the head would require personnel to remain in this high contamination and high dose rate environment much longer than if a liquid penetrant examination were performed on this weld.

The Licensee reports that disassembly and inspection of this cooler to accommodate required examinations would require approximately four man-weeks of labor and exposure of 4.4 Person-Rem. Disassembly of the cooler would require a decay heat removal-system train to out of service for an extended length of time.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform a liquid penetrant (PT) examination of the ID and OD surface of the weld on one cooler should one or both require disassembly for maintenance or repair during the interval. In addition, a VT-2 examination of the weld area will be performed, once each period, on each cooler while the cooler is in service.

Evaluation: The Code requires that one of the retaining ring to shell welds on the DHR coolers receive a volumetric examination during the 10-year interval. A volumetric examination of this weld is impractical because of the design and the high radiation levels estimated to exist inside the cooler. With the sliding flange design, the weld is inaccessible for ultrasonic examination in the assembled position, and essentially inaccessible when disassembled. A sketch of this area was provided with the Licensee's response to the NRC's request for additional information, dated December 12, 1991.

If disassembled, the only access to this weld for ultrasonic examination would be from the inside surface. The estimated dose rate on the inside of the coolers is 16 R/hr. A volumetric examination of this weld would require approximately 2 hours of personnel time at the weld. The Licensee's proposed alternative is to perform a liquid penetrant (PT) examination of both the ID and OD surfaces of the weld if one of the coolers requires disassembly for maintenance or repair during the interval. Service induced defects would initiate from the surfaces of the weld, therefore the proposed alternative would provide reasonable assurance of the continued inservice structural integrity of the weld.

Conclusions: It is concluded that the Code-required volumetric examination is impractical for TMI-1 and imposition would result in the Licensee having to redesign and/or replace the DHR Coolers, thus creating a burden without a compensating increase in safety above that provided by the proposed alternative.

Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.2.2 Piping

3.2.2.1 Request for Relief No. 4, Examination Category C-F-1, Class 2 Piping Welds

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-F-1, requires that piping welds greater than 4 inches in diameter but less than 0.375 inch wall thickness in non-exempt (IWC-1220) portions of systems be included in the total weld population, but not be examined.

For piping welds greater than 4 inches in diameter and greater than 0.375 inch wall thickness, both surface and volumetric examination is required for those welds requiring examination, as defined by Figure IWC-2500-7.

Licensee's Code Relief Request: Relief is requested to substitute a sampling of seven welds with wall thicknesses less than 0.375 inch for welds 0.375 inch thick and greater in the decay heat removal system.

Licensee's Basis for Requesting Relief: The Licensee states that complete compliance with these Code requirements would leave a large portion of the non-exempt Class 2 DHR System piping from the DHR pumps downstream unexamined. GPUN believes this portion of the system is important enough to plant safety that examination of these welds is warranted.

Licensee's Proposed Alternative Examination: GPUN proposes to categorize and examine non-exempt thin wall piping (greater than 4 inch NPS and less than 0.375 inch wall thickness) from DH-V4A and B to DH-P1A and B as if they were greater than 0.375 inch

wall thickness. These welds will be included in the 7.5% total number of welds to be examined without increasing the sample size for the Decay Heat Removal System.

Evaluation: The Licensee's submittal has been reviewed, including the tables showing the total number of welds, by item number, of the Class 2 systems. The effect of this request for relief can be seen on the distribution of the 7.5% weld sample through the DHR System. Seven welds not required to be examined, based on wall thickness, will be surface and volumetrically examined and subtracted from the required weld sample size. The NRC requires that entire engineered safety systems (i.e., RHR, CHR, ECCS) will not be excluded from volumetric examination based upon wall thickness. When entire systems are excluded, augmented volumetric examinations are required. In the response to the NRC's request for additional information, dated December 12, 1991, the Licensee expanded the potential sample population to include previously excluded sections of piping. Since the DHR System is receiving the required total number of weld examinations, a reasonable assurance of the continued inservice structural integrity of the system will be retained.

Conclusions: Based on the above evaluation, it is concluded that the Licensee's proposed alternative examination provides an equivalent level of quality and safety for the DHR system. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), it is recommended that the proposed alternative examination be authorized.

3.2.2.2 Request for Relief No. 9, Open Ended Class 2 Piping

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11 requires both 100% volumetric and surface examinations of Class 2 circumferential piping welds greater than 4 inch NPS and wall thickness greater than 0.375 inch as defined by IWC-2500-7.

Section XI, Paragraph IWC-1221(f) exempts from examination piping and other components of any size beyond the last shutoff valve in open ended portions of systems that do not contain water during normal plant operating conditions.

Licensee's Code Relief Request: Relief is requested to consider piping and components from the reactor building sump to Valves DH-V6A and DH-V6B as exempt even though the system contains water.

Licensee's Basis for Requesting Relief: The Licensee contends that the piping and components upstream of Valves DH-V6A/B are either buried in concrete or encased in welded steel guards. Plant operating conditions are such that a minimum level of water is maintained in the sump such that this portion of the system will contain some water. GPUN states that this portion of the system is tested each refueling outage under the containment leak rate testing program requirements in accordance with 10 CFR 50, Appendix J.

Licensee's Proposed Alternative Examination: None. The Licensee proposes to treat components upstream of Valves DH-V6A and DH-V6B as exempt components.

Evaluation: The Class 2 piping and components between the reactor building sump and Valves DH-V6A/B are buried in concrete or encased in welded steel guards. IWC-1221(f) exempts piping and components beyond the last shutoff valve in open ended portions of systems if they do not contain water under normal plant operating conditions. The subject piping and components are open ended and only contain the water resulting from the static head pressure of the water level maintained in the sump. Because it is open ended, it is not considered pressure retaining. This portion of the system contains some water but is inaccessible and, therefore, it is impractical to perform Code-required examinations without redesigning the system. The

Appendix J, Containment Leakrate Testing Program will verify the integrity of this portion of the system.

Conclusions: Based on the above evaluation, the burden on the Licensee if the Code requirement were imposed, and pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.2.3 Pumps (No relief requests)

3.2.4 Valves (No relief requests)

3.2.5 General

3.2.5.1 Request for Relief No. 13 (Part 2 of 3), Paragraph IWC-2430, Additional Examinations

Code Requirement: Section XI, Paragraph IWC-2430 states:
(a) Examinations that detect indications exceeding the allowable standards of IWC-3400 shall be extended to include an additional number of components (or areas) within the same examination category, approximately equal to the number of components (or areas) examined initially during the inspection.

(b) If the additional examinations detect further indications exceeding the allowable standards of IWC-3000, the remaining number of similar components (or areas) within the same examination category shall be examined to the extent specified in Table IWC-2500-1, except as modified by (c) and (d) below.

(c) Where the required piping examinations are limited to one loop or branch run of an essentially similar piping configuration, examinations that reveal indications exceeding the allowable standards of IWC-3000 shall require the additional examinations of (a) above and shall be extended to include

examination of a second loop or branch run to the extent specified in Table IWC-2500-1.

(d) If the examination of the second loop or branch run reveals further indications exceeding the allowable standards of IWC-3000, the remaining number of loops or branch runs that perform similar functions shall be examined.

Licensee's Code Relief Request: Relief is requested from using the 1986 Code Additional Examinations requirements.

Licensee's Basis for Requesting Relief: The Licensee states that the requirements in the 1986 Code are very prescriptive and could actually not allow credit for examination of components that should be examined as part of an expanded sample. ASME has recognized that these situations can exist and is in the process of changing the Code additional examination requirements. These changes allow selection of additional examinations based on similar materials and service, thus the root cause of the condition requiring additional examinations is considered when expanding examination samples.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform additional examinations based on proposed changes to Paragraph IWC-2430 of Section XI.

(a) Examinations performed in accordance with Table IWC-2500-1, except for examination category C-H, that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1 shall be extended to include additional examinations at this outage. The additional examinations shall include an additional number of welds, areas, or parts included in the inspection item equal in number to 20% of the welds, areas, or parts included in the inspection item that are scheduled to be performed during the interval. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require the inclusion of

piping systems other than the one containing the flaws or relevant conditions.

(b) If the additional examinations required by (a) above reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1, the examinations shall be further extended to include additional examinations at this outage. These additional examinations shall include the remaining number of welds, areas, or parts included in the inspection item of similar material and service subject to the same type of flaws or relevant conditions.

(c) For the inspection period following the period in which the examinations of (a) or (b) above were completed, the examinations shall be performed as normally scheduled in accordance with IWC-2400.

Evaluation: The proposed alternative to Paragraph IWC-2430 appears in the 1991 Addenda. Although the proposed alternative may have technical merit, the NRC staff has not yet reviewed and endorsed this change. Approval of this request for relief before NRC staff review would undermine the review process.

Conclusions: Based on the unapproved nature of the 1991 Addenda, it is recommended that this specific request for relief from the additional examination requirements of the ASME Code be denied.

3.3 Class 3 Components

3.3.1 Piping (No relief requests)

3.3.2 Pumps (No relief requests)

3.3.3 Valves (No relief requests)

3.3.4 General

3.3.4.1 Request for Relief No. 13 (Part 3 of 3), Additional Examination Requirements for Class 3 Components

Code Requirement: The 1986 Edition of Section XI has no provisions for additional examinations of Class 3 components.

Licensee's Code Relief Request: Relief is requested to use the proposed changes to Section XI, Additional Examinations requirement for Class 3 components.

Licensee's Basis for Requesting Relief: The Licensee states that the requirements in the 1986 Code for Class 1 and Class 2 components are very prescriptive and could actually not allow credit for examination of components that should be examined as part of an expanded sample. ASME has recognized that these situations can exist and is in the process of changing the Code additional examination requirements. These changes allow selection of additional examinations based on similar materials and service, thus the root cause of the condition requiring additional examinations is considered when expanding examination samples. The proposed Code change includes Class 3 components.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform additional examinations based on the proposed addition of Paragraph IWD-2430 to Section XI.

(a) Examinations performed in accordance with Table IWD-2500-1 (except for examination Item Numbers D1.10, D2.10, and D3.10) that reveal flaws or relevant conditions exceeding the acceptance standards of IWD-3000 shall be extended to include additional examinations at this outage. The additional examinations shall include an additional number of welds, areas, or parts included in the inspection item equal in number to 20% of the welds, areas, or parts included in the inspection item that are scheduled to be performed during the interval. The additional

examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require the inclusion of piping systems other than the one containing the flaws or relevant conditions.

(b) If the additional examinations required by (a) above reveal flaws or relevant conditions exceeding the acceptance standards of IWD-3000, the examinations shall be further extended to include additional examinations at this outage. The extent of the additional examinations shall be determined by the Owner based upon an engineering evaluation of the root cause of the flaws or relevant conditions. The Owner's corrective measures shall be documented per IWA-6000.

(c) For the inspection period following the period in which the examinations of (a) or (b) above were completed, the examinations shall be performed as normally scheduled in accordance with IWD-2400.

Evaluation: Additional examinations for Class 3 components are not covered by the 1986 Code. The Licensee's proposal appears in the 1989 Edition, 1991 Addenda. The inclusion of these requirements into the TMI-1 Program Plan provides a level of quality and safety above that provided by the Code ecord for the second ISI interval.

Conclusions: Performing Class 3 additional examinations to the 1991 Addenda's basic requirements, when no requirements exist in the 1986 Code, is an acceptable option for the Licensee. It is determined that because there is no existing 1986 Code requirement, relief is not required.

3.4 Pressure Tests

3.4.1 Class 1 System Pressure Tests

3.4.1.1 Request for Relief No. 16.4, Examination Category B-P, Item B15.51, Hydrostatic Test of the Class 1 Reactor Coolant System (Auxiliary Pressurizer Spray)

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-P, Item B15.51 requires that Class 1 systems be subjected to a system hydrostatic pressure test, per Paragraph IWB-5222, at or near the end of each inspection interval.

Licensee's Code Relief Request: Relief is requested from performing the Code required hydrostatic pressure test on approximately 4 feet of 1-1/2 inch diameter piping between Valves RC-V23 and RC-V4.

Licensee's Basis for Requesting Relief: The Licensee states that there is no pressure tap and, therefore, no way to connect a hydrostatic test pump to this short section of pipe.

Licensee's Proposed Alternative Examination: None. A VT-2 examination will be performed during the system inservice leak test.

Evaluation: Valve RC-V4 is the Class 1/Class 2 system boundary. RC-V23 is a check valve that allows flow from the Class 2 Decay Heat Spray Line to the Pressurizer. The subject section of pipe cannot be pressurized from the Class 1 side because the check valve prevents flow. It is not desirable to pressurize from the Class 2 side because of the possibility of pressurized thermal shock on the Class 1 pressurizer system. The system design, therefore, makes the Code required hydrostatic test impractical to perform. In order to perform the hydrostatic test in accordance with the requirements, the subject 4 foot line would require design modifications or installation of a pressure tap.

Conclusion: It is concluded that the Code-required hydrostatic pressure test of the subject section of Class 1 piping is impractical to perform at TMI-1. The increase in plant safety would not compensate for the burden placed on the Licensee that would result from imposition of the requirement. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.4.2 Class 2 System Pressure Tests

3.4.2.1 Request for Relief No. 16.1, Examination Category C-H, Item C7.40, Hydrostatic Test of Class 2 Makeup and Purification System Piping

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-H requires that the system hydrostatic test pressure be at least 1.10 times the system pressure for systems with design temperature of 200°F or less, and at least 1.25 times the system pressure for systems with design temperature above 200°F.

Licensee's Code Relief Request: Relief is requested from performing the Code-required hydrostatic test of the makeup and purification piping section from MU-V64C to MU-V193C.

Licensee's Basis for Requesting Relief: The Licensee states that between Valves MU-V64C and MU-V193C, there is no vent or instrument tap that will allow connection of the hydrostatic test pump. Hydrostatic testing of this particular section of piping, approximately 8 feet of 1-1/2 inch and 2 inch diameter pipe, is therefore not considered practical. This piping experiences nominal operating pressure (approximately 3000 psig) during the performance of the quarterly inservice test.

Licensee's Proposed Alternative Examination: None. The Licensee states that a system leakage test with makeup and purification Pump MU-P1C operating (approximately 3000 psig) has assured that

the pressure retaining capability, structural integrity, and leaktightness of this piping is maintained.

Evaluation: As shown in ISI Drawing No. 1D-ISI-FD-017, there are three streams associated with this portion of the Makeup and Purification System. Systems "A" and "B" receive the Code-required examination because the piping between MU-V64A/B and MU-V193A/B contains a vent that allows connection of the hydrostatic test pump. System "C" does not have a vent or instrument tap. The system design, therefore, makes the Code-required hydrostatic test impractical to perform. In order to perform the hydrostatic test in accordance with the requirements, the subject line would require design modifications and installation of a connection for the hydrostatic test pump. The increase in plant safety would not compensate for the burden placed on the Licensee that would result from imposition of the requirement.

Because the "C" system sees the same operating and environmental conditions as the "A" and "B" systems, which receive the Code-required hydrostatic test, a reasonable assurance of the continued structural integrity is attained.

Code Case N-498, "Alternative Rules for 10-Year Hydrostatic Pressure Testing for Class 1 and 2 Systems," is included in Revision 9 of Regulatory Guide 1.147 (Reference 10). This Code Case essentially eliminates the hydrostatic test for Class 1 and 2 systems. As an alternative, it allows other system pressure tests to be performed provided the systems are held at nominal operating pressure (NOP) for at least 4 hours for insulated systems and 10 minutes for noninsulated systems prior to performing the VT-2 visual examination. The system is held at NOP during the performance of the VT-2 visual examination.

Conclusions: The concept of performing pressure tests at system operating pressure has been accepted by the NRC. The above evaluation describes the impracticality of performing the Code-

required examination. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested provided the system is pressurized to nominal operating pressure for at least 4 hours for insulated systems and 10 minutes for noninsulated systems prior to the VT-2 visual examination. The system should be held at NOP during the performance of the VT-2 visual examination.

3.4.2.2 Request for Relief No. 16.2, Examination Category C-H, Item C7.40, Hydrostatic Test of Class 2 Core Flooding System Piping

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-H requires that the system hydrostatic test pressure be at least 1.10 times the system pressure for systems with design temperature of 200°F or less, and at least 1.25 times the system pressure for systems with design temperature above 200°F.

Licensee's Code Relief Request: Relief is requested from performing the Code-required hydrostatic pressure test of the Class 2 piping between Valves CF-V1A/B and CF-V4A/B.

Licensee's Basis for Requesting Relief: The Licensee states that the TMI-1 FSAR Section 6.1.2.1.c and Plant Operating Procedure (OP) 1102-11, "Plant Cooldown" and OP 1102-1, "Plant Heatup to 525°F" require that CF-V1A/B be open when the RCS is >650 to 700 psig. There is no isolation valve between CF-V1A/B and CF-V4A/B. In addition, the Licensee reports that TMI-1 Technical Specification Section 3.1.2.1 does not allow pressurization of the RCS to nominal operating pressure (2155 psig) without heatup which requires CF-V1A/B open. The core flood tanks are designed for 700 psig and there is no way to achieve a hydrostatic test pressure of 3125 psig between CF-V1A/B and CF-V4A/B.

Licensee's Proposed Alternative Examination: None. A system inservice leak test and VT-2 visual examination from CF-V1A/B to CF-V4A/B will be performed in accordance with IWA-5211(a) at

600±25 psig. This pressure range is the same as the range of core flood tank operating pressure permitted by Technical Specification Section 3.3.1.2.a. This pressure range represents the maximum range of pressure to which this section of piping would be exposed during operation. The Licensee contends that leakage from this portion of the system would be quickly evident by a drop in core flood tank pressure and level.

Evaluation: CF-V1A/B are motor operated valves that must remain open when the RCS is >650 to 700 psig; CF-V4A/B are check valves that will not allow RCS pressure into the core flood system piping. The core flood tanks are designed for 700 psig and there is no way to achieve a hydrostatic test pressure of 3125 psig between the subject valves. The system design, therefore, makes the Code-required hydrostatic test impractical to perform. In order to perform the hydrostatic test in accordance with the requirements, the subject system would require design modifications. Imposition of this Code requirement on GPUN would result in a burden without a compensating increase in safety.

Code Case N-498, "Alternative Rules for 10-Year Hydrostatic Pressure Testing for Class 1 and 2 Systems," is included in Revision 9 of Regulatory Guide 1.147. This Code Case essentially eliminates the hydrostatic test for Class 1 and 2 systems. As an alternative, it allows other system pressure tests to be performed provided the systems are held at nominal operating pressure (NOP) for at least 4 hours for insulated systems and 10 minutes for noninsulated systems prior to performing the VT-2 visual examination. The system is held at NOP during the performance of the VT-2 visual examination.

Conclusions: The concept of performing pressure tests at system operating pressure has been accepted by the NRC. The above evaluation describes the impracticality of performing the Code-required examination. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested provided the system is pressurized to nominal

operating pressure for at least 4 hours for insulated systems and 10 minutes for noninsulated systems prior to the VT-2 visual examination. The system should be held at NOP during the performance of the VT-2 visual examination.

3.4.2.3 Request for Relief No. 16.3, Examination Category C-H, Item C7.40, Hydrostatic Test of Class 2 DHR System Piping

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-H requires that the system hydrostatic test pressure be at least 1.10 times the system pressure for systems with design temperature of 200°F or less, and at least 1.25 times the system pressure for systems with design temperature above 200°F.

Licensee's Code Relief Request: Relief is requested from performing the Code-required hydrostatic pressure test at the Class 2 test pressure of 3125 psig for the DHR piping between Valves DH-V22A/B and DH-V4A/B.

Licensee's Basis for Requesting Relief: The Code-required hydrostatic test pressure is 3125 psig. The Licensee reports that there is no isolation valve downstream of DH-V22A/B in the reactor coolant system (RCS) and, therefore, no way to hydrostatically test the pipe between DH-V22A/B and DH-V4A/B.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform a hydrostatic pressure test of the subject piping to the Class 1 test pressure of 1.02 times the nominal operating pressure of 2155 psig, or 2200 psig.

Evaluation: As shown in Drawings ID-ISI-FD-005 and ID-ISI-FD-019 for TMI-1, the system design does not permit pressurizing the subject portions of Class 2 piping to the Code-required test pressure without overpressurizing the adjacent Class 1 piping. Therefore, the Code-required hydrostatic test pressure for the Class 2 portion is impractical to attain. The system would

require design modifications in order to perform the Code-required hydrostatic test. Imposition of the requirement on GPUN would cause a burden that would not be compensated significantly by an increase in safety above that provided by the proposed alternative. The Licensee's alternative test, performed at the Class 1 test pressure, will provide reasonable assurance of the continued inservice structural integrity.

Conclusions: It is concluded that the Code-required hydrostatic test of the subject portions of Class 2 piping in the DHR system is impractical to perform at TMI-1, and that the public health and safety will not be endangered by allowing the alternative test to be performed in lieu of the Code requirement. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.4.2.4 Request for Relief No. 16.5, Examination Category C-H, Item C7.40, Hydrostatic Test of Class 2 Makeup and Purification System Piping

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-H requires that the system hydrostatic test pressure be at least 1.10 times the system pressure for systems with design temperature of 200°F or less, and at least 1.25 times the system pressure for systems with design temperature above 200°F.

Licensee's Code Relief Request: Relief is requested from performing the Code-required hydrostatic pressure test at the Class 2 test pressure of 3125 psig for piping between Valves MU-V16A/B/C/D and MU-V107A/B/C/D.

Licensee's Basis for Requesting Relief: The Code-required hydrostatic test pressure is 3125 psig. The Licensee reports that there is no isolation valve downstream of MU-V107A/B/C/D and, therefore, no way to attain the hydrostatic test pressure of

3125 psig for the piping between Valves MU-V16A/B/C/D and MU-V107A/B/C/D.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform a hydrostatic pressure test of the subject piping to the Class 1 test pressure of 1.02 times the nominal operating pressure of 2155 psig, or 2200 psig.

Evaluation: As shown in Drawing ID-ISI-FD-017 for TMI-1, the system design does not permit pressurizing the subject portions of Class 2 piping to the Code-required test pressure without overpressurizing the adjacent Class 1 RCS piping. Therefore, the Code-required hydrostatic test pressure for the Class 2 portion is impractical to attain. The system would require design modifications in order to perform the Code-required hydrostatic test. Imposition of the requirement on GPUN would cause a burden that would not be compensated significantly by an increase in safety above that provided by the proposed alternative. The Licensee's alternative test, performed at the Class 1 test pressure, will provide reasonable assurance of the continued inservice structural integrity.

Conclusions: It is concluded that the Code-required hydrostatic test of the subject portions of Class 2 piping in the makeup and purification system is impractical to perform at TMI-1, and that the public health and safety will not be endangered by allowing the alternative test to be performed in lieu of the Code requirement. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted as requested.

3.4.3 Class 3 System Pressure Tests (No relief requests)

3.4.4 General

3.4.4.1 Request for Relief No. 15, Paragraph IWA-5242(a), VT-2 Examination of Bolted Connections

Code Requirement: Section XI, Paragraph IWA-5242(a) states that for systems borated for the purpose of controlling reactivity, insulation shall be removed from the pressure retaining bolted connections for VT-2 visual examination.

Table IWA-5210-1 requires a VT-2 visual examination at nominal operating pressure after opening and reclosing of a component in a Class 1 system.

Licensee's Code Relief Request: Relief is requested from performing the Code-required VT-2 visual examination at operating pressure with insulation removed from any closure where a personnel hazard exists due to elevated temperature.

Licensee's Basis for Requesting Relief: The Licensee states that TMI-1 Technical Specification 3.1.2.1 does not allow pressurization of the Reactor Coolant System (RCS) to nominal operating pressure without heatup. The Licensee believes that it is impractical to remove and re-install the insulation on components where a personnel hazard exists due to elevated temperature.

Licensee's Proposed Alternative Examination: The Licensee proposes to perform a VT-2 visual examination, per IWA-5241(b), "Noninsulated Components," during system pressure tests, with the insulation installed. IWA-5241(b) states that for components whose external surfaces are inaccessible for direct visual examination (VT-2), only the examination of the surrounding area (including floor areas or equipment surfaces located underneath the components) for evidence of leakage shall be required. The affected closures will also be examined for evidence of leakage

during cold shutdown for refueling when personnel safety is not a concern.

Evaluation: Table IWB-2500-1, Examination Category B-P, requires that a VT-2 visual examination be performed during the Class 1 system leakage test each refueling outage. Table IWC-2500-1, Examination Category C-H, requires a VT-2 during the Class 2 system pressure test each period. Each of these system pressure tests shall be conducted at the test conditions (pressure and temperature) designated for that system. For systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure retaining bolted connections. The Licensee is attempting to blanket Class 1 and 2 bolted connections under one request for relief with justification only for Class 1. TMI-1 Technical Specification 3.1.2.1 does not allow pressurization of the RCS to nominal operating pressure without heatup. Consequently, a personnel hazard exists when insulation is removed for VT-2 examination. There is no temperature restriction identified for pressurization of the Class 2 systems.

The Licensee proposes to perform a VT-2 visual examination, per IWA-5241(b), "Noninsulated Components" of the bolted connections, with the insulation installed. Based on the safety implications of reinstalling the insulation at elevated temperature, the Code-required examination is impractical to perform for the Class 1 systems. The Licensee's proposed alternative does not allow sufficient time, prior to VT-2 visual examination, for saturation of the insulation at a leaking bolted connection and detection before reactor startup. For this reason, the system should be pressurized to NOP for at least 4 hours before performing the VT-2 visual examination of the insulated components.

GPUN's proposed alternative implies that during each refueling outage the affected closures will have the insulation removed for VT-2 visual examination at zero or static pressure. Because borated water leaves a crystalline residue, this proposed

alternative examination provides a reasonable assurance that any previous leakage at bolted connections would be detected.

Conclusions: It is concluded that installing insulation at bolted connections during reactor operating conditions creates a personnel hazard due to the elevated temperature and pressure. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted from the VT-2 visual examination for the Class 1 bolted connections provided the Licensee's alternative examinations require: (1) a minimum of 4 hours at nominal operating pressure before the VT-2 visual examination of the insulated connections, and (2) that the insulation be removed from the affected Class 1 bolted connections during each refueling outage for a VT-3 visual examination.

Because the justification for determining impracticality was insufficient for Class 2 components, it is recommended that relief from the Code-required VT-2 visual examinations for Class 2 components be denied.

3.4.4.2 Request for Relief No. 14, Paragraph IWA-5250(a)(2), Corrective Measures for Bolted Connections

Code Requirement: Section XI, Paragraph IWA-5250(a)(2) requires removal and VT-3 visual examination of all the bolting at bolted connections identified as leaking during a system pressure test.

Licensee's Code Relief Request: Relief is requested from performing the Code-required VT-3 visual examination of bolting at bolted connections identified as leaking based on an engineering evaluation.

Licensee's Basis for Requesting Relief: The Licensee states that removal of all bolting at a bolted connection is not always required to assure the connection has not degraded. Some connections are more difficult to seal after disassembly when

compared to retorquing an already assembled connection. In addition, complete disassembly of a connection in a radiation area would increase personnel exposure. GPUN notes that the ASME has recognized such situations and changed this requirement to allow removal and evaluation of one bolt in a bolted connection identified as leaking.

If leakage is minor and can be corrected by retorquing, removal of the bolt or stud for VT-3 is not appropriate for low pressure and low temperature systems (≤200 psig and ≤200°F). The river water system and the closed cooling water systems are typical low temperature, low pressure systems.

The Licensee states that bolting removed from a connection is visually examined by maintenance or quality assurance personnel. These personnel are not VT-3 certified but are qualified to perform a first line visual examination due to their experience and training. This first line examination will determine that no corrosion or corrosion degradation exists after cleanup prior to reinstalling the connection. Should corrosion or corrosion degradation be identified, the bolting will be replaced or be VT-3 examined and evaluated in accordance with IWA-3100.

Licensee's Proposed Alternative Examination: If leakage is found in any Class 1, 2, and 3 system components and plant availability would be affected by removal of the bolting to perform a VT-3 examination, as an alternative an evaluation of the failure potential for the bolting will be performed. GPUN believes that it is impractical to shutdown the plant if an evaluation shows: 1) that the leakage is acceptable, 2) that the bolting and the closure will not fail before the next scheduled system outage, and 3) the leakage will not cause unacceptable degradation to adjacent components.

The Licensee's proposed alternative is to replace the requirements of the 1986 Edition with the requirements of the 1989 Edition, 1990 Addenda for Paragraph IWA-5250(a)(2). In

addition, for low temperature and low pressure systems, no bolting will be removed for VT-3 examination if retorquing corrects the leakage. Also, in some cases a VT-3 visual examination will not be performed until the next system outage if evaluation shows that the leakage is acceptable, the bolting and closure will not fail and adjacent components will not be degraded. GPUN will only perform VT-3 examinations of bolting removed from connections found to be leaking during a system pressure test if degradation has been identified as discussed above and the bolting is to be reused.

Evaluation: There are four separate parts to be considered in this request for relief. (1) The use of 1989 Edition 1990 Addenda in lieu of the 1986 Edition for Paragraph IWA-5250(a)(2). (2) The performance of an evaluation of the failure potential for leaking bolted connections that could postpone the VT-3 examination until the next system outage. (3) Visual examinations of removed bolting performed by non-certified VT-3 personnel. (4) For low pressure and low temperature systems (≤200 psig ≤200°F), no bolting will be removed for VT-3 examination if retorquing corrects the leakage.

(1) The 1986 Edition requires that all bolting be removed and VT-3 examined at all leaking bolted connections. The 1990 Addenda was revised to require removal of one of the bolts closest to the leakage. When the removed bolt has evidence of degradation, all remaining bolting in the connection shall be removed, VT-3 examined, and evaluated. The 1990 Addenda relies on the training and skill of the certified VT-3 inspector to detect degradation. This concept provides an acceptable level of quality and safety in that the area exposed to leakage is evaluated.

(2) GPUN is requesting to use an engineering evaluation of the failure potential for a leaking bolted connection as an alternative to a VT-3 visual examination. A VT-3 of the bolting is required if the VT-2 visual examination reveals

leakage during a system pressure test. These system pressure tests are usually performed during the mode changes associated with reactor startup. Any leakage detected during this Section XI VT-2 examination is subject to the Corrective Measures described in IWA-5250 . . would not be considered prudent to continue in the st[illegible] ode with a leaking bolted connection in a borated sy[illegible].

Detecting leakage during the routine surveillance activities that occur during normal plant operation is not considered inservice inspection. In this case, an engineering evaluation is warranted if leakage is detected. The Licensee indicates that when plant availability would be affected by removal of the bolting, the engineering evaluation would be performed in lieu of the VT-3 examination at that time. During reactor startup, the plant should be considered unavailable until the requirements of ASME Section XI are completed.

Request for Relief No. 15, evaluated previously in this Technical Evaluation Report, describes the impracticality of removing the insulation from bolted connections for VT-2 visual examination. This could mean that the proposed engineering evaluation would be conducted without removing the insulation.

(3) As required by IWA-5250(a)(2) of 1990 Addenda, the Licensee proposes to have the single bolt removed from a leaking bolted connection, examined by non-certified VT-3 personnel to determine if a VT-3 examination is necessary on the remainder of the bolted connection. Certified VT-3 visual examinations will be performed as the result of a system pressure test if degradation has been identified by non-certified personnel. As stated earlier, the concept of removing and examining only one bolt in a leaking connection is considered acceptable when relying on the training and skill of the VT-3 inspector. Since TMI-1 is proposing to do

the examination without certified VT-3 personnel, the proposal is unacceptable.

(4) The Licensee proposes attempting to correct minor leakage in low temperature and low pressure systems (≤200 psig and ≤200°F) by retorquing. The Code does not differentiate between system pressures and temperatures for appropriate corrective measures. The Licensee has not demonstrated the impracticality of this requirement.

Conclusions: Based upon the above evaluation, it is concluded that adequate technical justification has not been presented to demonstrate the impracticality of complying with the Code requirement for items (2), (3), and (4) above. Therefore, it is recommended that relief for these items be denied. However, pursuant to 10 CFR 50.55a(a)(3)(i), it is recommended that the proposed alternative described in (1) above be authorized.

3.5 General

3.5.1 Ultrasonic Examination Techniques (No relief requests)

3.5.2 Exempted Components (No relief requests)

3.5.3 Other

3.5.3.1 Request for Relief No. 10, Use of Form NIS-2

Code Requirement: Section XI, IWA-4000, IWA-5000, IWA-6000, and IWA-7000 require specific examinations, notifications, and records for repairs and replacements to Class 1, 2, and 3 components and their supports. The Code requires the use of Form NIS-2 for each.

Licensee's Code Relief Request: Relief is requested from completing the Code-required Form NIS-2 for: testing, repairs,

and preventive maintenance work on snubbers; "Replacement in Kind" activities; and repairs of components 1 inch NPS or less. GPUN is also requesting relief from the Code-required notification of the Authorized Inspection Agency prior to the above mentioned NIS-2 actions.

Licensee's Basis for Requesting Relief: The Licensee contends that snubber testing, repairs, and preventive maintenance work is performed under a work authorizing document. This document identifies, in detail, what work was done and why it was done. Should snubber failures be identified, TMI-1 Technical Specification Section 4.17 requires an engineering evaluation of the condition that has been identified. The Licensee states that the documentation resulting from the Snubber Test Program can be reviewed for determination of snubber replacements and history and that the Authorized Nuclear Inservice Inspector (ANII) will be notified of the snubber test schedule and can verify replacements as deemed necessary.

The Licensee states that their "Replacements in Kind" activities should not be included in Section XI requirements. GPUN has established a practice that allows the maintenance department to replace components with similar components. Normal examples of such activities would be 1) replacement of valve disks or bonnets with spares, 2) replacement of bolting with new parts or spares that have been cleaned and examined, and 3) replacement of relief valves with spares that have been tested and refurbished. "Replacements in Kind" activities are considered routine maintenance similar to disassembly of components for adjustment or cleaning. The Licensee's position is that the ANII may verify replacement activities by reviewing the VT-2 visual examination documentation if desired.

The Licensee states that completion of the Form NIS-2 for routine maintenance practices would result in a paperwork system that would not enhance their ability to trend replacement activities. The Licensee's opinion is that it may, in fact, detract from

their ability to identify any significant replacement activities by producing a redundant paperwork system.

Section XI, IWA-4700 requires completion of Form NIS-2 for all repairs regardless of component nominal pipe size. The Licensee states that the Code has exempted components 1 inch NPS or less from hydrostatic tests following repairs, from examinations of Class 1, 2, or 3 components, and from the replacement requirements of IWA-7000. Completion of Form NIS-2 for these components is not in line with the importance the Code has placed on these components for other requirements.

Licensee's Proposed Alternative Examination: GPUN will notify the ANII prior to each refueling outage that snubber testing will be performed during the refueling outage. All records required by the surveillance procedure will be completed and available for review as an alternative to inclusion on Form NIS-2.

GPUN will notify the NRC of non-exempt "Replacements in Kind," of components not exempt from Section XI, via the Form NIS-1 submittal following each refueling outage.

GPUN will not complete a Form NIS-2 Owners Report for Repairs or Replacements for repairs on components 1 inch NPS or less.

Evaluation: Uniformity and consistency are paramount for the effective regulation of the nuclear industry. The Code-required Form NIS-2 is a mechanism for maintaining and evaluating the extent of repairs and replacements industry wide. Eliminating the Form NIS-2 essentially eliminates the ANII. Elimination of the ANII from certain repair or replacement activities effectively isolates the utility from a third party review by the Authorized Inspection Agency.

Conclusions: Disagreement with a Code requirement is not a basis for granting relief. Imposition of this Code requirement on GPUN

does not result in unusual hardship, burden or impracticality. Therefore, it is recommended that relief be denied.

3.5.3.2 Request for Relief No. 12, Categorization and Selection of Component Supports

Code Requirement: Section XI, Paragraph IWF-2510(a) requires that the component supports selected for examination be the supports of those components that are required to be examined under IWB, IWC, and IWD during the first inspection interval.

Licensee's Code Relief Request: Relief is requested from using the categorization and selection requirements for component supports in the 1986 Edition of the ASME Code.

Licensee's Basis for Requesting Relief: The Licensee reports that Table IWF-2500-1 of Section XI requires examination of 100% of the non-exempt piping supports and at least one component support, where similar components exist, during each inservice inspection interval. In the 1990 Addenda to Section XI, the ASME recognized that component support integrity could be verified adequately by examining a percentage of the support population. Significant manpower would be necessary to support scaffold erection, insulation removal, and the actual performance of the examinations. The sampling of supports in accordance with the 1990 Addenda would greatly reduce the manpower required to perform these examinations.

Licensee's Proposed Alternative Examination: GPUN proposes to use IWF-2000 of the 1990 Addenda in lieu of IWF-2000 of the 1986 Edition of Section XI.

Evaluation: Portions of Subsection IWF in ASME Code Editions prior to the 1990 Addenda are unclear with regard to rules for the inservice inspection of component supports; the 1990 Addenda clarified these rules and added others. The Licensee's proposal

is to use Subsection IWF-2000 of the 1989 Edition, 1990 Addenda of Section XI. We have reviewed the Licensee's proposed alternative and found it to be an acceptable approach for selection and categorization of component supports for examination.

Conclusions: It is concluded that the Licensee's proposed alternative provides an equivalent level of quality and safety with adequate assurance of the continued inservice structural integrity of the component supports. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), it is recommended that the proposed alternative examination be authorized.

4. CONCLUSION

Pursuant to 10 CFR 50.55a(g)(6) or, alternatively, 10 CFR 50.55a(a)(3), it has been determined that certain inservice examinations cannot be performed to the extent required by Section XI of the ASME Code. In these cases for which relief is requested, except Requests for Relief Nos. 10, 13, 14 (in part), and 15 (in part), the Licensee has demonstrated that specific Section XI requirements are impractical or that alternative examinations should be authorized. For the exceptions cited above, it is concluded that the Licensee has not provided technical justification to support the determination that the Code requirement is impractical and that requiring the Licensee to comply with the Code requirement would result in hardship.

This technical evaluation has not identified any practical method by which the Licensee can meet all the specific inservice inspection requirements of Section XI of the ASME Code for the existing Three Mile Island Nuclear Station, Unit 1, facility. Compliance with all the exact Section XI required inspections would necessitate redesign of a significant number of plant systems, sufficient replacement components to be obtained, installation of the new components, and a baseline examination of these components. Even after the redesign efforts, complete compliance with the Section XI examination requirements probably could not be achieved. Therefore, it is concluded that the public interest is not served by imposing certain provisions of Section XI of the ASME Code that have been determined to be impractical. Pursuant to 10 CFR 50.55a(g)(6), relief is granted from the requirements which are impractical to implement, or alternatively, pursuant to 10 CFR 50.55a(a)(3), alternatives to the Code-required examinations are authorized provided that either (i) the proposed alternatives provide an acceptable level of quality and safety or (ii) Code compliance would result in hardship or unusual difficulty without a compensating increase in safety. Relief may be granted only if granting the relief will not endanger life, property, or the common defense and security and is otherwise in the public interest, giving due consideration to the burden upon the licensee, that could result if the requirements were imposed on the facility.

The Licensee should continue to monitor the development of new or improved examination techniques. As improvements in these areas are achieved, the

Licensee should incorporate these techniques in the ISI program plan examination requirements.

Based on the review of the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection Program Plan*, Revision 0, the Licensee's Response to the NRC's Request for Additional Information, and the recommendations for granting relief from the ISI examination requirements that have been determined to be impractical, it is concluded that the *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection Program Plan*, Revision 0, with the exception of Requests for Relief Nos. 10, 13, 14 (in part), and 15 (in part), is acceptable and in compliance with 10 CFR 50.55a(g)(4).

5. REFERENCES

1. Code of Federal Regulations, Title 10, Part 50.

2. American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Division 1:

   1986 Edition
   1989 Edition through 1991 Addenda

3. *Three Mile Island Nuclear Station, Unit 1, Second 10-Year Interval Inservice Inspection Program Plan*, Revision 0, dated April 17, 1991.

4. NUREG-0800, *Standard Review Plan*, Section 5.2.4, "Reactor Coolant Boundary Inservice Inspection and Testing," and Section 6.6, "Inservice Inspection of Class 2 and 3 Components," July 1981.

5. Letter, dated September 19, 1991, R. W. Hernon (NRC) to T. G. Broughton (GPU Nuclear), request for additional information on the Second 10-Year Interval ISI Program Plan.

6. Letter, dated December 12, 1991, T. G. Broughton (GPU Nuclear) to NRC, response to the NRC request for additional information.

7. Regulatory Guide 1.150, *Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations*, Revision 1, dated February 1983.

8. NUREG-0612, *Control of Heavy Loads at Nuclear Power Plants*, July 1980.

9. NRC Mechanical Engineering Branch Technical MEB 3-1, *Postulated Rupture Locations in Fluid System Piping Inside and Outside Containment*, Revision 2, dated June 1987.

10. Regulatory Guide 1.147, Revision 9, *Inservice Inspection Code Case Acceptability, ASME Section XI Division 1*, April 1992.

NRC FORM 335 (2-89) NRCM 1102, 3201, 3202

U.S. NUCLEAR REGULATORY COMMISSION

BIBLIOGRAPHIC DATA SHEET

(See instructions on the reverse)

1. REPORT NUMBER (Assigned by NRC, Add Vol., Supp., Rev., and Addendum Numbers, if any.)

EGG-MS-10169

2. TITLE AND SUBTITLE

Technical Evaluation Report on the Second 10-Year Interval Inservice Inspection Program Plan: GPU Nuclear Corporation, Three Mile Island Nuclear Station, Unit 1 Docket Number 50-289

3. DATE REPORT PUBLISHED

MONTH	YEAR
May	1992

4. FIN OR GRANT NUMBER

FIN-D6022 (Proj. 5)

5. AUTHOR(S)

B.W. Brown, S.G. Galbraith, A.M. Porter

6. TYPE OF REPORT

Technical

7. PERIOD COVERED (Inclusive Dates)

8. PERFORMING ORGANIZATION – NAME AND ADDRESS (If NRC, provide Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address; if contractor, provide name and mailing address.)

EG&G Idaho, Inc.
P.O. Box 1625
Idaho Falls, ID 83415-2209

9. SPONSORING ORGANIZATION – NAME AND ADDRESS (If NRC, type "Same as above"; if contractor, provide NRC Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address.)

Materials and Chemical Engineering Branch
Office of Nuclear Regulatory Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

This report presents the results of the evaluation of the Three Mile Island Nuclear Station, Unit 1 (TMI-1), Second 10-Year Interval Inservice Inspection (ISI) Program Plan, Revision 0, submitted April 19, 1991, including the requests for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI requirements that the Licensee has determined to be impractical. The Inservice Inspection Program Plan is evaluated in Section 2 of this report for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during the Nuclear Regulatory Commission's (NRC) previous reviews. The requests for relief are evaluated in Section 3 of this report.

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

13. AVAILABILITY STATEMENT

Unlimited

14. SECURITY CLASSIFICATION

(This Page)
Unclassified

(This Report)
Unclassified

15. NUMBER OF PAGES

16. PRICE