UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PLAN ALTERNATIVE

INDIANA MICHIGAN POWER COMPANY

D.C. COOK NUCLEAR POWER PLANT, UNIT 2

DOCKET NUMBER: 50-316

1.0 INTRODUCTION

The Technical Specifications (TS) for D.C. Cook Nuclear Power Plant, Unit 2, state that the inservice inspection of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(6)(g)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the D.C. Cook Nuclear Plant, Unit 2, second 10-year inservice inspection (ISI) interval is the 1983 Edition through Summer 1983 Addenda.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief.

2.0 EVALUATION

By letter dated June 28, 1996, Indiana Michigan Power Company (licensee) submitted the second 10-year interval inservice inspection program plan reactor pressure vessel (RPV) nozzle-to-shell weld examinations alternative for D.C. Cook Nuclear Plant, Unit 2. In addition,

the licensee provided additional information in its letters dated September 10, 1996, July 8, 1997, and November 21, 1997.

The staff, with technical assistance from its contractor, the Idaho National Engineering and Environmental Laboratory (INEEL), has evaluated the information provided by the licensee in support of its second 10-year interval reactor pressure vessel (RPV) nozzle-to-shell weld examinations alternative for D.C. Cook Nuclear Plan, Unit 2. Based on the results of the review, the staff adopts the contractor's conclusions and recommendations presented in the Technical Letter Report (TLR) attached.

ASME Section XI, 1983 Edition, Summer 1983 Addenda, Table IWB-2500-1, Category B-D, Item B3.90, requires volumetric examination of all RPV nozzle-to-shell welds in each 10-year interval. Ultrasonic (UT) examinations of these welds must be performed in accordance with ASME Section V, Article 4, for reflectors oriented parallel and transverse to the weld. Paragraph T-425.3 of Article 4 states that scanning shall be performed at a gain setting at least two times the reference level, except that the reference level shall be used when electronic distance amplitude correction (DAC) is used with automated scanning. Paragraphs T-441.8.2 (b) and (c) describe data collection requirements in the through-wall and length dimension for reflectors exceeding 50% DAC. Additionally, the supplemental requirements specified in Regulatory Guide 1.150, Revision 1, are applicable to the UT examination.

The licensee proposed as an alternative to the Code requirements that the ultrasonic examinations performed, which were at a lower gain setting than required by Code, be considered an acceptable alternative to the Code examination requirements. The affected welds are:

Outlet @ 22°	Weld 2-N4-O
Inlet @ 67°	Weld 2-N4-I
Inlet @ 113°	Weld 2-N3-I
Outlet @158°	Weld 2-N3-O
Inlet @ 247°	Weld 2-N2-I
Inlet @ 293°	Weld 2-N2-I

The Code requires that scanning be performed at a gain setting at least two times the reference level, except that the reference level shall be used when electronic distance amplitude correction is used with automated scanning. At D.C. Cook, Unit 2, the examination of two outlet nozzles and four inlet nozzle-to-shell welds was performed at a gain setting less than calibration sensitivity. These welds were not reexamined upon discovery of this error due to the undue hardship and burden of removing the core barrel and the equipment hatch flange and unpacking and reassembly of the automated inspection equipment. The licensee estimated that seven additional outage days would have been required to reexamine these nozzle welds, with an estimated radiation dose of 500-700 millirem. Therefore, requiring the licensee to reexamine the nozzles during the first interval would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

To compensate for the error in the gain setting during scanning, the data were enhanced to permit data evaluation. The evaluation of the enhanced data indicated six indications

warranting further investigation due to signal amplitudes greater than the 50% DAC threshold level. Subsequent sizing, performed with the enhanced data, indicated that all six of the indications exceeded allowable a/t ratios.

Thus, the licensee and its vendor, SwRI, performed manual examinations from the nozzle OD to further evaluate the indications. Based on the OD examination of three of the nozzles, the licensee determined that two of the six indications were acceptable and that the remaining indications were false calls due to transducer lift-off. Three of the indications were inaccessible and could not be evaluated from the OD due to insulation that could not be removed because of the adjacent concrete structure. However, the licensee compared the initial data from the three reflectors that could not be accessed from the OD with that obtained from the indications which were subsequently examined from the OD. From this comparison, the licensee determined that the three indications not accessible from the OD were either false calls or acceptable slag inclusions.

The staff determined that based on the examinations that were performed, the evaluation of the enhanced data, and the subsequent reexaminations from the OD surface that any significant patterns of degradation would have been detected and that the examinations performed provide reasonable assurance of structural integrity of the subject nozzle-to-vessel welds for the second 10-year ISI interval. Therefore, the staff determined that the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii)

3.0 CONCLUSION

The staff has concluded that based on its review of the licensee's submittal on its proposed alternative to use the examinations that were performed on the nozzle welds in lieu of the Code examination requirements for the RPV nozzle-to-vessel welds provides reasonable assurance of structural integrity of the subject welds. In addition, the staff concluded that imposition of the Code requirements on the licensee would result in a burden or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, the staff concluded that the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

Principal Contributor: Tom McLellan

Date:

Attachment: Technical Letter Report

TECHNICAL LETTER REPORT
ON THE PROPOSED ALTERNATIVE FOR THE
NOZZLE-TO-REACTOR PRESSURE VESSEL WELD EXAMINATIONS
INDIANA MICHIGAN POWER COMPANY
DONALD C. COOK NUCLEAR PLANT UNIT 2
SECOND 10-YEAR INTERVAL
DOCKET NUMBER 50-316

1.0 INTRODUCTION

By letter dated June 28, 1996, the licensee, Indiana Michigan Power Company, requested relief for the reactor vessel nozzle weld examinations for Donald C. Cook Nuclear Plant, Unit 2. In a letter dated September 10, 1996, the licensee submitted an amendment to the June 28, 1996 letter, proposing that the examinations of the reactor pressure vessel nozzle-to-shell welds performed for the second 10-year interval be found acceptable. Conference calls were held with the licensee on March 14, 1997, and May 2, 1997, to discuss the licensee's submittals. In response to an NRC request for additional information (RAI) dated February 4, 1997, the licensee submitted additional information by letter dated July 8, 1997. As the result of an additional conference call held on November 5, 1997, the licensee provided additional information by letter dated November 21, 1997. The Code of record for the second 10-year interval, which ended in June 1996, is ASME Section XI, 1983 Edition, Summer 1983 Addenda. The Idaho National Engineering and Environmental Laboratory (INEEL) staff has evaluated the information provided by the licensee.

2.0 EVALUATION

The licensee performed the reactor pressure vessel (RPV) nozzle-to-shell weld examinations during the April 1996, Unit 2, refueling outage (end of second 10-year ISI Program). The information provided by the licensee in support of the proposed alternative has been evaluated and the basis for disposition is documented below.

Proposed Alternative Examination, Examination Category B-D, Item B3.90, Reactor Pressure Vessel Nozzle-to-Shell Welds

Code Requirement: ASME Section XI, 1983 Edition, Summer 1983 Addenda, Table IWB-2500-1, Category B-D, Item B3.90, requires volumetric examination of all RPV nozzle-to-shell welds in each 10-year interval. Ultrasonic (UT) examinations of these welds must be performed in accordance with ASME Section V, Article 4, for reflectors oriented parallel and transverse to the weld. Paragraph T-425.3 of Article 4 states that scanning shall be performed at a gain setting at least two times the reference level, except that the reference level shall be used when electronic distance amplitude correction (DAC) is used with automated scanning. Paragraphs T-441.8.2 (b) and (c) describe data collection requirements in the through-wall and length dimension for reflectors exceeding 50% DAC. Additionally, the supplemental requirements specified in

Régulatory Guide 1.150, Revision 1, are applicable to the UT examination.

Licensee's Proposed Alternative: The licensee proposes that the ultrasonic examinations performed, which were at a lower gain setting than required by Code, be considered an acceptable alternative to the Code examination requirements. The affected welds are:

Outlet @ 22°	Weld 2-N4-O
Inlet @ 67°	Weld 2-N4-I
Inlet @ 113°	Weld 2-N3-I
Outlet @158°	Weld 2-N3-O
Inlet @ 247°	Weld 2-N2-I
Inlet @ 293°	Weld 2-N2-I

The licensee stated:

"As an alternative to the requirements of the ASME Code and Regulatory Guide 1.150, the examinations performed for the nozzle bore surface in April 1996 (second ten year ISI RPV examination) are proposed. We cannot demonstrate full compliance with ASME Section V and Regulatory Guide 1.150 for the examinations conducted in 1996. However, we were able to detect, at the lower gain setting, the same code acceptable indication that was found during the first interval examination, and our review of the nozzle data taken at the lower gain setting revealed no other indications of greater amplitude or extent (length) than the previously characterized indication. Additionally we were able to demonstrate the detectability of indications that would be in excess of 50% DAC for the outer 75% of the wall and 20% DAC for the inner 25% of the well. We therefore have reasonable assurance that the nozzle-to-shell weld bore examination conducted at the lower gain setting during the 1996 outage was capable of detecting flaws of equivalent amplitude or extent as the code acceptable indication found during the first interval examination."

Licensee's Basis for Relief (as stated):

"The second ten year RPV ISI examination of the nozzle-to-shell welds from the nozzle bore surface for reflectors oriented parallel to the weld is not in compliance with ASME Section V, Article 4, T-425.3 and T-441.8.2 (b) and (c), and the supplemental requirements of Regulatory Guide 1.150 for scanning gain setting and data collection for recordable indications. During post-examination data review, it was determined that these examinations were conducted at gain settings less than ASME Code and that as a result, the detection and sizing requirements of ASME Section XI and Regulatory Guide 1.150 were not met. These welds were not reexamined upon discovery of this error due to the undue hardship and burden of removing the core barrel and the equipment hatch flange and unpacking and reassembly of the automated inspection equipment. We estimate that seven additional outage days would have been required to reexamine these nozzle welds, with an estimated radiation dose of 500-700 mr without any commensurate benefits in quality and safety.

"During the unit 2 second ten year ISI RPV examination an incorrect scanning gain setting was used on the eight nozzle-to-shell weld examinations conducted from the nozzle bore surface. This examination was performed in April 1996 during the last refueling outage of the second ten year interval. Code relief is requested for six of the eight nozzles, since two nozzles were properly examined during the first period of the second interval. The second ten year interval ended on June 30, 1996.

"The incorrect gain setting was discovered while investigating a discrepancy in the data between the first and second ten year ISI examinations for an indication on one of the inlet nozzles. This indication was originally found during the first ten year ISI RPV examination and was further investigated by removing a small piece of insulation from the RPV outside diameter and scanning manually. The indication was characterized as a code acceptable slag inclusion. During the second ten year ISI examination, this indication was also detected with the automated RPV UT equipment at the lower gain setting, but at a significantly lower amplitude than recorded during the first interval. Prior to the discovery of the incorrect gain setting, we performed the manual examination from the outside surface of the RPV to compare with the results of the first interval examination. The results of this manual examination correlated well with the results of the prior examination and demonstrated that the indication was approximately the same size as characterized during the first interval examination. It is important to note that the core barrel was reinstalled in the vessel prior to the discovery of the incorrect gain setting on the automated UT examination. We estimate that the reexamination would have resulted in an additional seven outage days and radiation exposure of 500-700 mr.

"Attachment 2 is the vendor's final report that details the evaluation of the Enhanced Data Acquisition System (EDAS) data gathered at the incorrect pulser gain setting during the unit 2 examinations. The EDAS data from the 1996 unit 2 examinations was compared with the data obtained from previous examinations of these nozzles (preservice and the first ten year interval inservice examinations). It was established through these evaluations that there are no indications greater in length than the one code acceptable indication detected at the lower gain setting and characterized manually form the outside surface of the vessel during the 1996 unit 2 examinations and the first interval examinations.

"Several tests were developed by our ISI contractor to validate both qualitatively and quantitatively the results of the 1996 unit 2 examinations. An empirical approach was used to determine the equivalent 50% DAC and 20% DAC thresholds for each channel used during the 1996 examinations after the examination system was fully calibrated, normalized to the configuration used at Cook Nuclear Plant and verified. The EDAS used in the examination of these nozzles records ten bits of data, but only the upper seven bits are normally used for data analysis. In this evaluation the lower three bits were used for the evaluation of the 1996 nozzle bore examinations. Effectively, the ISI contractor was able to review the detection data as if it were only two decibels less than ASME code required sensitivity. This review identified eleven signals that exceeded 50% DAC, all detected in the outer 75% of the wall. No signals greater than 20% DAC were detected in the inner 25% of the wall. Amplitude based sizing was done at code scanning increments (0.60 inch) larger than code sizing increments (0.25 inch), which

increases the conservatism of indication sizing in the length direction. The sizing data is presented in attachment 2, and the results show that the size of any indications associated with these signals would be expected to be significantly less than that of the known flaw. It therefore can be concluded from this analysis that acceptable detectability was achieved during the unit 2 examinations at the required 50% DAC and 20% DAC sensitivities. It also can be concluded that it is unlikely a defect exists in these welds that exceed the length of the known flaw that is code acceptable. "Construction records were reviewed for all unit 2 RPV nozzles in an attempt to verify the nature and geometry of the indications detected during the 1996 unit 2 examinations. Twelve indications were identified and characterized both by radiographic and ultrasonic techniques. Two boat samples were removed at that time and were determined by metallurgical analysis to be slag inclusions. All twelve slag inclusions were weld repaired followed by nondestructive testing confirming their removal. There was little, if any, correlation with the 1996 examination data, which further supports the conclusion that the signals produced during the 1996 examination were either not relevant (i.e. geometry, beam redirection, surface lift-off, etc.), or were produced by reflectors within code acceptable limits.

"The six nozzle-to-shell welds for which code relief is requested were examined in 1988 for reflectors parallel and transverse to the weld with an ASME Section V/Regulatory Guide 1.150 compliant technique. The only relevant indications found in these nozzles during the 1988 examinations was the code-acceptable slag indication previously mentioned. The ASME code/regulatory guide 1.150 compliant examinations of the nozzle-to-vessel welds from the shell side for reflectors tranverse to the weld were conducted in April 1996 at the proper gain etting and no indications were found. In-service, ASME Code/Regulatory Guide 1.150 acceptable examinations of outlet nozzles 2-N1-0 and 2-N2-0, which are not part of this request, were conducted in the first period of the second ten year interval, with no recordable indications. Additionally, neither we nor our ISI vendor are aware of any past industry experience with service-induced flaws on the nozzle-to-shell welds in PWRs.

"There is significant data which support the conclusions that the most common type of indication in the nozzle-to-shell welds of reactor pressure vessels is slag inclusion defects. Our ISI vendor has over 20 years experience examining RPV nozzle welds, and has confirmed that the indications found are typically slag inclusions due to construction practices and processes used at that time. It is reasonable to conclude from the construction records and industry history that the only relevant indications in the nozzle-to-shell welds are slag inclusions which are within code acceptable size limits.

"We therefore believe that there are no safety or structural integrity concerns based on past examination results, industry experience on service-induced flaws in nozzle-to-shell welds, and the close review of data on the recent second ten year interval ISI RPV exams. We also believe that the use of the 1996 unit 2 examination as an alternate examination provides an acceptable level of quality and safety."

In the November 21, 1997, letter, the licensee stated:

"On November 2, 1997, Southwest Research Institute (SwRI) and Cook Nuclear Plant inservice inspection (ISI) personnel conducted an ultrasonic examination (UT) of the unit 2 reactor pressure vessel (RPV) nozzle welds from the outside surface to meet the intent of our commitments in our submittal AEP:NRC:096BB, dated July 8, 1997. This document reports our findings, supplements our code relief request submitted in AEP:NRC:0969BB, and establishes the basis of acceptance for these examinations.

"In 1996, during the unit 2 refueling outage, the second ten-year interval vessel examination was performed to comply with ASME Section XI code requirements. Vessel shell welds and nozzle-to-vessel shell welds were examined using automatic UT equipment. Shortly after the examination was complete and the equipment removed from the RPV, we discovered that the nozzle-to-shell welds were examined at a lower than required gain setting. A computer enhanced review, using the results of the 1996 UT was conducted and six indications were conservatively identified as exceeding code allowables. One of the six identified indications was previously located and manually sized from the outside diameter (OD) during previous examinations. Indication 50rr-1 was larger in signal amplitude than the other five indications. A code relief request was submitted in AEP:NRC:096AX, dated September 10, 1996. This submittal requested the NRC accept the 1996 RPV nozzle-to-shell weld examination and the subsequent ultrasonic enhanced data analysis, based on the condition that there were no other indications found that were larger or equal in size than the code acceptable 50rr-1 indication.

"Subsequently, a request for additional information (RAI) was received from the NRC. After conferring with our ISI vendor, the NRC, and the Idaho National Engineering Laboratory (INEL), we decided to modify our original code relief request, AEP:NRC:096AX. In our submittal AEP:NRC:096BB, we committed to the manual examination of the five indications that were found during the computer enhanced ultrasonic data analysis, providing that they were reasonably accessible from the OD of the nozzle. During the 1997 examination, we were unable to obtain access to all indications because of the presence of a concrete structure that did not allow removal of the insulation. Consequently, two of five indications were examined, and it is noted that these two indications had the highest signal amplitude.

"The results of the 1997 ASME code UT revealed no recordable indications on the two accessible indications. In addition to the code examination conducted at code sensitivities, we also increased the sensitivity (gain) and again scanned for these indications, finding none in the weld region. This indicates that these two indications found during the computer enhancement review of unit 2 nozzle-to-shell weld second ten-year interval ISI data, are non-relevant indications or false calls, presumably caused by transducer shoe lift-off. Figures 1 and 2[1] illustrate the UT coverage and insulation removal for each manual examination.

Figures in licensee's submittal not contained in this report.

"Table 1 [paraphrased below] summarizes the information previously reported on the five indications that we planned to examine and the data obtained in the November 2, 1997, examinations. Information on indication 50rr-1 (a known flaw), which was detected and sized prior to the 1996 examination is also included. The table contains two categories of indications, those that had been observed on previous code compliant examinations, and those that had not.

"Of the five indications scheduled for OD examination in the 1997 outage, four (44-1, 48a-1, 48a-2, and 48a-3) were not seen previously on code compliant examinations. During this outage, the two with the highest amplitude, 48a-1 and 48a-2, were accessible. The results of the ASME code UT indicated no recordable indications. In addition to the examination conducted at code sensitivities, we also increased the sensitivity (gain) and re-scanned the areas for these indications. No evidence of a flaw was found in either area. These results, along with the fact that neither indication was observed during previous examinations, allow us to conclude that these two indications are non-relevant false calls, caused by transducer shoe lift-off often encountered during automated examinations over cladded surfaces. Based on the similarities of the four indications in this category, we also conclude that the remaining two lower amplitude indications, 44-1 and 48a-3 are non-relevant as well. There are no industry reports of failure, or instances of crack propagation, that occurred as a result of flaws that exist in the mid to outer region of the weld where all these indications would be located if they were not false calls.

"Indications 49rr-1 and 50rr-1 were observed prior to the 1996 examination, and were also both observed using the enhanced 1996 data. Supplemental detection and sizing of 50rr-1 from the outside surface in 1988, 1990 and 1996 confirmed that the indication is acceptable and stable, and is most likely a slag inclusion, because slag inclusions were documented on this vessel during construction. Of the two, the enhanced data shows 50rr-1 to be 179% greater in signal amplitude and 261% greater in a/t% than 49rr-1. Based on the similarities of these two indications, and the comparison obtained from the 1996 enhanced data, we conclude that 49rr-1 is also acceptable and most likely a slag inclusion.

"Based on the above, we have reasonable assurance that there are no safety or structural integrity concerns that have not been addressed. We are confident the alternative defined and provided in previous NRC correspondence, and supplemented by this document, provides an acceptable level of quality and safety.

Exam #	44	48a	48a	48a	49rr	50rr
Indication #	1	1	2	3	1	1
Azimuth	334°	116°	299°	352°	1°	293°
%a/t*	6.2	14.8	5.2	6.7	6.2	16.2
Amplitude (%DAC)	80	114	96	67	80	143

Exam #	44	48a	48a	48a	49rr	50rr
Previous Indication?	N	N	N	N	Y(1977, 1988)	Y (1977, 1988, 1990, 1996)
OD Exam Results	NA	No recordable indication (False Call)	No recordable indication (False Call)	NA	NA	Code allowable slag inclusion
Final Disposition	False Call	False Call	False Call	False Call	Acceptable	Acceptable
Basis for disposition	Not seen previously, similarity to Indications 1&2, exam 48a	1997 OD Exam	1997 OD Exam	Not seen previously, similarity to Indications 1&2, exam 48a	Slag inclusion but less in amplitude and a/t than 50rr	Slag inclusion sized less than code allowable
*Data obtained from electronic enhancement of unit 2 shell welds generated during the 2nd 10-year interval RPV examination and reported in SwRI report dated 8/96, Tables a & B.						

Evaluation: The Code requires that scanning be performed at a gain setting at least two times the reference level, except that the reference level shall be used when electronic distance amplitude correction is used with automated scanning. At D.C. Cook, Unit 2, the examination of two outlet nozzles and four inlet nozzle-to-shell welds was performed at a gain setting less than calibration sensitivity. These welds were not reexamined upon discovery of this error due to the undue hardship and burden of removing the core barrel and the equipment hatch flange and unpacking and reassembly of the automated inspection equipment. The licensee estimated that seven additional outage days would have been required to reexamine these nozzle welds, with an estimated radiation dose of 500-700 millirem. Therefore, requiring the licensee to reexamine the nozzles during the first interval would cause a significant burden on the licensee.

To compensate for the error in the gain setting during scanning, the data were enhanced to permit data evaluation. The evaluation of the enhanced data indicated six indications warranting further investigation due to signal amplitudes greater than the 50% DAC threshold level. Subsequent sizing, performed with the enhanced data, indicated that all six of the indications exceeded allowable a/t ratios. Thus, the licensee and its vendor, SwRI, performed manual examinations from the nozzle OD to further evaluate the indications. Based on the OD examination of three of the nozzles, the licensee determined that two of the six indications were acceptable and that the remaining indications were false calls due to transducer lift-off. Three of the indications were inaccessible and could not be evaluated from the OD due to insulation that could not be removed because of the adjacent concrete structure. However, the licensee compared the initial data from the three reflectors that could not be accessed from the OD with that obtained from the indications which were subsequently examined from the OD. From this comparison, the licensee determined that the three indications not accessible from the OD were either false calls or acceptable slag inclusions. Based on the examinations that were performed, the evaluation of the enhanced data, and the subsequent reexaminations from the OD surface, it is concluded that any significant

- patterns of degradation would have been detected and that the examinations performed provide reasonable assurance of the structural integrity of the subject nozzle-to-vessel welds for the second 10-year ISI interval.

3.0 CONCLUSION

The INEEL staff has reviewed the licensee's submittal on the proposed alternative to the Code examination requirements for the RPV nozzle-to-vessel welds. Based on the reasonable assurance provided by the examinations that were performed on the nozzle welds, it is concluded that imposition of the Code requirements would result in a burden on the licensee without a compensating increase in the level of quality and safety. Therefore, it is recommended that the licensee's proposed alternative be authorized pursuant to 10 CFR 50.55a(a)(3)(ii).