

June 5, 2001

Mr. J. B. Beasley, Jr.
Vice President
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 RE: RELIEF
REQUESTS FOR THE SECOND 10-YEAR INSERVICE INSPECTION (ISI)
INTERVAL (TAC NOS. MB0548 AND MB0549)

Dear Mr. Beasley:

By letter dated October 18, 2000, as supplemented by letter dated February 16, 2001, you submitted requests for relief from certain American Society of Mechanical Engineers (ASME) Code Section XI requirements for ISI. The staff has reviewed and evaluated the information provided in Relief Request Nos. RR-34, RR-36, RR-37, and RR-39. By letter dated April 27, 2001, you withdrew Relief Request No. RR-38.

The staff's safety evaluation is enclosed. The relief requests were reviewed against the requirements of the 1989 Edition of the ASME Code, Section XI and Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i).

The staff finds your proposed alternatives in Relief Request Nos. RR-34, RR-36, RR-37, and RR-39 provide an acceptable level of quality and safety. Therefore, your proposed alternatives for the subject relief requests are authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the second 10-year ISI interval at Vogtle Electric Generating Plant, Units 1 & 2.

Sincerely,

/RA/

Leonard N. Olshan, Acting Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosure: As stated

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO THE SECOND 10-YEAR INSERVICE INSPECTION INTERVAL
RELIEF REQUEST NOS. RR-34, RR-36, RR-37, RR-38, AND RR-39
VOGTLE ELECTRIC GENERATING PLANT
SOUTHERN NUCLEAR OPERATING COMPANY, INC.
DOCKET NOS. 50-424 AND 50-425

1.0 INTRODUCTION

By letter dated October 18, 2000, as supplemented by letters dated February 16 and April 27, 2001, Southern Nuclear Operating Company, Inc. (SNC, the licensee), submitted requests for relief from certain requirements of the American Society of Mechanical Engineers (ASME) Code, Section XI for Vogtle Electric Generating Plant, Units 1 and 2 (Vogtle). The information provided by the licensee in support of the requests for relief from Code requirements has been evaluated by the staff and the basis for disposition is documented below. In its letter dated April 27, 2001, the licensee withdrew Relief Request No. RR-38.

2.0 BACKGROUND

Inservice inspection (ISI) of the ASME Code Class 1, 2 and 3 components is to be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 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 the licensee demonstrates that (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 preservice 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

Enclosure

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. For Vogtle, Units 1 and 2, the applicable edition of Section XI of the ASME Code for the second 10-year ISI interval is the 1989 Edition.

3.0 EVALUATION

3.1 Relief Request Number RR-34

The Components for which Relief is Requested

Class 2 and 3 pressure-retaining bolted connections in non-borated systems.

Applicable ASME Section XI Code (1989 Edition) requirement from which relief is requested

The 1989 Edition of ASME Section XI, IWA-5250(a)(2) requires that if leakage occurs at a bolted connection, the bolting shall be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100.

Relief is requested from removing bolting from pressure-retaining bolted connections in non-borated systems and performing the required visual examination (VT-3) should leakage be detected during performance of ASME Section XI pressure testing activities.

Licensee's Basis for Requesting Relief (as stated)

Non-borated systems do not experience the corrosive environment from boric acid residue and are not subject to the same level of aggressive attack from leakage as borated systems.

When leakage is detected in a non-borated system, the integrity of the bolted connections can typically be adequately assessed without the prescriptive requirement for removal of the bolting. Performing an evaluation, as described in the Alternative Examination, represents a more reasonable approach as opposed to immediately removing all bolting without evaluating the situation. The evaluation will address the cause of leakage, the need for bolt torquing or removal of bolting, and the potential for bolting degradation that could affect joint integrity. The evaluation may conclude that removal of the bolting is not necessary or it may require removal of one or more bolts for further examination. SNC believes that this approach is based on sound engineering principles and will continue to assure that the structural integrity of the bolted connections will be maintained.

Licensee's Proposed Alternative (as stated)

In lieu of the IWA-5250(a)(2) requirements, SNC may elect to perform an evaluation to determine the appropriate course of action. The evaluation will:

- a. Consider the potential for bolting degradation as well as the cause of the leakage,
- b. Determine the need for bolt torquing,

- c. Determine the need for removal of bolting for further examination, and
- d. Assure that the bolting and component material in the area of leakage is evaluated to assure joint integrity until the next in-place visual examination.

If corrosion is observed at a leaking connection, the evaluation will determine if the corrosion is minor or significant. Minor (cosmetic) corrosion is not uncommon for carbon steel bolting. If the corrosion is deemed significant, SNC proposes to remove the bolt with the most apparent corrosion, perform a VT-1 examination, and evaluate in accordance with IWB-3517.1. If the bolt is deemed unacceptable for continued service, bolts adjacent to unacceptable bolts in the connection shall be removed, examined, and evaluated.

Evaluations shall be documented in writing and maintained in the plant records. The result of these findings will be made available to the regulatory authority having jurisdiction at the plant site. Repairs and/or replacements necessitated by these evaluations will be performed and documented, as required.

Licensee's Justification for Relief (as stated)

For a non-borated environment, performance of the proposed evaluation (when leakage occurs at a bolted connection during a pressure test) will provide reasonable assurance that degradation of bolting will be detected and adequately addressed, thereby providing an acceptable level of quality and safety. Therefore, the proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).

Staff Evaluation and Conclusion

In accordance with the 1989 Edition of the Code, when leakage occurs at bolted connections, all bolting is to be removed for VT-3 visual examination. In lieu of removal of the associated bolting to perform a VT-3 visual examination, the licensee proposes to perform an evaluation of the bolted connection of non-borated systems. The evaluation will consider the potential for bolting degradation as well as the cause of leakage. If the evaluation indicates the need for a more detailed analysis, the bolt closest to the source of leakage will be removed, VT-3 examined, and evaluated in accordance with IWA-3100(a).

The licensee's alternative to bolting removal when leakage occurs in pressure-retaining bolted connections in non-borated systems is based on sound engineering judgment. As a result, the staff finds that the licensee's proposed alternative to the Code-required removal of bolting at a leaking joint will provide an acceptable level of quality and safety for Class 2 and 3 non-borated bolted connections. Therefore, the licensee's proposed alternative in RR-34 is authorized pursuant to 10 CFR 50.55a(a)(3)(i).

3.2 Relief Request Number RR-36

The System/Components for which Relief is Requested

Requirements of Tables IWB-2412-1, IWC-2412-1, IWD-2412-1, and ASME Code Case N-491 Table-2410-2 used in selecting the maximum percentages of examinations credited for each period.

Applicable Code Requirement

Tables IWB-2412-1, IWC-2412-1, IWD-2412-1, of the 1989 Edition of ASME Section XI, and ASME Code Case N-491 Table-2410-2 require the following:

Inspection Period, Calendar Years of Plant Service Within the Interval	Minimum Examinations Completed, %	Maximum Examinations Credited, %
3	16	34
7	50	67
10	100	100

ASME Section XI Code requirement from which relief is requested

Relief is requested from selecting the maximum percentages of examinations credited for each period as required by Tables IWB-2412-1, IWC-2412-1, IWD-2412-1, and ASME Code Case N-491 Table-2410-2. Relief is also requested to use the exceptions found in the 1996 Addenda of the 1995 Edition of ASME Section XI, IWB-2412, IWC-2412, IWD-2412, and IWF-2410.

Licensee's Basis for Requesting Relief (as stated)

Code Case N-598 which was approved March 2, 1998 by ASME addresses an alternative to the requirements of Tables IWB-2412-1, IWC-2412-1, IWD-2412-1, and starting with the 1990 Addenda, IWF-2410-2. This same alternative was incorporated into the 1998 Edition of ASME Section XI Code, not as an alternative, but as the code requirement. Southern Nuclear Operating Company (SNC) has approval to use ASME Code Case N-491 in lieu of the selection criteria found in IWF. Therefore, ASME Code Case N-491 Table-2410-2 will be substituted for Table IWF-2410-2 referenced in the ASME Code Case N-598. . . . As for the exceptions, the 1996 Addenda of the 1995 Edition of ASME Section XI containing these exceptions was approved by the NRC in the latest version of 10 CFR 50.55a.

Licensee's Proposed Alternative Examination (as stated)

Southern Nuclear Operating Company will comply with the requirements of ASME Section XI, Code Case N-598, except Table IWF-2410-2 will be substituted with ASME Code Case N-491 Table-2410-2. In addition, SNC will incorporate the following exceptions:

- (a) The required percentage of examinations in each Examination Category shall be completed in accordance with the table contained in ASME Code Case N-598 with the following exceptions:
 - (1) Examination Categories B-N-1, B-P, and B-Q;
 - (2) examinations partially deferred to the end of an inspection interval, as allowed by Examination Categories B-A, B-D, and B-F;
 - (3) examinations deferred to the end of an inspection interval, as allowed by Examination Categories B-A, B-L-1, B-M-1, B-N-2, B-N-3, and B-O;
 - (4) examinations deferred until disassembly of a component for maintenance, repair/replacement activity, or volumetric examination, as allowed by Examination Categories B-G-1, B-G-2, B-L-2, and B-M-2;
 - (5) welded attachments examined as a result of component support deformation under Examination Categories B-K, C-C, or D-A.

If there are less than three items or welds to be examined in an Examination Category, the items or welds may be examined in any two periods, or in any one period if there is only one item or weld, in lieu of the percentage requirements contained in ASME Code Case N-598.

- (b) If items or welds are added to the Inspection Program, during the service lifetime of the plant, examinations shall be scheduled as follows:
 - (1) When items or welds are added during the first period of an interval, at least 25% of the examinations required by the applicable Examination Category and Item Number for the added items or welds shall be performed during each of the second and third periods of that interval. Alternatively, if deferral of the examinations is permitted for the Examination Category and Item Number, the second period examinations may be deferred to the third period and at least 50% of the examinations required by the applicable Examination Category and Item Number for the added items or welds shall be performed during the third period.

- (2) When items or welds are added during the second period of an interval, at least 25% of the examinations required by the applicable Examination Category and Item Number for the added items or welds shall be performed during the third period of that interval.
- (3) When items or welds are added during the third period of an interval, examinations shall be scheduled in accordance with (a) above.

Licensee's Justification for Granting Relief (as stated)

ASME Code Case N-598 provides an alternative to the Inspection Program B Tables in order to eliminate redundancy and provide more flexibility for scheduling examinations. That code case has been evaluated by the ASME Code Committee and has been deemed acceptable. In addition, the proposed exceptions found in the 1996 Addenda of the 1995 Edition of ASME Section XI, IWB-2412, IWC-2412, IWD-2412, and IWF-2410 have been approved by the NRC in the latest version of 10 CFR 50.55a. Thus, an acceptable level of quality and safety will have been achieved and public health and safety will not be affected by allowing the proposed alternative and exceptions in lieu of the Code requirements. Therefore, it is requested that the proposed alternative and exceptions be authorized pursuant to 10 CFR 50.55a(a)(3)(i).

Staff Evaluation and Conclusion

The Code requires that the sequence of component examinations established during the initial ISI interval be repeated during each successive inspection interval to the extent practical. In addition, Tables IWB-2412-1, IWC-2412-1, IWD-2412-1 of the 1989 Edition of ASME Code Section XI, Table IWE-2412-1 of the 1992 Edition of ASME Section XI, 1992 Addenda, and ASME Code Case N-491 Table-2410-2 require a distribution of examinations each inspection period. The licensee proposes to comply with the requirements of ASME Section XI, Code Case N-598 except that Table IWF-2410-2 will be substituted with ASME Code Case N-491 Table-2410-2. In addition, the licensee will incorporate the above listed exceptions which include categories that are to be examined following criteria that are specific to the subject category as stated in the 1989 Edition of the Code in lieu of the percentage requirements contained in ASME Code Case N-598 or in the 1989 Edition of the Code Tables IWB-2412-1, IWC-2412-1, and IWD-2412-1. The exceptions listed above also include directions for items or welds added to the inspection program during the service lifetime of the plant. In addition, the exceptions listed above provide direction on the inspection of Examination Categories which contain less than three items or welds to be examined. That direction is that the items or welds may be examined in any two periods or in any one period if there is only one item or weld.

The Code scheduling philosophy requires periodic examination of selected areas to assure continued system operability and integrity. Modifying the schedule of examination areas for the licensee's second 10-year ISI interval provides the licensee with a means to enhance the overall efficiency of the ISI program. The staff has endorsed Code Case N-491-1 in Regulatory Guide 1.147, Revision 12, and the subject table in Code Case N-491 is the same as the subject table in Code Case N-491-1. Therefore, the staff finds the use of Table-2410-2 acceptable. Code Case N-598 and Section XI of the Code both require the same minimum percentage of

examinations be completed each inspection period, but the Code Case allows a greater maximum percentage of examinations to be performed early in the interval.

The use of Code Case N-598 will establish a new sequence of component examinations. While Code Case N-598 allows the licensee to perform examinations earlier in the interval, 10 years will not be exceeded between component examinations. Consequently, the use of Code Case N-598 will provide an acceptable level of quality and safety. In addition, the licensee's listed exceptions from following Code Case N-598 are for items that are to be examined following criteria that are specific to the subject category/item number, and the licensee will follow the requirements listed in the 1989 Edition of the Code for the specific category/item number. In addition, the licensee's exceptions define additional guidance for items or welds added during the interval and when there are less than three items or welds in a specific category/item number. The staff finds the licensee's exceptions acceptable because they provide direction on handling items that are not applicable to the Code-required distribution of examinations and on handling situations not covered by Code rules. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i).

3.3 Relief Request Number RR-37

The System/Components for which Relief is Requested

This request for relief proposes an alternative to the requirements of IWA-7000 when material meeting the definition in IWA-9000 is purchased, exchanged, or transferred between nuclear plant sites.

Applicable ASME Section XI Code Requirement

Article IWA-7000 of the 1989 Edition of ASME Section XI contains the requirements for Code applicability of replacement items.

Code Requirement from Which Relief is Requested

Relief is requested from the requirements of IWA-7210, and as an alternative, it is proposed that ASME Section XI Code Case N-528 be utilized.

Licensee's Basis for Requesting Relief (as stated)

Code Case N-528 provides an alternative to the administrative requirements of Section III imposed by IWA-7210. SNC has reviewed the code case and has determined its implementations will substantially reduce nonbeneficial work activities required by IWA-7000.

Licensee's Proposed Alternative (as stated)

Southern Nuclear Operating Company will comply with the requirements of Code Case N-528 in lieu of IWA-7210.

Licensee's Justification for Relief (as stated)

The ASME Code Committee evaluated the proposed alternatives contained in Code Case N-528 and determined that they are acceptable for replacement activities involving material meeting the definition of IWA-9000. The implementation of Code Case N-528 will not affect the level of quality and safety nor decrease the margin of public health and safety. While the cost savings associated with Code Case N-528 have not been quantified as a Cost Beneficial Licensing Action item, its implementation is consistent with the intent to eliminate nonbeneficial work activities and their associated costs. Therefore, it is requested that the proposed alternative be authorized pursuant to 10 CFR 50.55a(a)(3)(i).

Staff Evaluation and Conclusion

The licensee proposes to comply with the requirements of Code Case N-528 in lieu of ASME Section XI Subarticle IWA-7210. Subarticle IWA-7210 requires that an item to be used for replacement meet the original Construction Code (Section III of the ASME Code) and existing design requirements. Code Case N-528 provides an alternative to the requirements of Section III imposed by IWA-7210, allowing material meeting the definition in IWA-9000 to be purchased, exchanged, or transferred between nuclear plant sites, provided certain requirements as listed in the Code case are met.

In effect, the supplying plant fulfills the regulatory requirement for source evaluation by originally procuring the material and documentation in conformance with Section III of the Code and subsequently maintaining the material in accordance with its approved Appendix B Quality Assurance Program.

The staff has evaluated Code Case N-528 as an acceptable alternative to certain administrative requirements of Section III when material is purchased, exchanged, or transferred between nuclear plant sites. The Code case requires that the material was originally procured in compliance with ASME Code, Section III requirements, maintained in conformance with an approved Appendix B program, and not subject to any operation that might affect the mechanical properties of the material. The licensee is responsible for ensuring that the received documentation is complete and in compliance with Code requirements, that the material meets the design requirements for the intended application, and that the material conforms to the licensee's Appendix B program and all other regulatory requirements and commitments.

These requirements provide reasonable assurance that the proposed alternative provides an acceptable level of quality and safety. Therefore, the alternative provided by Code Case N-528 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the second 10-year inservice inspection interval at Vogtle, Units 1 and 2. Should Code Case N-528 be approved by reference in a future revision to Regulatory Guide (RG) 1.147 prior to the end of the licensee's second 10-year inservice inspection interval, the licensee must follow all provisions in Code Case N-528 with the limitations, if any, issued in RG 1.147, should the licensee intend to continue implementing the code case.

3.4 Relief Request Number RR-39

The System/Components for which Relief is Requested

All components subject to ultrasonic (UT) examination.

Applicable ASME Section XI Code Requirement

Appendix VII, Article-4000, Paragraph VII-4240, "Annual Training," of the 1989 Edition of the ASME Section XI Code requires that a minimum of ten (10) hours per year of supplemental training be provided to Level I, II and III nondestructive examination (NDE) personnel. The supplemental training is intended to impart knowledge of new developments, material failure modes, and any pertinent technical topics as determined by the employer.

Code Requirement from Which Relief is Requested (as stated)

Relief is requested from the requirement of ASME Section XI, 1989 Edition, Appendix VII, Article-4000, Paragraph VII-4240 for a minimum of 10 hours of annual supplemental training for Level I, II and III NDE personnel.

Licensee's Basis for Requesting Relief (as stated)

The 1989 Edition of ASME Section XI, Appendix VII, was developed prior to the requirements for the NDE Performance Demonstration Initiative (PDI). The ASME Section XI Code Committee recognized that with the implementation of ASME Section XI, Appendix VIII, and the PDI, that the requirements of Appendix VII, paragraph VII-4240, did not adequately address the type, extent, and frequency of training required to maintain ultrasonic examination proficiency. Therefore, ASME Section XI Code Case N-583 was developed in response to an inquiry related to training requirements and was subsequently incorporated into Appendix VII of the 1998 Edition of the ASME Section XI Code with 1999 Addenda.

Paragraph 2.4.1.1.1 of Federal Register (Volume 64, No. 183 dated September 22, 1999) contained the following statement, "The NRC had determined that this requirement (i.e., 10 hours of training on an annual basis-emphasis added for clarification) was inadequate for two reasons. The first reason was that the training does not require laboratory work and examination of flawed specimens. Signals can be difficult to interpret and, as detailed in the regulatory analysis for this rule making (i.e., revision of 10 CFR 50.55a to invoke the requirements of the 1995 Edition of the ASME Section XI Code with 1996 Addenda-emphasis added for clarification), experience and studies indicate that the examiner must practice on a frequent basis to maintain the capability for proper interpretation. The second reason is related to the length of training and its frequency. Studies have shown that an examiner's capability begins to diminish within approximately 6 months if skills are not maintained. Thus, the NRC had determined that 10 hours of annual training is not sufficient practice to maintain skills, and that an examiner must practice on a more frequent basis to maintain proper skill level. The PDI program has adopted a

requirement for 8 hours of training, but it is required to be hands-on practice. In addition, the training must be taken no earlier than 6 months prior to performing examinations at a licensee's facility. PDI believes that 8 hours will be acceptable relative to an examiner's abilities in this highly specialized skill area because personnel can gain knowledge of new developments, material failure modes, and other pertinent topics through other means. Thus, the NRC has decided to adopt in the Final Rule (i.e., the rule making involving 10 CFR 50.55a in which NRC approval of the ASME Section XI Code is updated to the 1995 Edition with 1996 Addenda-emphasis added for clarification) the PDI position on this matter. These changes are reflected in 10 CFR 50.55a(b)(2)(xiv)."

The September 22, 1999, version of 10 CFR 50.55a(b)(2) states: "Appendix VIII personnel qualification. All personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training on specimens that contain cracks. This training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility."

Code Case N-583 responded to an inquiry related to an alternative to the annual training requirements of Appendix VII-4240. The reply states "...supplemental practice may be used to maintain UT personnel examination skills. Personnel shall practice UT techniques by examining or by analyzing prerecorded data from materials or welds containing flaws similar to those that may be encountered during inservice examinations. This practice shall be at least 8 hr per year and shall be administered by an NDE Instructor or Level III; no examinations required."

Licensee's Proposed Alternative (as stated)

Southern Nuclear Operating Company (SNC) proposes to use the alternative annual NDE personnel training requirements defined in ASME Section XI Code Case N-583 instead of the annual supplemental training requirements found in Appendix VII, paragraph VII-4240. ...

Licensee's Justification for Relief (as stated)

Pursuant to 10 CFR 50.55a(a)(3)(i), SNC requests approval to use the alternative annual NDE personnel training requirements defined in ASME Section XI, Code Case N-583. Effective May 22, 2000, the requirements of ASME Section XI, 1995 Edition and 1996 Addenda, Appendix VIII are applicable for inservice inspection (ISI) at all nuclear electric generating plants within the United States. The Appendix VIII requirements will be implemented at Plant Vogtle via the industry PDI. Implementation of Appendix VIII, via the PDI, provides for more stringent requirements for qualification and demonstration of personnel, equipment, and procedures utilized for ISI.

The application of Code Case N-583, in conjunction with the requirements for ASME Section XI, Appendix VIII, will provide adequate assurance that Level I, II, and III NDE personnel receive sufficient supplemental practice to maintain their ultrasonic examination skills. Therefore, use of the proposed alternative as discussed herein is

warranted pursuant to 10 CFR 50.55a(a)(3)(i). The alternative use of Code Case N-583, in conjunction with the 1995 Edition, 1996 Addenda of ASME Section XI, Appendix VIII, provides an acceptable level of quality and safety.

Staff Evaluation

Subsubarticle VII-4240, Appendix VII of Section XI of the ASME Code requires 10 hours of annual training to impart knowledge of new developments, material failure modes, and any pertinent technical topics as determined by the licensee. No hands-on training or practice is required to be included in the 10 hours of training. This training is required of all UT personnel qualified to perform examinations of ASME Code Class 1, 2, and 3 systems. Independent of the ASME Code, 10 CFR 50.55a(b)(2)(xiv) imposes annual training requirements for UT personnel qualified to perform Appendix VIII examinations - that 8 hours of hands-on training with flawed specimens containing cracks be performed no earlier than 6 months prior to performing examinations at a licensee's facility.

The licensee's proposed alternative is to conduct annual UT training in accordance with ASME Code Case N-583 in conjunction with 10 CFR 50.55a(b)(2)(xiv) in lieu of the Subsubarticle VII-4240 to Appendix VII of Section XI of the ASME Code, all endorsed editions, for personnel certified to perform UT examinations. The use of Code Case N-583 has not been endorsed by the NRC in Regulatory Guide 1.147. The annual training requirements in Code Case N-583 are for all UT personnel to perform 8 hours of practice examination or analyzing material or welds containing flaws similar to those encountered in the field. However, unlike the requirements of 10 CFR 50.55a(b)(2)(xiv), the flaws in specimens specified by Code Case N-583 are not required to contain cracks, and no 6-month training condition is imposed. By conjoining the annual training requirements of Code Case N-583 with 10 CFR 50.55a(b)(2)(xiv), the licensee is, in essence, proposing to follow the requirements of 10 CFR 50.55a(b)(2)(xiv) for all non-Appendix VIII UT examinations in lieu of the requirements of Appendix VII, Subsubarticle VII-4240. By regulation, the licensee is required to implement the requirements of 10 CFR 50.55a(b)(2)(xiv) for UT personnel performing Appendix VIII UT examinations.

As part of the staff's rulemaking effort to revise 10 CFR 50.55a(b)(2), the issue of UT annual training requirements for Appendix VIII personnel qualification was reviewed. This review was included in the summary of comments to the rule published in the *Federal Register* (64 CFR 51370). In the review, the staff determined that the 10-hour annual training requirement specified in the ASME Code was inadequate for two reasons. The first reason is that the training does not require practice with flawed specimens. Practice with flaws is necessary because signals can be difficult to interpret. The second reason is related to the length of training and its frequency. Studies have shown that an examiner's capability begins to diminish within 6 months if skills are not maintained. Therefore, examiners must practice on a frequent basis to maintain their capability for proper interpretation of flaws.

Based on resolution of public comments for the above rulemaking, the staff accepted an industry initiative advanced by the Electric Power Research Institute which proposed 8 hours of hands-on practice with flawed specimens containing cracks. The practice would occur no earlier than 6 months prior to performing examinations at a licensee's facility. The initiative was adopted in 10 CFR 50.55a(b)(2)(xiv) for personnel maintaining their Appendix VIII qualifications.

The staff notes that the requirements of Code Case N-583 alone are not the same as, or equivalent to, the annual training requirements of 10 CFR 50.55a(b)(2)(xiv). Therefore, use of Code Case N-583 by itself is not adequate. Only when Code Case N-583 is used together with 10 CFR 50.55a(b)(2)(xiv) has the staff determined that the skills of non-Appendix VIII qualified UT personnel can be adequately maintained.

The requirements of 10 CFR 50.55a(b)(2)(xiv) are independent of Subsubarticle VII-4240 requirements. This independence results in the need to establish two sets of requirements for annual training. The licensee would therefore have to either maintain two separate programs or show how these separate requirements are being fulfilled under one program. Each program has the same objective, that is, to maintain the skills of their UT personnel. By qualifying the non-Appendix VIII and Appendix VIII examiners to the same annual training requirements (10 CFR 50.55a(b)(2)(xiv)) as the licensee has proposed, the licensee can avoid the problems, redundancy, and costs associated with maintaining two separate but similar programs.

Based on the discussion above, the staff concludes that in lieu of the supplemental annual training requirements of Appendix VII, Subsubarticle VII-4240, the proposed alternative to use Code Case N-583 in conjunction with 10 CFR 50.55a(b)(2)(xiv) will provide an acceptable level of quality and safety with respect to annual training of non-Appendix VIII UT personnel as well as Appendix VIII UT personnel. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the use of the proposed alternative is authorized for the second ISI interval at Vogtle Electric Generating Plant, Units 1 and 2.

4.0 SUMMARY

For Relief Request Nos. RR-34, RR-36, RR-37, and RR-39 the staff finds that the licensee's proposed alternatives provide an acceptable level of quality and safety. Therefore, the proposed alternatives for relief requests RR-34, RR-36, RR-37, and RR-39 are authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the licensee's second ISI interval at Vogtle Electric Generating Plant, Units 1 and 2. Relief Request No. RR-38 was withdrawn by the licensee by letter dated April 27, 2001.

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Date: June 5, 2001

Vogtle Electric Generating Plant

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