August 22, 2006

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 3 - RELIEF FROM AMERICAN SOCIETY OF MECHANICAL ENGINEERS, SECTION XI REQUIREMENTS FOR THE THIRD INSERVICE INSPECTION INTERVAL (TAC NOS. MC8791 AND MC8793)

Dear Mr. Singer:

By a letter dated October 19, 2005, the Tennessee Valley Authority (TVA, the licensee) submitted Relief Requests 3-PDI-4 and 3-ISI-17 requesting to use alternatives to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Appendix VIII, Supplements 4, 6, and 11 for the remainder of the third 10-year inservice inspection interval at Browns Ferry Nuclear Plant (BFN) Unit 3.

The U.S. Nuclear Regulatory Commission staff has reviewed and evaluated the information provided in support of TVA's relief requests. Based on the conclusions contained in the enclosed safety evaluation, the staff authorizes relief pursuant to Title 10 of the *Code of Federal Regulations* Section 50.55a(a)(3)(i) on the basis that the alternatives provide an acceptable level of quality and safety.

These reliefs are authorized for the remainder of the third 10-year inservice inspection interval at BFN Unit 3, which began November 19, 2005, and ends November 18, 2015.

Sincerely,

/RA/

L. Raghavan, Chief
Project Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-296

Enclosure: Safety Evaluation

cc w/encl: See next page

August 22, 2006

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 3 - RELIEF FROM AMERICAN SOCIETY OF MECHANICAL ENGINEERS, SECTION XI REQUIREMENTS FOR THE THIRD INSERVICE INSPECTION INTERVAL (TAC NOS. MC8791 AND MC8793)

Dear Mr. Singer:

By a letter dated October 19, 2005, the Tennessee Valley Authority (TVA, the licensee) submitted Relief Requests 3-PDI-4 and 3-ISI-17 requesting to use alternatives to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Appendix VIII, Supplements 4, 6, and 11 for the remainder of the third 10-year inservice inspection interval at Browns Ferry Nuclear Plant (BFN) Unit 3.

The U.S. Nuclear Regulatory Commission staff has reviewed and evaluated the information provided in support of TVA's relief requests. Based on the conclusions contained in the enclosed safety evaluation, the staff authorizes relief pursuant to Title 10 of the *Code of Federal Regulations* Section 50.55a(a)(3)(i) on the basis that the alternatives provide an acceptable level of quality and safety.

These reliefs are authorized for the remainder of the third 10-year inservice inspection interval at BFN Unit 3, which began November 19, 2005, and ends November 18, 2015.

Sincerely,

/RA/
L. Raghavan, Chief
Project Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-296

Enclosure: Safety Evaluation

cc w/encl: See next page

Distribution:

PUBLIC	LPL2-2 R/F	RidsNrrPMLRegner	RidsNrrPMEBrown
RidsAcrsAcnwMailCenter		RidsNrrDorlLpl2-2	RidsNrrLABClayton
RidsOGCRp		RidsNrrDciCpnb	DNaujock
RidsRgn2MailCenter (MWidmann)		SLee, EDO	

ADAMS ACCESSION NUMBER: ML062080744 NRR-106

OFFICE	LPL2-2/PM	LPL2-2/PM	LPL2-2/LA	CPNB/BC	OGC	LPL2-2/BC
NAME	LRegner	EBrown	BClayton	TChan	MZobler	LRaghavan
DATE	8/17/06	8/17/06	8/17/06	8/15/06	8/17/06	8/22/06

OFFICIAL RECORD COPY

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

AMERICAN SOCIETY OF MECHANICAL ENGINEERS SECTION XI

INSERVICE INSPECTION PROGRAM

REQUEST FOR RELIEF 3-PDI-4 AND 3-ISI-17

BROWNS FERRY NUCLEAR PLANT, UNIT 3

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

1.0 INTRODUCTION

By letter dated October 19, 2005, the Tennessee Valley Authority (TVA, the licensee) submitted Relief Request (RR) Numbers 3-PDI-4 and 3-ISI-17 to use alternatives to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code at the Browns Ferry Nuclear Plant (BFN), Unit 3. In a letter dated May 25, 2006, the licensee provided additional information. The licensee requested in RR 3-PDI-4 to use personnel and procedures qualified to the requirements of Section XI, Appendix VIII, Supplements 4 and 6, to examine the shell-to-flange weld. TVA also requested in RR 3-ISI-17 to use personnel and procedures qualified to the requirements of Section XI, Appendix VIII, Supplement 11, to examine weld overlays. The requests are for the remainder of the third 10-year inservice inspection (ISI) interval that began November 19, 2005 and ends November 18, 2015.

2.0 REGULATORY EVALUATION

The ISI of the ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI, "Rules for ISI of Nuclear Power Plant Components," of the ASME Code and applicable edition and addenda, except where specific written relief has been granted by the Commission pursuant to the *Code of Federal Regulations* (10 CFR) 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states, in part, that alternatives to the requirements of paragraph (g) may be used when authorized by the Nuclear Regulatory Commission (NRC), if the applicant 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) will meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in Section XI of the ASME Code, to the extent

Enclosure

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. As stated in 10 CFR 50.55a(g)(4)(iv), inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph 10 CFR 50.55a(b), subject to the limitations and modification listed in 10 CFR 50.55a(b) and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met. The code of record for the third 10-year ISI interval at the BFN Unit 3 is the 2001 Edition through 2003 Addenda of Section XI of the ASME Code.

3.0 TECHNICAL EVALUATION, REQUEST NO. 3-PDI-4

3.1 Affected Systems and Components

The ASME Code Class 1, reactor pressure vessel (RPV) upper vessel shell-to-flange welds. The TVA ISI program weld designation 3-C-5-FLG.

3.2 Applicable ASME Code Requirements

From the 2001 Edition with 2003 Addenda of Section XI of the ASME Code, Table IWB-2500-1, Examination Category B-A, Item Number B1.30.

Per IWA-2232, “Ultrasonic Examinations shall be conducted in accordance with Appendix I.”

Appendix I, Paragraph I-2110(b) states “Ultrasonic examination of the reactor vessel-to-flange welds, closure head-to-flange welds, and integral attachment welds shall be conducted in accordance with Article 4 of Section V, except that alternative examination beam angles may be used.”

3.3 Proposed Alternative to ASME Code Requirements

The licensee proposed using procedures, personnel, and equipment qualified to the requirements of ASME Code, Section XI, Appendix VIII, Supplement 4 and Supplement 6 of the 2001 Edition, in accordance with 10 CFR 50.55a(b)(2)(xxiv) and as amended by 10 CFR 50.55a(b)(2)(xv)(B) through 10 CFR 50.55a(b)(2)(xv)(G) and 10 CFR 50.55a(b)(2)(xvi)(A), as administered by the Electric Power Research Institute (EPRI) Performance Demonstration Initiative (PDI) program to conduct the required vessel-to-flange weld examinations.

3.4 Basis for Request

ASME Section V, Article 4, describes the required techniques to be used for the Ultrasonic Testing (UT) of welds in ferritic pressure vessels with wall thicknesses greater than 2 inches. The calibration techniques, recording criteria and flaw sizing methods are based upon the use of a distance-amplitude-correction curve (DAC) derived from machined reflectors in a basic

calibration block. UT performed in accordance with ASME Section V, Article 4, used recording thresholds of 50-percent DAC for the outer 80-percent of the required examination volume and 20-percent DAC from the clad/base metal interface to the inner 20-percent margin of the examination volume. Indications detected in the designated examination volume, with amplitudes below these thresholds, were not required to be recorded. Use of the Appendix VIII/PDI processes would enhance the quality of the examination results reported because the detection sensitivity is more conservative and the procedure requires the examiner to evaluate all indications determined to be flaws regardless of their associated amplitude. The recording thresholds in Section V, Article 4, requirements and in the guidelines of Regulatory Guide 1.150, Revision 1, "UT of Reactor Vessel Welds During Preservice and Inservice Examinations," are generic and do not take into consideration such factors as flaw orientation, which can influence the amplitude of UT responses.

The EPRI Report NP-6273, "Accuracy of Ultrasonic Flaw Sizing Techniques for Reactor Pressure Vessels (RPV)," dated March 1989, established that UT flaw sizing techniques based on tip diffraction are the most accurate. The qualified prescription-based UT procedures of ASME Section V, Article 4, have been applied in a controlled process with mockups of RPVs that contained real flaws and the results statistically analyzed according to the screening criteria in Appendix VIII of ASME Section XI. The results show that the procedures in Section V, Article 4, are less effective in detecting flaws than procedures qualified in accordance with Appendix VIII as administered by the PDI processes. Appendix VIII/PDI qualified procedures use tip diffraction techniques for flaw sizing. The proposed alternative Appendix VIII/PDI methodology uses analysis tools based upon echo dynamic motion and tip diffraction criteria, which has been validated, and is considered more accurate than the Section V, Article 4 processes.

3.5 Technical Evaluation

The licensee proposes to use the qualification requirements contained in the 2001 Edition of Supplements 4 and 6 to Appendix VIII of Section XI of the ASME Code in lieu of the qualification requirements of Section V, Article 4, of the ASME Code. The two supplements use a performance-based approach for the qualification of procedures, personnel and equipment for RPV examinations of the clad/base metal interface and inner 15-percent of weld regions (Supplement 4) and the outer 85-percent of weld region (Supplement 6).

Qualified prescriptive-based UT procedures in Section V, Article 4 have been applied in a controlled setting containing real flaws in mockups of reactor vessels and the results have been statistically analyzed according to the screening criteria in Appendix VIII of the ASME Code, Section XI. The results show that Section V, Article 4 examinations are equal or less effective than UT examinations performed with personnel, equipment, and procedures qualified through Supplements 4 and 6. Qualification through Supplements 4 and 6 use fewer transducers and higher sensitivities than required by Section V, Article 4. The higher sensitivities increase the chances of detecting flaws as compared to the prescriptive-based requirements of Section V, Article 4. Also, flaw sizing is more accurately determined with the echo-dynamic motion and tip diffraction criteria used by Supplements 4 and 6, as opposed to the less accurate amplitude criteria for the prescriptive-based requirements of Section V, Article 4. Procedures, equipment, and personnel qualified through the PDI program have demonstrated a high probability of flaw detection. Based on the above considerations, the NRC staff considers the proposed alternative will reliably identify any flaw or degradation in the RPV shell-to-flange weld regions.

3.6 Conclusion

The NRC staff has determined that the proposed alternative (Request No. 3-PDI-4) to use the 2001 Edition of Supplements 4 and 6 to Appendix VIII of Section XI of the ASME Code and 10 CFR 50.55a(b)(2)(xxiv) as amended by 10 CFR 50.55a(b)(2)(xv)(B) through 10 CFR 50.55a(b)(2)(xv)(G) and 10 CFR 50.55a(b)(2)(xvi)(A), in lieu of the qualification requirements of Section V, Article 4 of the ASME Code, will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative (Request No. 3-PDI-4) is authorized for the BFN Unit 3 for the third 10-year ISI interval that began on November 19, 2005, and ends November 18, 2015. This authorization is limited to those components described in Section 3.1. All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

4.0 TECHNICAL EVALUATION, REQUEST NO. 3-ISI-17

4.1 Affected Systems and Components

The affected components are the welds in the recirculation (Recirc) and residual heat removal (RHR) systems.

Weld Identification	SYSTEM	PIPE SIZE (inches)	Examination Category
GR-3-53	Recirc	28.0	E
DSRHR-3-11	RHR	20.0	E
GR-3-03	Recirc	28.0	E
GR-3-27	Recirc	28.0	E
GR-3-54	Recirc	28.0	E
GR-3-57	Recirc	28.0	E
GR-3-59	Recirc	28.0	E
GR-3-60	Recirc	28.0	E
GR-3-64	Recirc	28.0	E

4.2 Applicable ASME Code Requirements

From the 2001 Edition with 2003 Addenda of Supplement 11 to Appendix VIII of Section XI of the ASME Code, as amended by 10 CFR 50.55a(b)(2)(xxiv). The specific Supplement 11, paragraphs are 1.1(d)(1), 1.1(e)(1), 1.1(e)(2)(a)(1), 1.1(e)(2)(a)(2), 1.1(e)(2)(a)(3), 1.1(e)(2)(b)(1), 1.1(e)(2)(b)(2), 1.1(e)(2)(b)(3), 1.1(f)(1), 1.1(f)(4), 2.3, and 3.2(b).

4.3 Proposed Alternative to ASME Code Requirements

The licensee proposed using procedures, personnel, and equipment qualified to the requirements of ASME Code, Section XI, Appendix VIII, Supplement 11, as administered by the EPRI PDI program for pipe weld overlays.

4.4 Licensee's Basis for Request (as stated)

The requirements of ASME Section XI, Appendix VIII, Supplement 11, as stated in the 2001 Edition through the 2003 Addenda are not practical to implement. The requirements were amended to improve the implementation process. The amended requirements are contained in the attachment to this relief request [Agencywide Documents Access and Management System Accession number ML052930158]. The EPRI sponsored PDI amendments to Supplement 11, as shown in the attachment [for the above RR], were coordinated with PDI, NRC and Pacific Northwest National Laboratory.

The proposed amended requirements of Supplement 11 for the qualification of personnel, procedures, and equipment will provide an alternative with an acceptable level of quality and safety.

4.5 Technical Evaluation

The licensee proposed to use the program developed by PDI, which differs from selected paragraphs in Supplement 11. For clarification and consistency, when ASME Code used the term base, the PDI proposal used the term base metal, and when the ASME Code used the phrase overlay flaw, the PDI proposal used the phrase overlay fabrication flaws. The staff's evaluation of the differences between the PDI program and Supplement 11 are discussed below:

Paragraph 1.1(d)(1):

The PDI program determined that certain Supplement 11 requirements pertaining to location and size of cracks would be extremely difficult to achieve. In an effort to satisfy the requirements, the PDI program developed a process for fabricating flaws that exhibited crack-like reflective characteristics. Instead of all flaws being cracks, as required by Paragraph 1.1(d)(1), the PDI program weld overlay performance demonstrations contain at least 70-percent cracks with the remainder being fabricated flaws exhibiting crack-like reflective characteristics. The application of alternative flaws are limited with a flaw tip dimension of 0.002 inches. The NRC has reviewed the flaw fabrication process, and has compared the reflective characteristics between cracks and fabricated flaws. Throughout the PDI proposal, the ASME Code term 'crack' is replaced with the term 'flaw' in order to substitute fabricated flaws for cracks. NRC found the fabricated flaws acceptable for the application.

Paragraph 1.1(e)(1):

The ASME Code requires that at least 20-percent but not less than 40-percent of the flaws shall be oriented within plus or minus 20-degrees of the axial direction. In the proposed PDI program, the flaws satisfy the requirement and specifies that the flaws must be in the base

metal. The PDI program is confining flaw placement to ensure that candidates do not have visual or physical access to the flaws. This is a tightening of the requirements. Hence, the proposed application of flaw angles to the axial direction is acceptable.

Paragraph 1.1(e)(1):

The ASME Code also requires that the requirements of IWA-3300 shall be used to determine whether closely spaced flaws should be treated as single or multiple flaws. The proposed PDI program treats each flaw as an individual flaw and not as part of a system of closely spaced flaws. The proposed program controls the flaws going into a test specimen set such that the flaws are free of interfering reflections from adjacent flaws. In some cases, this would permit flaws to be closer together than what is allowed by IWA-3300, thus making the performance demonstration more challenging. Hence, the proposed application for closely spaced flaws is acceptable.

Paragraph 1.1(e)(2)(a)(1):

The ASME Code requires that a base grading unit shall include at least 3 inches of the length of the overlaid weld, and the base grading unit includes the outer 25-percent of the overlaid weld and base metal on both sides. The PDI program reduced the criteria to 1 inch of the length of the overlaid weld and eliminated from the grading unit the need to include both sides of the weld. The test specimens from the existing weld overlay program have flaws on both sides of the welds, which prevents them from satisfying the base grading unit requirements. These test specimens have been used successfully for testing the proficiency of personnel for over 16 years. This is a more challenging test because the individual must locate the flaw on the correct side of the weld. Hence, the proposed application of the 1 inch length of the overlaid weld base grading unit and elimination from the grading unit the need to include both sides of the weld is acceptable.

Paragraph 1.1(e)(2)(a)(2):

The ASME Code requires when base metal cracks penetrate into the weld overlay, the weld overlay within 1 inch of the crack becomes part of the base metal grading unit. The PDI program makes the base metal part of the weld overlay grading unit for cracks ending in the weld overlay. The object of the performance demonstration is to detect the crack tip that is in the weld overlay. The change redefines the grading unit to be representative of the intent of the performance demonstration, thus the proposed application is acceptable.

Paragraph 1.1(e)(2)(a)(3):

The ASME Code requires that for unflawed base grading units, at least 1 inch of unflawed overlaid weld and base metal shall exist on either side of the base grading unit. This is to minimize the number of false identifications of extraneous reflectors. The PDI program stipulates that unflawed overlaid weld and base metal exist on all sides of the grading unit and be free of interfering reflections from adjacent flaws, which addresses the same concerns as the Code. Hence, the proposed application of the variable flaw free area adjacent to the grading unit is acceptable.

Paragraph 1.1(e)(2)(b)(1):

The ASME Code requires that an overlay grading unit shall include the overlay material and the base metal-to-overlay interface of at least 6 square inches. The overlay grading unit shall be rectangular, with minimum dimensions of 2 inches. The PDI program reduces the base metal-to-overlay interface to at least 1 inch (in lieu of a minimum of 2 inches) and eliminates the minimum rectangular dimension. This criterion is more challenging than the ASME Code because of the variability associated with the shape of the grading unit. Hence, the proposed application of the grading unit is acceptable.

Paragraph 1.1(e)(2)(b)(2):

ASME Code requires that overlay fabrication grading units designed to be unflawed shall be separated by unflawed overlay material and unflawed base metal-to-overlay interface for at least 1 inch around its entire perimeter. The PDI program changes the requirement of 1 inch around its perimeter to 1 inch at both ends with sufficient unflawed overlaid weld and base metal on both sides of the overlay fabrication grading unit to preclude interfering reflections from adjacent flaws. The PDI proposal accommodates test specimens that have been successfully used for previous weld overlay qualifications under the Tri-party (NRC/Boiling-Water Reactor Owners Group/EPRI) agreement program. Hence, the proposed application of the grading unit is acceptable.

Paragraph 1.1(e)(2)(b)(3):

The ASME Code identifies the minimum number of flawed and unflawed grading units in the test set. The PDI proposal stipulates that for detection, the procedure test set must consist of at least three personnel test sets. The PDI proposal is more conservative than the ASME Code. Hence, the PDI proposal is acceptable.

Paragraph 1.1(f)(1):

The ASME Code identifies the minimum number of flaws and flaw locations in the test set. The PDI proposal stipulates that for sizing, the procedure test set must consist of at least three personnel test sets. The PDI proposal is more conservative than ASME Code. Hence, the PDI proposal is acceptable.

Paragraph 1.1(f)(4):

The ASME Code stipulates base metal cracks extending in the overlay. The PDI proposal uses base metal flaws extending into the overlay. The flaws are fabricated alternatives to cracks that were determined to be acceptable in Paragraph 1.1(d)(1). Hence, the use of the term flaws in this paragraph is also acceptable.

Paragraph 2.3:

The ASME Code requires 80-percent of the flaws shall be sized at a specific location on the surface of the specimen identified to the candidate. This requires detection and sizing performance demonstration to be performed separately. The PDI proposal permits detection

and sizing performance demonstration to be performed together, when necessary, and permits identifying flawed regions instead of specific locations. The PDI proposal is more challenging for sizing because the candidate has no prior knowledge of specific flaw locations. Hence, the PDI proposal is acceptable.

Paragraph 3.2(b):

The ASME Code requires that all extensions of base metal cracking into the overlay material by at least 0.1 inch be reported as intrusions into the overlay material. The PDI program omits this criterion. The PDI program requires that cracks be sized to the tolerance specified in the Code, which is 0.125 inches. Since the Code tolerance is close to the 0.1 inch value of Paragraph 3.2(b), any crack extending beyond 0.1 inch into the overlay material would be identified from its dimensions. The reporting of an extension in the overlay material is redundant for performance demonstration testing. Hence, the proposed omission of highlighting a crack extending beyond 0.1 inch into the overlay material is acceptable.

4.6 Conclusion

Based on the above evaluation, the NRC staff has concluded that the proposed alternative to use the EPRI-PDI program requirements in lieu of selected paragraphs of Supplement 11 to Appendix VIII of Section XI of the ASME Code will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the alternative proposed in RR 3-ISI-17 is authorized for the third 10-year interval for BFN Unit 3 which began on November 19, 2005, and ends November 18, 2015. This authorization is limited to those components described in Section 4.1. All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

5.0 CONCLUSION

Based on the information provided in the licensee's submittals, the NRC staff has determined that the proposed alternatives in Relief Requests 3-PDI-4 and 3-ISI-17 and, as described above, provide an acceptable level of quality and safety, and, therefore, are authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the remainder of the third 10-year ISI interval at BFN Unit 3, which began November 19, 2005, and ends November 18, 2015. This authorization is limited to those components described in Section 3.1 and 4.1 above.

Principal Contributor: Donald Naujock

Mr. Karl W. Singer
Tennessee Valley Authority

BROWNS FERRY NUCLEAR PLANT

cc:

Mr. Ashok S. Bhatnagar, Senior Vice President
Nuclear Operations
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Larry S. Bryant, Vice President
Nuclear Engineering & Technical Services
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Brian O'Grady, Site Vice President
Browns Ferry Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Decatur, AL 35609

Mr. Robert J. Beecken, Vice President
Nuclear Support
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

General Counsel
Tennessee Valley Authority
ET 11A
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. John C. Fornicola, Manager
Nuclear Assurance and Licensing
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Bruce Aukland, Plant Manager
Browns Ferry Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Decatur, AL 35609

Mr. Robert G. Jones, General Manager
Browns Ferry Site Operations
Browns Ferry Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Decatur, AL 35609

Mr. Glenn W. Morris, Manager
Corporate Nuclear Licensing
and Industry Affairs
Tennessee Valley Authority
4X Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. William D. Crouch, Manager
Licensing and Industry Affairs
Browns Ferry Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Decatur, AL 35609

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, AL 35611-6970

State Health Officer
Alabama Dept. of Public Health
RSA Tower - Administration
Suite 1552
P.O. Box 303017
Montgomery, AL 36130-3017

Chairman
Limestone County Commission
310 West Washington Street
Athens, AL 35611