Attachment 1 to be withheld from Public Disclosure Under 10 CFR 2.390. When separated from this Enclosure, this letter is decontrolled.

Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

August 12, 2011

10 CFR 50.4(b)(6)
10 CFR 50.34(b)
10 CFR 2.390(d)(1)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 2
Docket No. 50-391

Subject: WATTS BAR NUCLEAR PLANT (WBN) – UNIT 2 – FINAL SAFETY ANALYSIS REPORT (FSAR), AMENDMENT 105

References:

1. TVA letter to NRC dated June 3, 2011, "Watts Bar Nuclear Plant (WBN) - Unit 2 - Final Safety Analysis Report Amendment 104"
2. TVA letter to NRC dated October 11, 2007, "Watts Bar Nuclear Plant (WBN) - Unit 2 - Exemptions, Reliefs, Deviations and Exceptions" (ML072910331)
3. NRC Supplemental Safety Evaluation Report (SSER) 5 dated November 1, 1990 (ML073520360)
4. TVA letter to NRC dated February 13, 1985, "Exemption Request" (ML073511898)

This letter transmits WBN Unit 2 FSAR Amendment 105 (A105), which reflects changes made since the issuance of Amendment 104 on June 3, 2011 (Reference 1).

Enclosure 1 contains a summary listing of FSAR sections and corresponding Unit 2 change package numbers associated with the A105 FSAR changes. Most of these changes were the result of resolutions to NRC Requests for Additional Information.

FSAR A105 is contained on the enclosed Optical Storage Media (OSM #1) (Attachment 1). The FSAR contains security-related information identified by the designation "Security-Related Information - Withhold Under 10 CFR 2.390." TVA hereby requests this information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. A redacted version of the FSAR is contained on OSM #2 (Attachment 2), which is suitable for public disclosure.

Enclosure 2 contains a listing of the FSAR pages that have been redacted. Enclosure 3 lists the files and file sizes on the security-related OSM (OSM #1), and Enclosure 4 lists the files and file sizes on the publicly available OSM (OSM #2).

DO 30
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In addition, TVA requests a deviation for Unit 2 from the requirement contained in Regulatory Guide 1.68, Revision 2, "Initial Test Programs for Water-Cooled Nuclear Power Plants," WBN Technical Specifications (TS) , and the WBN Unit 2 FSAR for cold no-flow, cold full-flow, and hot no-flow rod drop testing. In 2007, TVA had initially indicated in Reference 2 that no deviation would be requested for this item. However, TVA has since determined that a deviation would be pursued for the U2 completion project. Precedent for this deviation exists since a deviation was approved for Unit 1 by NRC in Reference 3. It is also stated in SSER 5 that Callaway Nuclear Plant Unit 1 had also been granted a similar deviation. Since WBN Unit 1 was the last U.S. plant licensed, no other later precedent is expected to exist. With A105, Chapter 14 has been revised to reflect this deviation, but will not be implemented pending NRC review and approval. Enclosure 5 provides the further details for this deviation request.

There are no new commitments made in this letter. This amendment closes SSERs 22/23, Item Nos. 47, 66, 95, 96, 99, 100, and 102. This letter does not close any "Generic Communications." If you have any questions, please contact Bill Crouch at (423) 365-2004.

I declare under the penalty of perjury that the foregoing is true and correct. Executed on the 12th day of August, 2011.

Respectfully,

David Stinson
Watts Bar Unit 2 Vice President

Enclosures:

1. WBN Unit 2 FSAR A105, "Summary Listing of A105 FSAR Changes"
2. WBN Unit 2 FSAR A105, "Summary of Redacted Pages"
3. WBN Unit 2 FSAR A105, "List of files and file sizes on the security-related OSM (OSM #1)"
4. WBN Unit 2 FSAR A105, "List of files and file sizes on the publicly available OSM (OSM #2)"
5. WBN Unit 2, "Deviation Request from Regulatory Guide 1.68, Revision 2"

Attachments:

1. OSM #1: WBN Unit 2 FSAR Amendment 105 - Security-Related Information - Withhold Under 10 CFR 2.390
2. OSM #2: WBN Unit 2 FSAR Amendment 105 - Publicly Available Version

cc: See Page 3

cc (Enclosures):

U. S. Nuclear Regulatory Commission
Region II
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245 Peachtree Center Ave., NE Suite 1200
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NRC Resident Inspector Unit 2
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
1.	Section 4.3.2.7	Insert the following paragraph WBN conforms fully with the criteria of 10 CFR 50.68(b)(6). There are five radiation monitors located on elevation 757 of the Auxiliary Building in the vicinity of the new fuel vault and the spent fuel pool. Two of the monitors, 1-RE-90-1 and 2-RE-90-1, are area monitors that alert personnel in the vicinity of the fuel storage areas of excessive radiation for personnel protection and to initiate safety actions. These monitors also alarm in the main control room to alert the operators to initiate appropriate safety actions. There are two additional area radiation monitors, 0-RE-90-102 and 0-RE-90-103, that are located at the spent fuel pool to provide a more rapid response to a fuel handling accident, the presence of excessive radiation, or the presence of a fuel bundle with inadequate water shielding. These monitors alarm in the main control room and also isolate the normal Auxiliary Building ventilation system to reduce the release of radioactivity offsite. These monitors will also isolate the containment ventilation system if the containment or annulus is open to the Auxiliary Building during refueling operations. The fifth radiation monitor in the spent and new fuel area is a particulate air monitor. This monitor alarms locally for protection of personnel in the vicinity of the monitor and also serves to alert the plant staff of an excessive radiation condition that requires action.	2-105-01
2.	Table 6.2.6-3	Remove the phrase, "as specified in 10 CFR 50, Appendix J," in Note 3.	2-105-02

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
3.	Section 11.2	1. On Page 11.2-19, modify Section 11.2.6.5.1 to read as follows (changes are bolded and underlined): 11.2.6.5.1 Expected Normal Plant Operation The expected plant alignment and resultant releases are as follows: • CVCS letdown waste processed by the CVCS demineralizers and then by the mobile demineralizer. • The reactor coolant drain tank, the tritiated drain collector tank, and the floor drain collector tank discharges and processed using the mobile demineralizer. • Liquid releases from the Laundry and Hot Shower Drain Tank and the Turbine Building drains can be released without processing by mobile demineralizer. • Steam Generator Blowdown is released without processing. • The condensate demineralizers are bypassed. Thus there is no condensate demineralizer regeneration waste to be processed. 2. On Page 11.2-20, modify Section 11.2.6.5.2 to read as follows: 11.2.6.5.2 Other Plant Alignment Evaluations The values in Table 11.2-5 Column 4 assume the following: • CVCS letdown waste processed by the CVCS demineralizers and then by the mobile demineralizer. • The reactor coolant drain tank, the tritiated drain collector tank, and the floor drain collector tank discharges and processed using the mobile demineralizer. • Activity from Condensate Demineralizer waste due to the processing of condensate and steam generator blowdown is routed directly to the Cooling Tower Blowdown or the turbine building sump. • Liquid releases from the Laundry and Hot Shower Drain Tank and the Turbine Building drains were released without processing by mobile demineralizer.	2-105-03

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
3. (cont.)	Section 11.2	The values in Table 11.2-5 Column 5 assume the following: • CVCS letdown waste processed by the CVCS demineralizers and then by the mobile demineralizer. • The reactor coolant drain tank, the tritiated drain collector tank, and the floor drain collector tank discharges and processed using the mobile demineralizer. • Condensate demineralizer regeneration waste is processed by the mobile demineralizer. • Liquid releases from the Laundry and Hot Shower Drain Tank and the Turbine Building drains were released without processing by mobile demineralizer. 3. On Page 11.2-38, modify Footnote F and Footnote for columns 4 and 5, as follows: F (Ci/yr) = Activity from Condensate Demineralizer regeneration waste = Activity from 6 days of processing of condensate and steam generator blowdown flow by the condensate demineralizer. Column 4: ((A+B/C)/D) + E + F + G Column 5: ((A+B/C)/D) + E + F/D + G	2-105-03

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
4.	Section 12.3.1	Insert the following text at the end of Section 12.3.1, but before heading for Section 12.3.2, "Shielding." "Integration of Unit 2 for Dual Unit Operation The following section supplements the above discussion (written primarily for one unit operation) with the integration of Unit 2 operation for dual unit operation: Controlled Access Areas The Unit 2 controlled access area will be common with the Unit 1 controlled access area. This facility is located in the Service Building and is sized and situated properly to support two operating units. Personnel and Equipment Decontamination The Unit 2 personnel and equipment decontamination facilities will be common areas shared with the Unit 1 personnel and equipment decontamination facilities. The personnel decontamination facility is located in the Service Building and is sized and situated properly to support two operating units. The equipment decontamination facility is located in the Auxiliary Building and is sized and situated properly to support two operating units. Contamination Control Areas The primary Unit 2 contamination control area (i.e., radiologically controlled area [RCA] exit personnel monitoring station) will be a common area shared with the Unit 1 contamination control areas. This facility is located in the Service Building adjacent to the Auxiliary Building common entrance/exit point. This RCA exit point is equipped with personnel contamination monitors (PCMs), personnel gamma monitors, and tool and equipment monitors. PCMs are also provided at common locations inside the Auxiliary Building (i.e., 676', 713', and 757' elevations) for prompt personnel contamination monitoring when personnel exit contaminated areas. Frisker stations are also set up at remote exit points from the RCA when the use of PCMs is not practicable. Remote exit points are used only after prior approval by Radiation Protection and in the event of an emergency.	2-105-04

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
4. (cont.)	Section 12.3.1	Protective clothing laundry services are provided offsite by a contractor. Soiled protective clothing is temporarily stored onsite in designated containers until ready for shipment offsite. Laundered protective clothing returned from the laundry contractor is received at the plant Power Stores loading dock and temporarily stored in a room adjacent to the loading dock until issued for use. This facility is located in the Service Building and is sized and situated properly to support two operating units. Hot machine shop type activities are not normally performed onsite. Instead, radioactive materials requiring machine shop support are normally sent to either the TVA Western Area Radiological Laboratory or to a contractor licensed to receive radioactive material. If machining is performed onsite, a temporary RCA is set up in the clean area machine shop and controlled by Radiation Protection. Contamination control barriers, containments, or tents, as appropriate, are used to prevent the spread of contamination and airborne radioactivity. Storage facilities are established in the Auxiliary Building and the Service Building to maintain a central location for the inventory of standard portable decontamination equipment and supplies (i.e., high energy particulate air [HEPA] vacuums, HEPA ventilation units, pressure washers, spray wands, mops, etc.) that may be used during the normal decontamination and control of radioactive contamination in the plant. These facilities are sized and situated properly to support two operating units. In Plant Traffic Patterns to Radiologically Controlled Areas The Unit 2 in plant traffic patterns to RCAs will be virtually the mirror image of the Unit 1 in plant traffic patterns to RCAs. Access to Unit 1 and Unit 2 RCAs will share common corridors at each elevation of the Auxiliary Building. Common areas are sized and situated properly to support two operating units. Access to satellite Unit 2 RCAs (i.e., outside tanks) will be controlled in the same manner as Unit 1.	2-105-04

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
4. (cont.)	Section 12.3.1	Health Physics Facilities The Unit 2 Health Physics facilities (including dosimetry issue and maintenance, respiratory protection issue and maintenance, in-vivo and in-vitro bioassay, protective clothing and radiation survey instrument issue, Radiation Protection Manager [RPM] and technical staff office/work space) will be common with Unit 1 facilities. These facilities and offices are located in the Training Center (dosimetry issue and maintenance, and in-vivo and in-vitro bioassay), Service Building (respiratory protection issue and maintenance, protective clothing and radiation survey instrument issue), and Office Building (RPM and technical staff office/work space). These facilities are sized and situated properly to support two operating units. Onsite Laboratory for Analysis of Chemical and Radiological Samples The Unit 2 onsite laboratory for analysis of chemical and radiological samples will be common with the Unit 1 onsite laboratory for analysis of chemical and radiological samples. These facilities are located in the Auxiliary Building and the Service Building and are sized and situated properly to support two operating units. Radiological Counting Room The Unit 2 radiological counting room will be common with the Unit 1 radiological counting room. This facility is located in the Service Building and is sized and situated properly to support two operating units."	2-105-04

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
5.	12.4	On Page 12.4-2, insert prior to the Reference section, the following new section: "Unit 2 Dose Assessment Watts Bar Unit 2 operation and maintenance is expected to be virtually the same as that experienced in the operation and maintenance of Watts Bar Unit 1, including the radiation source term. Historic exposures for Watts Bar Unit 1 are provided in NUREG-0713, Volume 29, beginning in 1997 until 2007. The annual collective dose (person-rem) for this time frame ranged from a low of 3.106 person-rem to a high of 322.682 person-rem. The high collective dose of 322.682 person-rem occurred in 2006 at which time all four Unit 1 steam generators were replaced. Steam generator replacement and the resultant collective dose is not typical of normal operation and maintenance activities, thus is treated as special maintenance and not included in the proposed Watts Bar Unit 2 exposure estimate. (Steam generator replacement activities contributed to approximately 180 person-rem of the 322.682 person-rem for that year.) The proposed annual collective dose was determined by averaging the annual dose (less the steam generator replacement dose). This yields an average annual dose estimate of [(113 + 3.106 + 98.946 + 122.453 + 5.912 + 93.598 + 165.741 + 5.893 + 143.506 + (322.682-180) + 4.414)/11)] = 81.75 person-rem. Additionally, the collective doses for years 2008 and 2009 show a continuing downward trend towards dose reduction."	2-105-05
6.	Section 13.1.3	In Section 13.1.3, "Qualification Requirements for Nuclear Facility Personnel," on page 13.1-4, insert the following information: 1. Place a "1" as a footnote indicator after the position of Radiological Control Superintendent. 2. Insert the following as footnote 1, "1The position of Radiological Control Superintendent will meet the requirements of RG 1.8, Revision 2, and ANSI/ANS 3.1-1981, for all new personnel qualifying on positions identified in RG 1.8, Regulatory Position C.1, after January 1, 1990 as clarified by Reference 3. 3. Add a new Reference 3 as follows: "(3) TVA Standard Program and Processes, NPG-SPP-05.1, "Radiological Controls."""	2-105-06

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
7.	Section 1.1.1 Section 1.2.2.2 Section 7.1.2 Section 7.2.1.1.5 Section 7.4.2 Section 7.4.3 Table 7.1-1 Table 7.2-2 Section 7.5.1.2 Table 7.5-2 References 7.1 References 7.2 References 7.3 Section 11.4.4 Section 12.3.4.1.3	1. In Sections 1.1.1 and 1.2.2.2, change heat input for Reactor Coolant Pumps (RCPs) from 14MWt to 16MWt. 2. Insert new section 7.4.2 entitled, "Auxiliary Control Room (ACR)," and renumber 7.4.2, "Analysis," to 7.4.3. 3. For Section 7.1.2, remove the entries that are duplicated in Table 7.1-1, provide appropriate reference to Table 7.1-1 and renumber remaining items. 4. For Section 1.1.1, 7.1.2, 7.4.3, and Tables 7.1-1 and 7.5-2, correct the use of quotes, correct spelling errors, and adjust page numbers and entries in Table 7.1-1. Reformat Table 7.1-1 Notes for consistency and clarity. 5. For Table 7.1-1, add entries and notes associated with installation of the Common Q Post Accident Monitoring System (PAMS) and the RM-1000 digital radiation monitors 6. For Table 7.2-2, delete the word chamber from the description of the P-7 interlock. 7. For Section 7.5.1.2 and Table 7.5-2, revise definition of Type A variables to reflect the fact that TVA includes variables that do not meet the Regulatory Guide (RG) 1.97 definition and identify those variables in Table 7.5-2. 8. For References 7.1, 7.2, and 7.3, correct reference entries for WCAPs 17044 and 13869. 9. For Section 12.3.4.1.3, provide details of Channel Operability Test (COT) periodic test frequency in accordance with calculation WBN EEB EDQ1090-99005, Rev. 2. 10. For Section 11.4.4, revise terms used to describe monitor testing. 11. For 12.3.4.1.3, delete reference to the Offsite Dose Calculation Manual (ODCM) and reword for clarity. 12. For 7.2.1.1.5, delete discussion of the pressurizer level condensing chambers.	2-105-07

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
8.	Table 6.3-8	On Table 6.3-8, Sheets 7 and 8 of 66, change the Method of Detection for the Stuck Closed and Stuck Open Failure Modes associated with Items 8 and 9, as revised.	2-105-08
9.	Section 15.5	Revise Chapter 15 Tables as listed below with new values provided from recent dose calculation revisions: 15.5-2, "Doses from Loss of A/C Power" 15.5-5, "Doses from Gas Decay Tank Rupture" 15.5-9, "Doses from Loss of Coolant Accident" 15.5-13, "Doses from Recirculation Loop Leakage following a LOCA" 15.5-14, "Atmospheric Dilution Factors at the Control Building" 15.5-17, "Doses from Main Steam Line Break" 15.5-18, "Parameters Used in Steam Generator Tube Rupture Analysis" 15.5-19, "Doses from Steam Generator Tube Rupture" 15A-2, "Accident Atmospheric Dilution Factors (sec/m^3)"	2-105-09
10.	Section 14.2	1. On page 14.2-19, insert new Item "j" to read as follows: "(j) Appendix A, subparagraphs 2.b. Cold, no-flow, cold, full-flow and hot, no-flow rod drops do not provide any additional useful data. The drop times for these flow conditions are less conservative than for hot full flow conditions. WBN does not intend to perform cold, no-flow, cold, full-flow and hot, no-flow rod drops." 2. Since Table 14.2-2, Sheet 11 of 39 was previously deleted, modify the title on Table 14-2.2 (Sheet 1 of 39) POWER ASCENSION TEST SUMMARIES INDEX to read "DELETED" rather than say "Spent Fuel Pool Cooling System." 3. For Table 14.2-2, Sheet 3 of 39, under TEST METHOD, revise the third sentence from "A minimum of two source range channels will be responding following the loading of the initial nucleus of eight assemblies." to reword to read as follows: "A minimum of two source range channels will be responding to source neutrons before additional assemblies are loaded. Then following the loading of the initial nucleus of eight assemblies near each of the two installed source range channels, each channel will be adequately responding to subcritical multiplication of additional assemblies loaded."	2-105-10

ENCLOSURE 1

WBN Unit 2 FSAR A105

"Summary Listing of A105 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
10. (cont.)	Section 14.2	4. For Table 14.2-2, Sheet 3 of 39: correct typographical error by adding space between "increased" and "(decrease)" at ACCEPTANCE CRITERIA. 5. For Table 14.2-2, Sheet 4 of 39, revise the sentence in the PREREQUISITES that now reads from: "The water level in the reactor vessel has been established." to "The water level in the reactor cavity has been established." 6. For Table 14.2-2, Sheet 9 of 39: revise TEST Method Description in the fifth sentence to read, "Testing will be performed under hot full flow conditions. In addition, add Note to say: "NOTE: Additional rod drops may be performed at either hot or cold RCS conditions with any RCS flow conditions. These drops are not used to satisfy acceptance criteria and their times are not included in calculating averages." 7. For Table 14.2-2, Sheet 15 of 39, revise PREREQUISITES 1 to read: "RCS flow measurement testing has been completed in Mode 3."	2-105-10
11.	Section 2.3 Section 7.7	1. On Pages 2.3-25 and 2.3-26 (A104), correct typographical errors in Table 2.3-1B header by changing "Surronding" to Surrounding" 2. On page 2.3-41 (A104), delete "98" from heading of Table 2.3-32. (By making this change in this section, this heading in the list of tables will be automatically changed) 3. On Page 7.7-20 (A104), correct typographical error by changing Section 7.7.1.11 heading from "Distribution Control System to "Distributed Control System." (By making this change in this section, this heading in the table of contents will be automatically changed.)	2-105-11
12.	Table 6.2.6-3	Delete valves ISV-41-586, ISV-41-589, ISV-41-592 and ISV-41-595 from FSAR Table 6.2.6-3 as shown on the attached FSAR mark-up.	2-105-12
13.	Section 9.2.2.4 Section 9.2.5.3	1. For Section 9.2.2.4, correct the typographical error in the second sentence of the first paragraph on FSAR page 9.2-19 (A104), as shown on the attached markup. 2. Clarify Section 9.2.5.3 to indicate the UHS has sufficient capacity to support bringing the non-accident unit to cold shutdown within 72 hours from entry into the Hot Standby mode.	2-105-13

ENCLOSURE 2

WBN Unit 2 FSAR A105
"Summary of Redacted Pages"

Chapter	Page(S)	Section No.	Figure No.	Basis For Redaction
1	1.2-15	1.2	1.2-1	Security Related, 10CFR2.390(d)(1)
1	1.2-16	1.2	1.2-2	Security Related, 10CFR2.390(d)(1)
1	1.2-17	1.2	1.2-3	Security Related, 10CFR2.390(d)(1)
1	1.2-18	1.2	1.2-4	Security Related, 10CFR2.390(d)(1)
1	1.2-19	1.2	1.2-5	Security Related, 10CFR2.390(d)(1)
1	1.2-20	1.2	1.2-6	Security Related, 10CFR2.390(d)(1)
1	1.2-21	1.2	1.2-7	Security Related, 10CFR2.390(d)(1)
1	1.2-22	1.2	1.2-8	Security Related, 10CFR2.390(d)(1)
1	1.2-23	1.2	1.2-9	Security Related, 10CFR2.390(d)(1)
1	1.2-24	1.2	1.2-10	Security Related, 10CFR2.390(d)(1)
1	1.2-25	1.2	1.2-11	Security Related, 10CFR2.390(d)(1)
1	1.2-26	1.2	1.2-12	Security Related, 10CFR2.390(d)(1)
1	1.2-27	1.2	1.2-13	Security Related, 10CFR2.390(d)(1)
1	1.2-28	1.2	1.2-14	Security Related, 10CFR2.390(d)(1)
1	1.2-29	1.2	1.2-15	Security Related, 10CFR2.390(d)(1)
2	2.2-7	2.2	2.2-1	Security Related, 10CFR2.390(d)(1)
2	2.2-8	2.2	2.2-2	Security Related, 10CFR2.390(d)(1)
2	2.4-89	2.4	2.4-2	Security Related, 10CFR2.390(d)(1)
2	2.4-159	2.4	2.4-24	Security Related, 10CFR2.390(d)(1)
2	2.4-162	2.4	2.4-27	Security Related, 10CFR2.390(d)(1)
2	2.4-163	2.4	2.4-28	Security Related, 10CFR2.390(d)(1)
2	2.4-168	2.4	2.4-40a Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-171	2.4	2.4-40b	Security Related, 10CFR2.390(d)(1)
2	2.4-172	2.4	2.4-40c	Security Related, 10CFR2.390(d)(1)
2	2.4-173	2.4	2.4-40d Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-178	2.4	2.4-40f Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-181	2.4	2.4-40g Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-206	2.4	2.4-76	Security Related, 10CFR2.390(d)(1)
2	2.4-209	2.4	2.4-79	Security Related, 10CFR2.390(d)(1)
2	2.4-212	2.4	2.4-82	Security Related, 10CFR2.390(d)(1)
2	2.4-213	2.4	2.4-83	Security Related, 10CFR2.390(d)(1)
2	2.4-218	2.4	2.4-88	Security Related, 10CFR2.390(d)(1)
2	2.4-219	2.4	2.4-89	Security Related, 10CFR2.390(d)(1)
2	2.4-220	2.4	2.4-90	Security Related, 10CFR2.390(d)(1)
2	2.5-471	2.5	2.5-185	Security Related, 10CFR2.390(d)(1)
2	2.5-472	2.5	2.5-185a	Security Related, 10CFR2.390(d)(1)
2	2.5-513	2.5	2.5-225	Security Related, 10CFR2.390(d)(1)
2	2.5-514	2.5	2.5-226	Security Related, 10CFR2.390(d)(1)
2	2.5-515	2.5	2.5-226a	Security Related, 10CFR2.390(d)(1)
2	2.5-575	2.5	2.5-273	Security Related, 10CFR2.390(d)(1)
2	2.5-690	2.5	2.5-358	Security Related, 10CFR2.390(d)(1)

ENCLOSURE 2

WBN Unit 2 FSAR A105
"Summary of Redacted Pages"

Chapter	Page(S)	Section No.	Figure No.	Basis For Redaction
2	2.5-934	2.5	2.5-592	Security Related, 10CFR2.390(d)(1)
3	3.5-53	3.5	3.5-3	Security Related, 10CFR2.390(d)(1)
3	3.5-54	3.5	3.5-4	Security Related, 10CFR2.390(d)(1)
3	3.6-73	3.6	3.6-21	Security Related, 10CFR2.390(d)(1)
3	3.6-74	3.6	3.6-22	Security Related, 10CFR2.390(d)(1)
3	3.6-75	3.6	3.6-23	Security Related, 10CFR2.390(d)(1)
3	3.6-76	3.6	3.6-24	Security Related, 10CFR2.390(d)(1)
3	3.7-217	3.7	3.7-39	Security Related, 10CFR2.390(d)(1)
3	3.7-218	3.7	3.7-40	Security Related, 10CFR2.390(d)(1)
3	3.7-219	3.7	3.7-41	Security Related, 10CFR2.390(d)(1)
3	3.7-222	3.7	3.7-44	Security Related, 10CFR2.390(d)(1)
3	3.8.3-60	3.8.3	3.8.3-6	Security Related, 10CFR2.390(d)(1)
3	3.8.3-61	3.8.3	3.8.3-7	Security Related, 10CFR2.390(d)(1)
3	3.8.4-94	3.8.4	3.8.4-2	Security Related, 10CFR2.390(d)(1)
3	3.8.4-95	3.8.4	3.8.4-3	Security Related, 10CFR2.390(d)(1)
3	3.8.4-96	3.8.4	3.8.4-4	Security Related, 10CFR2.390(d)(1)
3	3.8.4-97	3.8.4	3.8.4-5	Security Related, 10CFR2.390(d)(1)
3	3.8.4-98	3.8.4	3.8.4-6	Security Related, 10CFR2.390(d)(1)
3	3.8.4-101	3.8.4	3.8.4-9	Security Related, 10CFR2.390(d)(1)
3	3.8.4-109	3.8.4	3.8.4-17	Security Related, 10CFR2.390(d)(1)
3	3.8.4-110	3.8.4	3.8.4-18	Security Related, 10CFR2.390(d)(1)
3	3.8.4-111	3.8.4	3.8.4-19	Security Related, 10CFR2.390(d)(1)
3	3.8.4-112	3.8.4	3.8.4-20	Security Related, 10CFR2.390(d)(1)
3	3.8.4-116	3.8.4	3.8.4-24	Security Related, 10CFR2.390(d)(1)
3	3.8.4-120	3.8.4	3.8.4-28	Security Related, 10CFR2.390(d)(1)
3	3.8.4-127	3.8.4	3.8.4-35	Security Related, 10CFR2.390(d)(1)
3	3.8.4-128	3.8.4	3.8.4-36	Security Related, 10CFR2.390(d)(1)
3	3.8.4-129	3.8.4	3.8.4-36a	Security Related, 10CFR2.390(d)(1)
3	3.8.4-132	3.8.4	3.8.4-37	Security Related, 10CFR2.390(d)(1)
3	3.8.4-149	3.8.4	3.8.4-50	Security Related, 10CFR2.390(d)(1)
3	3.8.4-150	3.8.4	3.8.4-51	Security Related, 10CFR2.390(d)(1)
3	3.8.6-19	3.8.6	3.8.6-7	Security Related, 10CFR2.390(d)(1)
6	6.2.2-24	6.2.2	6.2.2-4	Security Related, 10CFR2.390(d)(1)
6	6.2.3-76	6.2.3	6.2.3-4	Security Related, 10CFR2.390(d)(1)
6	6.2.3-77	6.2.3	6.2.3-5	Security Related, 10CFR2.390(d)(1)
6	6.2.3-78	6.2.3	6.2.3-6	Security Related, 10CFR2.390(d)(1)
6	6.2.3-79	6.2.3	6.2.3-7	Security Related, 10CFR2.390(d)(1)
6	6.2.3-80	6.2.3	6.2.3-8	Security Related, 10CFR2.390(d)(1)
6	6.2.3-81	6.2.3	6.2.3-9	Security Related, 10CFR2.390(d)(1)
6	6.2.3-82	6.2.3	6.2.3-10	Security Related, 10CFR2.390(d)(1)
6	6.2.3-92	6.2.3	6.2.3-18	Security Related, 10CFR2.390(d)(1)
6	6.2.3-93	6.2.3	6.2.3-19	Security Related, 10CFR2.390(d)(1)
8	8.1-21	8.1	8.1-1	Security Related, 10CFR2.390(d)(1)
8	8.2-14	8.2	Text only	Security Related, 10CFR2.390(d)(1)
8	8.2-15	8.2	Text only	Security Related, 10CFR2.390(d)(1)

ENCLOSURE 2

WBN Unit 2 FSAR A105
"Summary of Redacted Pages"

Chapter	Page(S)	Section No.	Figure No.	Basis For Redaction
8	8.2-30	8.2	8.2-3	Security Related, 10CFR2.390(d)(1)
8	8.2-31	8.2	8.2-4	Security Related, 10CFR2.390(d)(1)
8	8.2-44	8.2	8.2-11	Security Related, 10CFR2.390(d)(1)
8	8.3-97	8.3	8.3-1	Security Related, 10CFR2.390(d)(1)
8	8.3-99	8.3	8.3-2	Security Related, 10CFR2.390(d)(1)
8	8.3-100	8.3	8.3-3	Security Related, 10CFR2.390(d)(1)
8	8.3-102	8.3	8.3-4b	Security Related, 10CFR2.390(d)(1)
8	8.3-205	8.3	8.3-46	Security Related, 10CFR2.390(d)(1)
8	8.3-218	8.3	8.3-59	Security Related, 10CFR2.390(d)(1)
9	9.2-211	9.2	9.2-40	Security Related, 10CFR2.390(d)(1)
9	9.4-276	9.4	9.4-21	Security Related, 10CFR2.390(d)(1)
9	9.4-280	9.4	9.4-22c	Security Related, 10CFR2.390(d)(1)
9	9.4-281	9.4	9.4-23	Security Related, 10CFR2.390(d)(1)
9	9.4-282	9.4	9.4-24	Security Related, 10CFR2.390(d)(1)
12	12.3-39	12.3	12.3-1	Security Related, 10CFR2.390(d)(1)
12	12.3-40	12.3	12.3-2	Security Related, 10CFR2.390(d)(1)
12	12.3-41	12.3	12.3-3	Security Related, 10CFR2.390(d)(1)
12	12.3-42	12.3	12.3-4	Security Related, 10CFR2.390(d)(1)
12	12.3-43	12.3	12.3-5	Security Related, 10CFR2.390(d)(1)
12	12.3-44	12.3	12.3-6	Security Related, 10CFR2.390(d)(1)
12	12.3-45	12.3	12.3-7	Security Related, 10CFR2.390(d)(1)
12	12.3-46	12.3	12.3-8	Security Related, 10CFR2.390(d)(1)
12	12.3-47	12.3	12.3-9	Security Related, 10CFR2.390(d)(1)
12	12.3-48	12.3	12.3-10	Security Related, 10CFR2.390(d)(1)
12	12.3-49	12.3	12.3-11	Security Related, 10CFR2.390(d)(1)
12	12.3-50	12.3	12.3-12	Security Related, 10CFR2.390(d)(1)
12	12.3-51	12.3	12.3-13	Security Related, 10CFR2.390(d)(1)
12	12.3-52	12.3	12.3-14	Security Related, 10CFR2.390(d)(1)
12	12.3-53	12.3	12.3-15	Security Related, 10CFR2.390(d)(1)
12	12.3-54	12.3	12.3-16	Security Related, 10CFR2.390(d)(1)
12	12.3-55	12.3	12.3-17	Security Related, 10CFR2.390(d)(1)
12	12.4-7	12.4	12.4-1	Security Related, 10CFR2.390(d)(1)

ENCLOSURE 3

WBN Unit 2 FSAR A105
"List Of Files And File Sizes
On The Security-Related OSM (OSM #1)"

ENCLOSURE 3
TVA Watts Bar Nuclear Plant Unit 2
FSAR Amendment 105 - List of Files on *Security-Related OSM*

File Name	File Size - Bytes
TVA_WBN-2_FSAR_Files	
001_TVA_WB_FSAR_TOC.pdf	362,108
002_TVA_WB_FSAR_LRP.pdf	88,451
003_TVA_WB_FSAR_Section_1.pdf	4,643,883
004_TVA_WB_FSAR_Section_2_A.pdf	10,467,163
005_TVA_WB_FSAR_Section_2_B_Part_1_of_2.pdf	44,606,435
005_TVA_WB_FSAR_Section_2_B_Part_2_of_2.pdf	49,572,114
006_TVA_WB_FSAR_Section_2_C.pdf	2,107,389
007_TVA_WB_FSAR_Section_2_D.pdf	31,323,839
008_TVA_WB_FSAR_Section_2_E.pdf	47,312,480
009_TVA_WB_FSAR_Section_3_A.pdf	2,622,917
010_TVA_WB_FSAR_Section_3_B.pdf	7,063,082
011_TVA_WB_FSAR_Section_3_C.pdf	30,016,094
012_TVA_WB_FSAR_Section_3_D.pdf	11,764,620
013_TVA_WB_FSAR_Section_4.pdf	10,713,352
014_TVA_WB_FSAR_Section_5.pdf	9,119,079
015_TVA_WB_FSAR_Section_6_A.pdf	26,047,923
016_TVA_WB_FSAR_Section_6_B.pdf	7,617,151
017_TVA_WB_FSAR_Section_7.pdf	13,195,628
018_TVA_WB_FSAR_Section_8.pdf	29,723,997
019_TVA_WB_FSAR_Section_9_A.pdf	24,536,294
020_TVA_WB_FSAR_Section_9_B.pdf	16,485,358
021_TVA_WB_FSAR_Section_10.pdf	13,430,648
022_TVA_WB_FSAR_Section_11.pdf	3,965,291
023_TVA_WB_FSAR_Section_12.pdf	5,994,207
024_TVA_WB_FSAR_Section_13.pdf	3,240,070
025_TVA_WB_FSAR_Section_14.pdf	1,170,286

ENCLOSURE 3
TVA Watts Bar Nuclear Plant Unit 2
FSAR Amendment 105 - List of Files on *Security-Related OSM*

File Name	File Size - Bytes
026_TVA_WB_FSAR_Section_15.pdf	
027_TVA_WB_FSAR_Section_16.pdf	
028_TVA_WB_FSAR_Section_17.pdf	
Total	**407,189,859**
TVA_WBN-2_Oversized_FSAR_Figures	
001_TVA_WB_FSAR_Figure_2.5_3.pdf	1,757,743
002_TVA_WB_FSAR_Figure_2.5_11.pdf	1,689,538
003_TVA_WB_FSAR_Figure_2.5_71.pdf	2,263,087
004_TVA_WB_FSAR_Figure_2.5_222.pdf	909,429
005_TVA_WB_FSAR_Figure_2.5_281_1.pdf	2,155,627
006_TVA_WB_FSAR_Figure_2.5_281_2.pdf	2,117,562
007_TVA_WB_FSAR_Figure_2.5_549_1.pdf	3,600,807
008_TVA_WB_FSAR_Figure_2.5_549_2.pdf	3,989,180
009_TVA_WB_FSAR_Figure_2.5_549_3.pdf	2,863,719
010_TVA_WB_FSAR_Figure_2.5_549_4.pdf	2,809,599
011_TVA_WB_FSAR_Figure_2.5_550.pdf	1,803,985
012_TVA_WB_FSAR_Figure_2.5_551.pdf	1,996,869
013_TVA_WB_FSAR_Figure_2.5_554_1.pdf	3,081,060
014_TVA_WB_FSAR_Figure_2.5_554_2.pdf	1,996,707
015_TVA_WB_FSAR_Figure_2.5_555.pdf	1,993,312
016_TVA_WB_FSAR_Figure_2.5_556.pdf	2,998,087
017_TVA_WB_FSAR_Figure_2.5_571_1.pdf	844,484
018_TVA_WB_FSAR_Figure_2.5_571_2.pdf	3,128,329
019_TVA_WB_FSAR_Figure_2.5_571_3.pdf	3,284,555
020_TVA_WB_FSAR_Figure_2.5_571_4.pdf	2,142,316
021_TVA_WB_FSAR_Figure_2.5_572.pdf	2,196,945

ENCLOSURE 3
TVA Watts Bar Nuclear Plant Unit 2
FSAR Amendment 105 - List of Files on *Security-Related OSM*

File Name	File Size - Bytes
022_TVA_WB_FSAR_Figure_2.5_573.pdf	2,013,286
023_TVA_WB_FSAR_Figure_2.5_576_1.pdf	3,238,525
024_TVA_WB_FSAR_Figure_2.5_576_2.pdf	2,151,750
025_TVA_WB_FSAR_Figure_2.5_577.pdf	2,207,622
026_TVA_WB_FSAR_Figure_2.5_578.pdf	2,080,032
027_TVA_WB_FSAR_Figure_2.5_579.pdf	2,308,985
028_TVA_WB_FSAR_Figure_2.5_583.pdf	2,487,346
029_TVA_WB_FSAR_Figure_2.5_588.pdf	2,528,515
030_TVA_WB_FSAR_Figure_2.5_589.pdf	2,480,438
031_TVA_WB_FSAR_Figure_2.5_594.pdf	13,054,127
032_TVA_WB_FSAR_Figure_2.5_595.pdf	2,323,267
033_TVA_WB_FSAR_Figure_2.5_596.pdf	5,732,107
034_TVA_WB_FSAR_Figure_2.5_597.pdf	1,287,336
035_TVA_WB_FSAR_Figure_2.5_602.pdf	5,549,537
036_TVA_WB_FSAR_Figure_2.5_603.pdf	4,830,835
037_TVA_WB_FSAR_Figure_2.5_604.pdf	6,392,279
038_TVA_WB_FSAR_Figure_2.5_605.pdf	20,823,108
Total	**131,112,035**
TVA_WBN-2_Oversized_FSAR_Table	
001_TVA_WB_FSAR_Table_6.2.4-1.pdf	1,215,573
Total	**1,215,573**

ENCLOSURE 4

WBN Unit 2 FSAR A105
"List Of Files And File Sizes On The Publicly Available OSM (OSM #2)"

ENCLOSURE 4
TVA Watts Bar Nuclear Plant Unit 2
FSAR Amendment 105 List of Files on *Publicly Available OSM*

File Name	File Size - Bytes
TVA_WBN-2_FSAR_Files	
001_TVA_WB_FSAR_TOC.pdf	362,108
002_TVA_WB_FSAR_LRP.pdf	88,451
003_TVA_WB_FSAR_Section_1.pdf	***837,309***
004_TVA_WB_FSAR_Section_2_A.pdf	***10,130,617***
005_TVA_WB_FSAR_Section_2_B_Part_1_of_2.pdf	***34,359,034***
005_TVA_WB_FSAR_Section_2_B_Part_2_of_2.pdf	***43,314,021***
006_TVA_WB_FSAR_Section_2_C.pdf	2,107,389
007_TVA_WB_FSAR_Section_2_D.pdf	31,323,839
008_TVA_WB_FSAR_Section_2_E.pdf	***45,933,088***
009_TVA_WB_FSAR_Section_3_A.pdf	***2,331,495***
010_TVA_WB_FSAR_Section_3_B.pdf	***5,661,310***
011_TVA_WB_FSAR_Section_3_C.pdf	***25,183,693***
012_TVA_WB_FSAR_Section_3_D.pdf	***11,495,906***
013_TVA_WB_FSAR_Section_4.pdf	10,713,352
014_TVA_WB_FSAR_Section_5.pdf	9,119,079
015_TVA_WB_FSAR_Section_6_A.pdf	***23,167,481***
016_TVA_WB_FSAR_Section_6_B.pdf	7,617,151
017_TVA_WB_FSAR_Section_7.pdf	13,195,628
018_TVA_WB_FSAR_Section_8.pdf	***26,763,889***
019_TVA_WB_FSAR_Section_9_A.pdf	***24,275,275***
020_TVA_WB_FSAR_Section_9_B.pdf	***15,270,859***
021_TVA_WB_FSAR_Section_10.pdf	13,430,648
022_TVA_WB_FSAR_Section_11.pdf	3,965,291
023_TVA_WB_FSAR_Section_12.pdf	***1,726,180***
024_TVA_WB_FSAR_Section_13.pdf	3,240,070
025_TVA_WB_FSAR_Section_14.pdf	1,170,286

Note: Byte amounts in italics are redacted files.

ENCLOSURE 4
TVA Watts Bar Nuclear Plant Unit 2
FSAR Amendment 105 List of Files on *Publicly Available OSM*

File Name	File Size - Bytes
026_TVA_WB_FSAR_Section_15.pdf	46,591,104
027_TVA_WB_FSAR_Section_16.pdf	148,383
028_TVA_WB_FSAR_Section_17.pdf	145,004
Total	**413,667,940**
TVA_WBN-2_Oversized_FSAR_Figures	
001_TVA_WB_FSAR_Figure_2.5_3.pdf	1,757,743
002_TVA_WB_FSAR_Figure_2.5_11.pdf	1,689,538
003_TVA_WB_FSAR_Figure_2.5_71.pdf	2,263,087
004_TVA_WB_FSAR_Figure_2.5_222.pdf	909,429
005_TVA_WB_FSAR_Figure_2.5_281_1.pdf	2,155,627
006_TVA_WB_FSAR_Figure_2.5_281_2.pdf	2,117,562
007_TVA_WB_FSAR_Figure_2.5_549_1.pdf	3,600,807
008_TVA_WB_FSAR_Figure_2.5_549_2.pdf	3,989,180
009_TVA_WB_FSAR_Figure_2.5_549_3.pdf	2,863,719
010_TVA_WB_FSAR_Figure_2.5_549_4.pdf	2,809,599
011_TVA_WB_FSAR_Figure_2.5_550.pdf	1,803,985
012_TVA_WB_FSAR_Figure_2.5_551.pdf	1,996,869
013_TVA_WB_FSAR_Figure_2.5_554_1.pdf	3,081,060
014_TVA_WB_FSAR_Figure_2.5_554_2.pdf	1,996,707
015_TVA_WB_FSAR_Figure_2.5_555.pdf	1,993,312
016_TVA_WB_FSAR_Figure_2.5_556.pdf	2,998,087
017_TVA_WB_FSAR_Figure_2.5_571_1.pdf	844,484
018_TVA_WB_FSAR_Figure_2.5_571_2.pdf	3,128,329
019_TVA_WB_FSAR_Figure_2.5_571_3.pdf	3,284,555
020_TVA_WB_FSAR_Figure_2.5_571_4.pdf	2,142,316
021_TVA_WB_FSAR_Figure_2.5_572.pdf	2,196,945

Note: Byte amounts in italics are redacted files.

ENCLOSURE 4
TVA Watts Bar Nuclear Plant Unit 2
FSAR Amendment 105 List of Files on *Publicly Available OSM*

File Name	File Size - Bytes
022_TVA_WB_FSAR_Figure_2.5_573.pdf	2,013,286
023_TVA_WB_FSAR_Figure_2.5_576_1.pdf	3,238,525
024_TVA_WB_FSAR_Figure_2.5_576_2.pdf	2,151,750
025_TVA_WB_FSAR_Figure_2.5_577.pdf	2,207,622
026_TVA_WB_FSAR_Figure_2.5_578.pdf	2,080,032
027_TVA_WB_FSAR_Figure_2.5_579.pdf	2,308,985
028_TVA_WB_FSAR_Figure_2.5_583.pdf	2,487,346
029_TVA_WB_FSAR_Figure_2.5_588.pdf	2,528,515
030_TVA_WB_FSAR_Figure_2.5_589.pdf	2,480,438
031_TVA_WB_FSAR_Figure_2.5_594.pdf	13,054,127
032_TVA_WB_FSAR_Figure_2.5_595.pdf	2,323,267
033_TVA_WB_FSAR_Figure_2.5_596.pdf	5,732,107
034_TVA_WB_FSAR_Figure_2.5_597.pdf	1,287,336
035_TVA_WB_FSAR_Figure_2.5_602.pdf	5,549,537
036_TVA_WB_FSAR_Figure_2.5_603.pdf	4,830,835
037_TVA_WB_FSAR_Figure_2.5_604.pdf	6,392,279
038_TVA_WB_FSAR_Figure_2.5_605.pdf	20,823,108
Total	**131,112,035**
TVA_WBN-2_Oversized_FSAR_Table	
001_TVA_WB_FSAR_Table_6.2.4-1.pdf	1,215,573
Total	1,215,573

Note: Byte amounts in italics are redacted files.

ENCLOSURE 5

Deviation Request from Regulatory Guide 1.68, Revision 2

Background

In 1985, as documented in Reference 1, TVA formally requested an exemption from cold no-flow, cold full-flow, and hot no-flow rod drop testing for WBN Unit 1. The NRC reviewed and approved this request as shown in the following excerpt from Supplemental Safety Evaluation Report (SSER) 5 (Reference 3 below):

> "**Cold No-Flow, Cold Full-Flow, and Hot No-Flow Rod Drop Testing**
>
> By letter dated February 13, 1985, the applicant requested a deviation from RG 1.68, Revision 2, which would allow the removal of rod drop timing tests at cold no-flow, cold full-flow, and hot no-flow conditions from the Watts Bar Initial Test Program. In support of this request, the applicant stated that scram capability is only required for the hot full-flow conditions by the Watts Bar Technical Specifications, except when exempted by Special Test Exemption 3.10.4. The staff has reviewed the February 13, 1985, submittal, concurs with its contents, and finds the deviation acceptable on the basis of the following:
>
> (1) There is nothing new or unique in the design of the Watts Bar control rod system.
>
> (2) Scram capability is only required for hot full-flow conditions.
>
> (3) The deviation is consistent with a similar one allowed for the Initial Test Program at the Callaway Nuclear Plant, Unit 1.
>
> Therefore, the staff approves the deviation and has determined that the applicant does not have to perform cold no-flow, cold full-flow, and hot no-flow rod drop testing at the Watts Bar Nuclear Plant, Unit 1."

As a result of NRC approval, TVA subsequently submitted FSAR Amendment 56 (Reference 2 below) to incorporate this deviation into Chapter 14, "Initial Test Program." In 2007, in the initial phases of Unit 2 completion, as stated in Reference 4, TVA initially did not intend to request a similar deviation for WBN Unit 2 for this item. However, based upon further review of the request granted for Unit 1, TVA has determined that it would pursue this request for Unit 2.

Justification for Request

The Unit 1 justification for this request was provided in February 13, 1985 letter (Reference 1 below). Provided in the following is a point-by-point discussion of the Unit 1 justifications as documented in Reference 1 and their applicability to Unit 2:

Justification 1:

> "Regulatory Guide 1.68, Revision 2, Appendix A, section 2.b, states 'To the extent practical, testing should demonstrate control rod scram times. . .as required to bound conditions under which scram might be required.' It is our position that hot full-flow rod drop testing fully meets these conditions of the Regulatory Guide."

Unit 2 Applicability: TVA's position remains unchanged and also applies to Unit 2.

Justification 2:

"Scram capability is required whenever the reactor is critical, i.e., Modes 1 and 2. Watts Bar TS 3.1.1.4 requires the reactor coolant system operating loop temperature (T_{AVG}) to be greater than or equal to 551°F in Modes 1 and 2. Specification 3.4.1.1 requires that all reactor coolant loops be in operation in Modes 1 and 2 except when exempted by Special Test Exemption 3.10.4. From these two specifications, it can be seen that hot full-flow rod drop testing would bound the conditions present for a critical reactor (Modes 1 and 2)."

Unit 2 Applicability: The operating loop temperature, Tavg for Unit 2, will be the same as for Unit 1, with the Original Steam Generators (OSG), as required by LCO 3.4.2, "RCS Minimum Temperature for Criticality." Condition A of LCO 3.4.2 requires the unit to be placed into Mode 3 if Tavg, in one or more RCS loops, is not within limit. Therefore, the hot full-flow rod drop testing would also bound the Unit 2 conditions present for a critical reactor in Modes 1 and 2.

Justification 3:

"Scram capability is also required in the event of an uncontrolled rod cluster control assembly bank withdrawal from a subcritical condition. As discussed in the Watts Bar FSAR Section 15.2.1.2, hot zero power conditions (Mode 2) are the most conservative for this event. Thus, this transient condition is bounded by hot, full-flow rod drop testing conditions."

Unit 2 Applicability: This position remains unchanged and also applies to Unit 2.

Justification 4:

"Additional justification for exemption from hot, no-flow rod drop testing is obtained from the analysis rod drop test data for Sequoyah Unit 2 (provided in Reference 1). The rod drop times indicate that in all cases the hot, full-flow rod drop times were longer (more conservative) than the hot, no-flow rod drop times."

Unit 2 Applicability: This position remains unchanged and also applies to WBN Unit 2.

Justification 5:

"Exemption from cold, no-flow, cold, full-flow, and hot, no-flow rod drop testing would be economically beneficial to Watts Bar. As each rod drop test requires at least one shift to complete, a significant amount of critical path work would be eliminated from the plant startup schedule. This is allowed by the requirements of Regulatory Guide 1.68, Revision 2, which requires testing 'To the extent practical. . . .' TVA does not believe it obtains a practical benefit from the performance of these rod drop tests, as the hot full-flow rod drop test bounds the conditions necessary for scram capability. Consequently, TVA believes that exemption from all but hot, full-flow rod drop testing will still meet the requirements of Regulatory Guide 1.68, Revision 2. The Watts Bar TS and FSAR ensure that the conditions requiring scram are bounded by hot, full-flow rod drop testing conditions."

Unit 2 Applicability: This position remains unchanged and also applies to Unit 2.

Conclusion:

Therefore, based on the evaluation above, TVA requests the same deviation for Unit 2 as was approved for Unit 1 from the cold no-flow, cold full-flow, and hot no-flow rod drop testing requirements of Regulatory Guide 1.68, Revision 2.

References

1. TVA letter to NRC dated February 13, 1985, "Deviation Request" (ML073511898)

2. TVA letter to NRC dated April 30, 1985, "Deviation Request - FSAR Revision 56" (ML072890492)

3. NRC Supplemental Safety Evaluation Report (SSER) 5 dated November 1, 1990 (ML073520360)

4. TVA letter to NRC dated October 11, 2007, "Watts Bar Nuclear Plant (WBN) - Unit 2 - Exemptions, Reliefs, Deviations and Exceptions" (ML072910331)