Westinghouse Electric Corporation **Energy Systems**

Nuclear Services Division

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Pittsburgh Pennsylvania 15230-0355

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

CAW-97-1147

July 25, 1997

Attention: Mr. Samuel L. Collins

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: "Responses to NRC Questions on WCAP-14738 and WCAP-12096, Revision 7", (Proprietary)

Dear Mr. Collins:

The proprietary information for which withholding is being requested in the above referenced report is further identified in Affidavit CAW-97-1147 signed by the owner of the proprietary information, Westinghouse Electric Corporation. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.790 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by Tennessee Valley Authority.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-97-1147, and should be addressed to the undersigned.

Very truly yours,

N.J. Liparulo, Manager
Equipment Design and Regulatory Engineering

JJD:bbp

cc: Kevin Bohrer/NRC (12H5)

Esi439L:07/25/97:CAW1147

CAW-97-1147

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared Nicholas J. Liparulo, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Corporation ("Westinghouse") and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

Nicholas J. Liparulo, Manager
Equipment Design and Regulatory Engineering

Sworn to and subscribed
before me this 28th day
of July, 1997

Notary Public

Notarial Seal
Janet A. Schwab, Notary Public
Monroeville Boro, Allegheny County
My Commission Expires May 22, 2000
Member, Pennsylvania Association of Notaries

2502C-JWF-1:072897

(1) I am Manager, Equipment Design and Regulatory Engineering, in the Nuclear Services Division, of the Westinghouse Electric Corporation and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rulemaking proceedings, and am authorized to apply for its withholding on behalf of the Westinghouse Energy Systems Business Unit.

(2) I am making this Affidavit in conformance with the provisions of 10CFR Section 2.790 of the Commission's regulations and in conjunction with the Westinghouse application for withholding accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by the Westinghouse Energy Systems Business Unit in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information which is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10CFR Section 2.790, it is to be received in confidence by the Commission.

(iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in Attachment A of Westinghouse letter WAT-D-10408, "Responses to NRC Questions on WCAP-14738 and WCAP-12096 Revision 7," (Proprietary), for the Tennessee Valley Authority being transmitted by Tennessee Valley Authority letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk, Attention Mr. Samuel L. Collins.

The proprietary information as submitted for use by the Tennessee Valley Authority is expected to be applicable in other submittals for related license amendment packages.

This information is part of that which will enable Westinghouse to:

(a) Provide uncertainty information for protection system setpoints for related license amendments.

(b) Establish applicable codes and standards which are to be applied to the process.

(c) Assist the customer to obtain NRC approval.

Further this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the use of similar information to its customers for purposes of meeting NRC requirements for licensing documentation.

(b) Westinghouse can sell support and defense of the technology to its customers in the licensing process.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort,

having the requisite talent and experience, would have to be expended for developing testing and analytical methods and performing tests.

Further the deponent sayeth not.

Copyright Notice

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.790 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

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Proprietary Information Notice

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.790 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) contained within parentheses located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.790(b)(1).

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ENCLOSURE 2
[NON-PROPRIETARY]

RESPONSES TO NRC QUESTIONS ON WCAP-14738 AND WCAP-12096, REVISION 7

NRC Question 1:

Page 9 of the RTDP states that a total pressurizer pressure uncertainty of [ ]$^{+a,c}$ is calculated, which is bounded by the RTDP analysis. Assuming a normal, two sided probability distribution results in a standard deviation of [ ]$^{+a,c}$." Is this standard deviation correct for the range of uncertainty listed?

Response to Question 1:

The standard deviation [ ]$^{+a,c}$ is correct for the range of uncertainties listed and is based on the random component of the instrument channel uncertainty (see WCAP-14738, Table 1, p.10). Two biases are associated with the Barton 763 transmitters and are included in the uncertainty analysis to obtain the total pressurizer uncertainty range [ ]$^{+a,c}$. One bias is for long term drift (4.3% span) and the other bias is for temperature compensation (0.19% span).

NRC Question 2:

Page 17 of the RTDP states that it is assumed for this uncertainty analysis that the reactor coolant system (RCS) flow measurement is performed at 90% of rated thermal power and within (6) months of the hot leg and cold leg resistance temperature detector (RTD) calibrations. It is the staff's understanding that the RCS flow measurement is to be performed at the beginning of each cycle. Please provide the uncertainty allowances and effects included in the calorimetric flow uncertainty to accommodate the above 6 month allowance. The RCS flow measurement discussion also does not mention the monthly RCS flow measurement or the RCS flow measurement every shift.

Response to Question 2:

The 6-month allowance between the hot and cold leg RTD calibrations and the performance of the calorimetric RCS flow measurement was used for fuel Cycle 1 to accommodate the power ascension testing program. The 6-month allowance has been preserved in the RTDP Uncertainty Report (WCAP-14738) for Cycle 2 and beyond for conservatism and to enhance the uncertainty margin. The calorimetric RCS flow measurement will be performed at the beginning of the fuel cycle (within 24 hours after reaching 90% of Rated Thermal Power) for Cycle 2 and beyond in accordance with Technical Specification SR 3.4.1.4.

The sensor drift (SD) uncertainties listed on Table 3 (page 27 of WCAP-14738) account for a 6-month interval between the hot and cold leg RTD calibrations and the performance of the calorimetric RCS flow measurement at 90% of Rated Thermal Power. Either installed plant

instrumentation or special test equipment is used for the required measurements. Plant instrumentation is calibrated in a manner consistent with the assumptions used in the RTDP calculations. The special test equipment is calibrated through normal calibration intervals prior to performing the calorimetric RCS flow measurement.

The monthly and once-per-shift RCS flow measurements are performed using the loop RCS flow indicators that are normalized to the calorimetric RCS flow measurement at the beginning of each fuel cycle. The uncertainty analysis for the loop RCS flow indicators is discussed on page 37 of WCAP-14738.

NRC Question 3:

Confirm that WCAP 14738, as submitted with the March 27, 1997 application, will be documented in the Watts Bar Final Safety Analysis Report (FSAR)?

Response to Question 3:

TVA will reference WCAP-11397-P-A in the FSAR. This WCAP contains the generic methodology for the RTDP Program that was approved by the NRC.

NRC Question 4:

The RTDP references leading edge flow meter (LEFM) ultrasonic monitoring instrumentation that is used to determine the extent of feedwater fouling. Is this device permanently installed? What criteria does this instrumentation share with the feedwater instrumentation with respect to the safety analysis? This is instrumentation that apparently can replace the feedwater venturi in the determination of feedwater flow. What are the calibration requirements or surveillance requirements for this instrumentation to maintain the uncertainty assumptions listed? Is the meter individually calibrated (lab) or are generic manufacturer's values assumed? Why is this measurement at 100% RTP when other measurements are at 90% rated thermal power (RTP)?

Response to Question 4:

The Leading Edge Flow Meter (LEFM) is permanently installed on the feedwater header and is used to correct the loop feedwater flow measurements for feedwater fouling. It is not required to perform the daily calorimetric power measurement for Technical Specification compliance. It does not replace the loop feedwater flow measurements used in the daily calorimetric power measurement. It is primarily used for economic considerations since feedwater fouling results in an indicated feedwater flow measurement that is higher than the actual flow. The use of the LEFM to determine fouling is controlled by an approved site instruction that verifies LEFM parameters are within the required range prior to use. The specific criteria is documented in the LEFM uncertainty analysis provided by the vendor. A software quality assurance plan controls the software associated with the LEFM.

The calorimetric power measurement uncertainty analysis is performed at the maximum power level (100% of Rated Thermal Power), representing normal plant operation. The calorimetric RCS flow measurement uncertainty analysis is performed at 90% of Rated Thermal Power since the calorimetric RCS flow measurement will be performed prior to full power operation. This will assure the minimum Technical Specification RCS flow requirement prior to full power operation.

NRC Question 5:

Page 1 of the RTDP introduction states that RCS flow is monitored by the performance of a secondary side heat balance or calorimetric measurement after every refueling to comply with the Watts Bar Technical Specifications. Currently, Watts Bar is on an 18-month refueling cycle. The statement does not address the time of performance, i.e., at the beginning of the cycle. It is noted that the RTDP does not provide an allowance for feedwater venturi fouling. Please state limitations regarding when the calorimetric will be performed during the fuel cycle.

Response to Question 5:

The calorimetric RCS flow measurement at Watts Bar will be performed at the beginning of each fuel cycle (after reaching 90% of Rated Thermal Power, as discussed in the Response to Question 2) to verify the minimum Technical Specification RCS flow requirement, and to normalize the loop RCS flow indicators. Because feedwater fouling will result in a non-conservative calorimetric RCS flow measurement, a feedwater fouling penalty of 0.1% RCS flow is included in the Watts Bar Technical Specification RCS flow limit. In addition, the site procedure used for determining venturi fouling requires that the venturi be chemically cleaned during the next refueling outage if fouling is identified.

NRC Question 6:

Page 1 of the RTDP states that the normalization of the installed loop RCS flow indicators to the RCS calorimetric is performed after every refueling. What time limitation is to be specified for this?

Response to Question 6:

The loop RCS flow indicators are normalized to the calorimetric RCS flow measurement that is performed at 90% of Rated Thermal Power, or above. There is no specific time limit to perform the identified normalization. Watts Bar normalizes the loop RCS flow indicators as soon as reasonably possible to comply with the once-per-shift Technical Specification RCS flow surveillance. Time limits, if present, would be dictated by any applicable Technical Specification operability requirements.

NRC Question 7:

Page 3 of the RTDP notes that for the uncertainties for parameter indication that SCA, SMTE, and SD (Equations 1, 2, 3, and 4) are not considered dependent. This does not appear to be consistent with the assumptions of the Watts Bar setpoint methodology. Please comment.

Response to Question 7:

The NRC safety evaluation for the RTDP methodology (WCAP-11397-P-A) requires an uncertainty analysis with a 95% probability and a 95% confidence level. For the Watts Bar Protection System Setpoint Methodology (WCAP-12096), Regulatory Guide 1.105, Revision 2, specifies a 95% probability requirement only, which is the current licensing basis for the Protection System Setpoint Methodology. WCAP-12096 Revision 7 was prepared to be consistent with this existing licensing basis.

The RTDP Uncertainty Report (WCAP-14738) is based on an uncertainty algorithm that is specific to Watts Bar, and consistent with the Westinghouse paper "The Significance of Verifying the SAMA PMC 20.1-1973 Defined Reference Accuracy for the Westinghouse Setpoint Methodology," Instrumentation, Controls, and Automation in the Power Industry, Vol.35, pp.497-508, June 1992. This uncertainty algorithm satisfies the 95/95 requirement of the RTDP safety evaluation, and is more conservative than the current Watts Bar licensing basis uncertainty analysis. Please see Page 3 of WCAP-14738 for a description of the CSA algorithm for the RTDP study and Page 3 of WCAP-12096, Revision 7, for a description of the CSA algorithm used in the setpoint study. The RTDP CSA algorithm is more conservative due to the difference in the algebraic manipulation of the uncertainty terms.

NRC Question 8:

Page 49 of the RTDP, item 4, states that a fouling factor will be assigned an addressable constant in the P2500 computer. Is this constant updated? Does the fouling factor remain constant? What is the instrument uncertainty assumed for the feedwater flow measurement using venturi? Is there uncertainty to the fouling factor?

Response to Question 8:

The fouling factor in the P2500 computer (point no. K0471) is updated based on the performance of a site procedure that determines the amount of venturi fouling based on the difference in venturi flow and LEFM flow. This site procedure is initiated when periodic monitoring of plant thermal performance indicates fouling is occurring. The fouling factor is set to 1.0 initially and anytime power is reduced below 25%. There is no uncertainty related to K0471 since it is manually input and is bounded by the venturi and LEFM uncertainty analysis.

The feedwater flow uncertainty for the power measurement is shown on Table 9 of WCAP-14738 (for the P2500 computer) and on Table 13 of WCAP-14738 (for the Control Board Indication when the P2500 computer is unavailable). In either measurement, feedwater fouling results in a more conservative calorimetric power measurement.

NRC Question 9:

Page 57 of the RTDP, first paragraph, references that the LEFM may replace venturi flow measurement. The second paragraph states that the uncertainty is partially based on a reference H. Where is the reference H listed in the document?

Response to Question 9:

H is a reference to the heat rate at full power (see page 41 of WCAP-14738).

NRC Question 10:

WCAP-12096, page 20, states that the Westinghouse setpoint methodology results in a value with a 95% probability. Regulatory Guide (RG) 1.105 Rev 2, 1986, Discussion, states that the NRC staff has accepted a 95% probability for errors. The RG states "That is, of the observed distribution of values for a particular error component in the empirical data base, 95% of the data points will be bounded by the values selected. If the data base follows a normal distribution, this corresponds to an error distribution approximately equal to a 2 sigma value." The WCAP is not clear as to what 95% (point estimate, confidence intervals, or tolerance intervals) represents, thus it is not clear whether the WCAP is consistent with the RG. Please comment.

Response to Question 10:

WCAP-12096, Revision 7 is consistent with RG 1.105, Revision 2, 1986, and with the current Watts Bar licensing basis (95% probability with a high confidence level). A statistical evaluation of the Watts Bar calibration and drift data for transmitters and process rack modules was not performed for the values used in WCAP-12096, Revision 7. The uncertainty analysis is based on vendor data and Watts Bar calibration procedure limits. The channel statistical allowances (CSA) presented in WCAP-12096, Revision 7, are treated as confidence intervals.

NRC Question 11:

Will the TS Bases and FSAR be revised to reflect the latest revision of WCAP-12096?

Response to Question 11:

Yes. This reference will be incorporated into the FSAR. Proposed revised pages for the WBN Technical Specification Bases are provided in the Attachment to this enclosure.

NRC Question 12:

In WCAP-12096 the uncertainties for both Over temperature Delta T and Overpower Delta T list a [T'-Tref] mismatch uncertainty term. Explain the use of this uncertainty. Additionally, both T and T' are not discussed or defined in Tables 3-22 or 3-23. Please comment.

Response to Question 12:

[

]$^{+a,c}$

NRC Question 13:

In TVA letter dated March 27, 1997, page E1-10, the third paragraph states that the OTDeltaT and OPDeltaT do not require a change to these setpoints. However, on page E1-9, first paragraph, it is stated that the OTdeltaT and OPDeltaT setpoints were enhanced to increase operating margin. Page E1-10, second paragraph, states that the allowable value for OTDeltaT and OPDeltaT have been modified. This paragraph states in part "...the reduced TDF of 93100 gpm and the revised OTDeltaT and OPDeltaT setpoints." Page E1-16, fourth paragraph, also mentions revised OTDeltaT and OPDeltaT setpoints. E1-54, Section J, first paragraph, also references setpoint changes. Please comment.

Response to Question 13:

The referenced text appears in the 'Introduction' part of the evaluation. The intent of the 'Introduction' is, in part, to summarize how the proposed plant modifications lead to the proposed changes to the OTΔT and OPΔT protection functions. The 'Evaluation' part of the 10 CFR 50.92 evaluation contains a more detailed discussion of the impact that the plant modifications and changes to the OTΔT and OPΔT protection functions have on the plant safety analyses and concludes that there are no significant hazards.

The following information is provided to help clarify the discussion in the 'Introduction'. This information does not alter any of the conclusions or supporting logic contained in the 10 CFR 50.92 evaluation.

The 10 CFR 50.92 evaluation proposes changes to the trip setpoints (i.e.- gains and time constants) and the allowable values for the OTΔT

and OPΔT protection functions. In general, there are three plant modifications that have required these OTΔT and OPΔT changes. One modification is a reduction in the thermal design flow from 97,500 to 93,100 gpm. This modification required a change to the core limits. As a result, it was necessary to redefine the OTΔT and OPΔT setpoints to protect these core limits. Another 'modification' was to optimize the OTΔT and OPΔT setpoints to maximize the operating margin between the expected plant operating conditions and the trip setpoints, while still protecting the core limits. A third modification involves tolerances for [

]$^{+a,c}$ All three of these modifications were considered in the calculation of the setpoints and allowable values for the OTΔT and OPΔT protection functions.

Changes to the OTΔT and OPΔT setpoints are depicted on WBN Technical Specification marked-up pages 3.3-21 and 3.3-22, provided in TVA's proposed license amendment for TS Change No. 96-013, dated March 27, 1997.

ATTACHMENT

PROPOSED REVISIONS TO WBN TECHNICAL SPECIFICATION BASES
(Refer to NRC Question 11)

B 3.3-63
B 3.3-120

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.15 (continued)

SR 3.3.1.15 is modified by a Note stating that neutron detectors are excluded from RTS RESPONSE TIME testing. This Note is necessary because of the difficulty in generating an appropriate detector input signal. Excluding the detectors is acceptable because the principles of detector operation ensure a virtually instantaneous response.

REFERENCES

1. Watts Bar FSAR, Section 6.0, "Engineered Safety Features."

2. Watts Bar FSAR, Section 7.0, "Instrumentation and Controls."

3. Watts Bar FSAR, Section 15.0, "Accident Analysis."

4. Institute of Electrical and Electronic Engineers, IEEE-279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations," April 5, 1972.

5. 10 CFR Part 50.49, "Environmental Qualifications of Electric Equipment Important to Safety for Nuclear Power Plants."

6. WCAP-12096, Rev. ~~6~~ 7, "Westinghouse Setpoint Methodology for Protection System, Watts Bar 1 and 2," ~~May 1994~~ March 1997.

7. WCAP-10271-P-A, Supplement 1, and Supplement 2, Rev. 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," May 1986 and June 1990.

8. Watts Bar Technical Requirements Manual, Section 3.3.1, "Reactor Trip System Response Times."

9. Evaluation of the applicability of WCAP-10271-P-A, Supplement 1, and Supplement 2, Revision 1, to Watts Bar.

10. ISA-DS-67.04, 1982, "Setpoint for Nuclear Safety Related Instrumentation Used in Nuclear Power Plants."

BASES

REFERENCES (continued)

6. WCAP-12096, Rev. 6, "Westinghouse Setpoint Methodology for Protection System, Watts Bar 1 and 2," ~~May 1994~~ March PDT.

7. WCAP-10271-P-A, Supplement 1 and Supplement 2, Rev. 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and "Evaluation of Surveillance Frequencies and Out of Service Times for the Engineered Safety Features Actuation System." May 1986 and June 1990.

8. Watts Bar Technical Requirements Manual, Section 3.3.2, "Engineered Safety Feature Response Times."

9. TVA Letter to NRC, November 9, 1984, "Request for Exemption of Quarterly Slave Relay Testing, (L44 841109 808)."

10. Evaluation of the applicability of WCAP-10271-P-A, Supplement 1, and Supplement 2, Revision 1, to Watts Bar.

11. Westinghouse letter to TVA (WAT-D-8347), September 25, 1990, "Charging/Letdown Isolation Transients" (T33 911231 810).

12. Design Change Notice W-38238 associated documentation.

Enclosure 4

List of Commitments

1. TVA will reference WCAP-11397-P-A in the FSAR.

2. The FSAR will be revised to reflect the latest revision of WCAP-12096.

PROP

PROPRIETARY INFORMATION

NOTICE

THE ATTACHED DOCUMENT CONTAINS OR IS CLAIMED TO CONTAIN PROPRIETARY INFORMATION AND SHOULD BE HANDLED AS NRC SENSITIVE UNCLASSIFIED INFORMATION. IT SHOULD NOT BE DISCUSSED OR MADE AVAILABLE TO ANY PERSON NOT REQUIRING SUCH INFORMATION IN THE CONDUCT OF OFFICIAL BUSINESS AND SHOULD BE STORED, TRANSFERRED, AND DISPOSED OF BY EACH RECIPIENT IN A MANNER WHICH WILL ASSURE THAT ITS CONTENTS ARE NOT MADE AVAILABLE TO UNAUTHORIZED PERSONS.

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