


Attachment 17

**Westinghouse Electric Company 420A90-NP, Revision 2,
"WINCISE Functional Specification for Watts Bar Unit 2" (Non-Proprietary)**

 <p style="font-size: 24pt; font-weight: bold; margin-top: 10px;">Nuclear Services</p> <p>COVER SHEET FOR:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> FUNCTIONAL SPECIFICATION <input type="checkbox"/> QUALIFICATION PROCEDURE <input type="checkbox"/> TEST PROCEDURE <input type="checkbox"/> USER'S MANUAL <input type="checkbox"/> TRAINING DOCUMENT <input type="checkbox"/> EQUIPMENT TRANSFER DOCUMENT <input type="checkbox"/> OTHER 	<p>DOCUMENT NUMBER & REV: 420A90-NP Rev 2</p> <hr/> <p>TITLE: WINCISE Functional Specification for Watts Bar Unit 2</p> <hr/> <p>PLANT SITE/PLANT ALPHA: WBT</p> <hr/> <p>KEY WORDS: WINCISE, Watts Bar, WBT, Incore, Detector</p>		
<p>WESTINGHOUSE ELECTRIC COMPANY LLC 1000 WESTINGHOUSE DRIVE CRANBERRY TOWNSHIP, PENNSYLVANIA 16066</p>			
<p>The procedure approval signature of the cognizant manager below confirms that prior concurrence of required review groups has been obtained.</p>			
<p>Department NS/ES/PSDR/Nuclear Operations</p>	<p>Revision 2</p>		
<p>Originator M. A. Shakun</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Signature Electronically Approved**</td> <td style="width: 30%;">Date See EDMS</td> </tr> </table>	Signature Electronically Approved**	Date See EDMS
Signature Electronically Approved**	Date See EDMS		
<p>Cognizant Manager G. F. Vincent</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Signature Electronically Approved**</td> <td style="width: 30%;">Date* See EDMS</td> </tr> </table>	Signature Electronically Approved**	Date* See EDMS
Signature Electronically Approved**	Date* See EDMS		

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WESTINGHOUSE NON-PROPRIETARY CLASS 3



STANDARD INTERNAL REVIEW SHEET

DOCUMENT NUMBER: 420A90-NP REVISION NUMBER: 2

TITLE: WINCISE Functional Specification for Watts Bar Unit 2

GENERIC

PLANT SPECIFIC
(Plant Identification should be included in title)

OTHER (Specify) _____

MANDATORY REVIEWS	SIGNATURE	DATE	COMMENTS
1. ORIGINATOR M. A. Shakun	Electronically Approved *	See EDMS	
2. SYSTEM ENGINEERING See 420A90, Rev. 2	Electronically Approved *	See EDMS	
3. RRAS See 420A90, Rev. 2	Electronically Approved *	See EDMS	
4. NUCLEAR FUELS See 420A90, Rev. 2	Electronically Approved *	See EDMS	
5. COMPONENT ENGR. APPROVAL REQUIRED <input type="checkbox"/> YES _____ / _____ Initial/Date <input checked="" type="checkbox"/> NO Component Engineering Manager/Designee			
6. QUALITY See 420A90, Rev. 2	Electronically Approved *	See EDMS	
7. COGNIZANT MANAGER G. F. Vincent	Electronically Approved *	See EDMS	(1)
OTHER			
8. OTHER BUSINESS UNIT APPROVAL REQUIRED <input type="checkbox"/> YES Business Unit <input checked="" type="checkbox"/> NO Engr. Concurrence			

(1) Approval of the cognizant manager signifies that all reviews have been obtained and all comments resolved.

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RECORD OF CHANGES

Document Number: 420A90-NPRevision No.: 2Title: WINCISE Functional Specification for Watts Bar Unit 2

CHANGE NUMBER	PARAGRAPH NUMBER	CHANGE DESCRIPTION AND REASON
1	5.5.12, 5.5.15	Updated SPS cabinet environmental design range
2	5.5.18	Added requirement on power supply
3	5.6	Updated cable requirements
4	Table 5.1	Updated Detector currents requirements
5	6.5	Correct spelling in Reference for CAPs IR # 09-201-M008
6	6.6	Included IEEE 384 reference
7	5.5.2, 5.5.6, 5.5.11	Changed all amperes values to microamps for consistency to avoid an error likely situation
8	5.1.1, 5.1.2	Included minimum number of SPDs and updated minimum operable SPDs
9	5.2.4	Included diameter reference to MIDS
10	5.2.6	Changed psia to psig
11	5.5.2	Changed overall "uncertainty" to overall "error" in SPS currents requirement
12	5.5.3	Changed signal update interval from 1 second to 1 minute
13	5.5.10	Removed mean time between failure requirement
14	3.0	Numbered sections were changed to bullets
15	6.7	Included Reference 6.7
16	5.3.5	Updated units
17	1.0, 5.1.1, 5.4.1, 5.5.17, 5.5.18	Included document name with first mention of the reference
18	5.1.7, 5.1.8	Pluralized IITAs and SPDs

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1.0 Purpose

This document is a copy of A20A90, Rev. 2, "WINCISE Functional Specification for Watts Bar Unit 2." It was created to submit to the Nuclear Regulatory Commission for the Watts Bar Nuclear Unit 2 NSSS Completion Project.

The purpose of this document is to define the functional requirements of the Westinghouse IN-Core Information, Surveillance, and Engineering (WINCISE™) System at Watts Bar Unit 2. WINCISE is being implemented at Watts Bar Unit 2 per Reference 6.1 (Contract Work Authorization). These functional specifications were prepared in accordance with the Functional Specification quality policy and procedures of References 6.4 and 6.5.

2.0 Background

The WINCISE System at Watts Bar Unit 2 uses OPARSSEL™ In-core Instrument Thimble Assemblies (IITA), containing five Vanadium self-powered neutron detectors (SPD), to continuously measure the three-dimensional (3-D) core power distribution. The SPDs are distributed both axially and radially within the reactor core to provide continuous measurements of signals directly proportional to the neutron flux present around each SPD element. The measured SPD signals are processed to be suitable for use by the BEACON-TSM™ Power Distribution Monitoring System (PDMS) to generate continuous 3-D measurements of the reactor core power distribution.

Each OPARSSEL IITA also houses a Core Exit Thermocouple (CET). The CET contained in each IITA is positioned to provide a measurement of the reactor coolant temperature at the top of the active fuel of the host fuel assembly thus providing a component measure of the core exit temperature. The CET measurements are for use by the Post Accident Monitoring System (PAMS), and are not used by the WINCISE System to measure the core power distribution.

The SPD and CET signal wires from each IITA are terminated in an electrical connector located at the end of the IITA outside of the Reactor Coolant System (RCS) pressure boundary. The SPD signals are routed from the electrical connectors to the Signal Processing System (SPS) cabinets for analog-to-digital conversion. The digitized SPD signals are then routed through fiber optic cables to the BEACON-TSM PDMS calculation software. The CET signals are routed directly through containment penetrations for input to the PAMS.

The neutron flux data provided by each SPD is processed by the PDMS. The PDMS software resides on a computational workstation and uses the SPD signals in conjunction with analytically derived constants and other plant sensor signals to continuously generate full 3-D indications of nuclear power distribution in the reactor core. The PDMS allows the SPD signals to be used, in conjunction with other reactor condition data, to determine if the reactor power distribution is currently within the operating limits defined in the Technical Specifications (TS) when the reactor is operating at or above 20% of Rated Thermal Power (RTP). The 3-D core power distribution determined by the WINCISE System is also used to develop the core power distribution information required for calibrating the excore Nuclear Instrumentation (NI) input to the Over-Temperature Delta-T (OTΔT) Reactor Trip Setpoint.

When the reactor is operating at or above 20% RTP, the PDMS is capable of calculating actual core peaking factors within an operationally defined uncertainty. Margin to these limits is available for display on a continuous basis to permit reactor operators to assess actual core conditions and alert operators of low margin and operating limit violations. The PDMS also provides predictive capabilities which allow operators to evaluate, in advance, consequences of power changes, coastdown operations and load follow maneuvers, permitting examination of alternatives and affording increased operator understanding of the expected core response.

3.0 Objectives

The overall objective of this program is to develop the fixed in-core detector system, WINCISE, for Watts Bar Unit 2.

- Define the general functional requirements of the WINCISE System.
- Define the minimum functional requirements for the IITA.
- Define the minimum functional requirements for the SPD.
- Define the minimum functional requirements for the CET.
- Define the minimum functional requirements for the SPS.
- Define the minimum functional requirements for the SPD and CET signal cables.
- Define the minimum functional requirements for the PDMS.

4.0 Abbreviations/Acronyms

The following abbreviations and acronyms are defined to allow an understanding of their use within this document.

Acronym	Definition
ARO	All Rods Out
BEACON	Best Estimate Analyzer for Core Operations - Nuclear
BOL	Beginning Of Life
CET	Core Exit Thermocouple
gpm	Gallons Per Minute
ID	Inner Diameter
IITA	In-core Instrument Thimble Assembly
MID	Movable In-core Detector
NI	Nuclear Instrumentation
nv	Neutron flux [1 nv = 1 n/(cm ² /s)]
OD	Outer Diameter
OPARSSEL	Optimized Proportional Axial Region Signal Separation, Extended Life
OTΔT	Over-Temperature Delta-Temperature
PAMS	Post Accident Monitoring System
PDMS	Power Distribution Monitoring System
ppm	Parts Per Million
RCCA	Rod Cluster Control Assembly
RCS	Reactor Coolant System
RTP	Rated Thermal Power
SPD	Self-Powered Detector
SPS	Signal Processing System
TS	Technical Specification
TSM	Technical Specification Monitor
%ΔK/K	Core Reactivity Change (1%ΔK/K = 1000 pcm)

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5.0 Requirements

5.1 WINCISE Requirements

- 5.1.1. The WINCISE System shall not require input from more than 75% of the instrumented locations, with at least four operable SPD associated with the top half of the active core and at least four operable SPD associated with the bottom half of the active core per core quadrant, and at least ten operable SPDs associated with each active core quadrant for the initial WINCISE core power distribution measurement in each operating cycle (Beacon Core Monitoring and Operation Support System Section 6 Reference 6.7).
- 5.1.2. The WINCISE System shall not require input from more than []^{a,c} of the instrumented locations, with at least []^{a,c} SPD associated with the top half of the active core and at least []^{a,c} SPD associated with the bottom half of the active core per core quadrant, and at least ten operable SPDs associated with each active core quadrant, at all points in core life after the initial WINCISE power distribution measurement in each operating cycle (Section 6 Reference 6.7).
- 5.1.3. The WINCISE System shall initialize automatically when power is applied to the equipment as part of a power-up sequence and shall take no longer than []^{a,c} minutes to become fully initialized and ready for operation. Following a loss of power, the WINCISE System shall be designed to initialize, without human interaction, upon restoration of power. The PDMS workstation may require human interaction to restore power.
- 5.1.4. The WINCISE System will be capable of performing its required core monitoring functions at or above []^{a,c} RTP.
- 5.1.5. The hardware used by the WINCISE System to support the PDMS plant inputs and calculation software platform will be configured such that a failure of any one component of the hardware will not automatically cause the PDMS to become inoperable.
- 5.1.6. WINCISE shall support two divisions of IITA with a minimum of three IITA located in each core quadrant. []^{a,c}
- 5.1.7. The radial distribution of IITAs provided with the WINCISE System shall support two divisions of CET with a minimum of three thermocouples provided in each core quadrant for each division. The radial location of each CET in each division will be configured to allow each division of PAMS to monitor approximately equivalent radial core exit temperature distributions.
- 5.1.8. The radial and axial distribution of SPDs must provide sufficient coverage to ensure that the Core Average Axial Offset (AO) can be determined by the WINCISE System to within []^{a,c}.

5.2 IITA Requirements

- 5.2.1. Each OPARSSEL IITA shall house five Vanadium SPD elements and one Type-K CET. There will be 58 IITA provided to Watts Bar Unit 2. Each IITA will be constructed for use in a different radial core location.

- 5.2.2. The IITA shall fit within the existing Movable In-core Detector (MID) Guide Conduits and the Fuel Assembly instrument thimble with adequate clearance for coolant flow.
- 5.2.3. The combination of heat generation within the IITA and the geometry of the Fuel Assembly instrument thimble/IITA combination shall be such that bulk boiling within the instrument thimble and nucleate boiling on the surface of the IITA are prevented for reactor power levels up to the maximum over-power value under normal operating conditions.
- 5.2.4. The total reactivity worth of all the components of all the IITAs shall be within []^{a,c} of the same number of standard []^{a,c} MID thimbles in current operating Westinghouse plants.
- 5.2.5. The IITA/fuel assembly instrument thimble geometry must not be prone to vibration-induced instrument thimble mechanical wear effects that would reduce the usable lifetime of the IITA or the fuel assembly below any other lifetime limitations.
- 5.2.6. The IITA pressure boundary shall maintain Reactor Coolant System (RCS) integrity at pressures up to []^{a,c}.
- 5.2.7. The IITA electrical connector shall satisfy the post-accident qualification requirements associated with the use of the Type-K CET by the PAMS for at least []^{a,c} of IITA operating lifetime.
- 5.2.8. The design, materials, fabrication, inspection, and testing of the IITA shall be in accordance with the ASME Boiler and Pressure Vessel Code, Section III Class 3, and all applicable Code Cases as proposed by the supplier and approved by Westinghouse.
- 5.2.9. The IITA is classified as an instrument tube and therefore not under the jurisdiction of the ASME per NCA-1130 (c). However, the design, the material, and the non-destructive evaluation requirements are per ASME Section III, Class 3. The IITA shall be classified as Safety Class 2.

5.3 SPD Requirements

- 5.3.1. Each SPD shall provide neutron flux data representative of reactor power. The relationship between signal output and neutron flux shall be known over the range of neutron flux and fission gamma densities corresponding to []^{a,c} RTP and the maximum credible over-power value under normal (non-accident) operating conditions.
- 5.3.2. The SPDs must be operable at reactor temperatures corresponding to the maximum credible operating power under normal operating conditions in the reactor.
- 5.3.3. The SPDs shall not require periodic recalibrations against alternate measurements of neutron flux at the SPD location which are not integral to the IITA.
- 5.3.4. The center of the effective length of each SPD in an IITA shall be known relative to the nominal bottom of the active fuel in the Fuel Assemblies to within []^{a,c} at cold conditions. The centers of the effective lengths shall be based on the actual as-built locations of each SPD relative to the IITA bullet nose tip.
- 5.3.5. The thermal neutron sensitivity of a fresh primarily neutron sensitive SPD shall be greater than []^{a,c}.

5.4 CET Requirements

- 5.4.1. The CET must be operable before, during, and after a design basis accident without loss of safety function, and for the time required to perform the safety function.
- 5.4.2. The CET contained within IITAs shall provide the PAMS with core exit temperature signals required by the post-accident inadequate core cooling monitor system, per the Criteria for Accident Monitoring Instrumentation For Nuclear Power Plants Reference 6.3.

5.5 SPS Requirements

- 5.5.1. The signals determined from each SPD in every IITA shall be input to a system capable of converting the signals from the SPDs to digitized currents and transferring the digitized currents to a multiplexing system for transmission to the device(s) that prepares the requisite input to the BEACON-TSM System.
- 5.5.2. At nominal temperature conditions, []^{a,c}, the overall error in the generated digitized currents must not exceed []^{a,c}.
- 5.5.3. The SPS System shall be capable of providing updated digitized current values (listed in Section I of Table 5.1) from each SPD to the WINCISE System power distribution calculation software at intervals of []^{a,c}.
- 5.5.4. The SPS System shall be configured such that the failure of any single SPS component does not cause more than a []^{a,c} reduction in the maximum possible number of operable SPDs.
- 5.5.5. The SPS System shall be designed to ensure that the failure of any single component does not reduce the number of IITAs from which valid SPD data can be obtained, such that any non peripheral assembly has less than one operable thimble within a chess knight's move (within a factor of []^{a,c} of an assembly pitch).
- 5.5.6. The SPS will perform validation of the currents relative to high and low limit values. []^{a,c}
- 5.5.7. The SPS will have the capability to determine the leakage resistance value for each SPD in each SPD segregation channel on demand from an operator accessible remote location. []^{a,c}
- 5.5.8. The SPS will evaluate the SPD signals relative to a maximum rate of change criteria between any two consecutive points. The rate of change criteria will be a user-adjustable input value.
- 5.5.9. The SPS will assign a data quality value which notifies the power distribution calculation software to disregard data from the affected SPD(s). The data quality flag will automatically reset when the signal(s) are within established limits.
- 5.5.10. The in-containment portion of the SPS will be capable of withstanding the temperatures, humidity, radiation levels, seismic conditions, and electromagnetic interference

conditions expected to be present in the near vicinity of the hardware under all allowable non-post-accident in-containment conditions, without degradation.

- 5.5.11. The internal ambient air temperature of the SPS equipment cabinets must be maintained between []^{a,c} during normal operation. Analytic temperature drift correction may be used to correct the SPD current drift caused by temperatures outside of the nominal range. If analytic correction of the indication changes caused by the temperature drift is not feasible, then temperature control shall be maintained by means of a cooling system when necessary. The maximum change in SPD signal indication due to temperature changes inside the SPS enclosure(s) that can occur before corrective measures are taken is []^{a,c}.
- 5.5.12. Upon reaching an internal temperature of []^{a,c}, the SPS cabinet internal equipment shall shut down to prevent equipment damage.
- 5.5.13. The maximum allowable relative humidity range inside the SPS equipment cabinets shall be []^{a,c} relative humidity, non-condensing.
- 5.5.14. The SPS System is not a safety system, so it is not required to operate during a design basis seismic event. However, the SPD Signal Processing System structures must not cause damage to other plant equipment during a design basis seismic event.
- 5.5.15. The SPS equipment enclosures shall maintain their function in a location where the maximum integrated dose is less than []^{a,c}.
- 5.5.16. Time response compensation will be applied to each of the measured SPD currents to produce the equivalent of equilibrium power distribution condition SPD signals for input to the BEACON-TSM System power distribution calculation software at intervals of []^{a,c}.
- 5.5.17. The SPS will be capable of providing all the plant data listed in Table 5.1 to the BEACON-TSM System hardware in a single ASCII file as described in the Beacon User Manual (Reference 6.2) at intervals of []^{a,c}.
- 5.5.18. The SPS cabinet external and internal power supplies shall be configured to prevent a single over-voltage or surge event from causing loss of more than []^{a,c} of the CET used by the PAMS, and shall comply with the requirements contained in IEEE 384-1981. (IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits, Reference 6.6).

5.6 Cable Requirements

- 5.6.1. The CET cable system shall be classified as a safety related Class 1E system and must support the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function, for the time required to perform the safety function.
- 5.6.2. The in-containment hardware for the CET Cable System shall be a stainless steel sheathed mineral insulated (MI) cable design.
- 5.6.3. The CET cable system shall be consistent with the provisions of IEEE Standard 384 (Reference 6.6).
- 5.6.4. The SPD cables shall be suitable for the installed environment.

6.0 Reference Documents

- 6.1 Contract Work Authorization (CWA) Request, CWA, #West-WBT-2008-005.
- 6.2 BEACON User Manual, Section 4.4.2.3, Ethernet BEACON Data File, Rev. 29.
- 6.3 Regulatory Guide 1.97 Rev. 03, "Criteria for Accident Monitoring Instrumentation For Nuclear Power Plants," May 1983.
- 6.4 Westinghouse Level II Policies and Procedures, WEC 3.5.5, Functional Specifications, Rev. 0.
- 6.5 Westinghouse Electric Company Quality Management System (QMS)
- 6.6 IEEE Standard 384 (1981), "IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits."
- 6.7 WCAP-12472-P-A, Addendum 2 Rev. 0, "BEACON Core Monitoring and Operation Support System."

Attachment 18

**Westinghouse Electric Company CAW-11-3216,
Application for Withholding Proprietary Information from Public Disclosure,
420A90-P, Revision 2, "WINCISE Functional Specification for Watts Bar Unit 2"
(Proprietary)**



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CAW-11-3216

July 28, 2011

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: 420A90-P, Rev. 2, "WINCISE Functional Specification for Watts Bar Unit 2" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-11-3216 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. 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 2.390 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-11-3216, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,

A handwritten signature in black ink that reads 'J. A. Gresham /for'.

J. A. Gresham, Manager
Regulatory Compliance

Enclosures

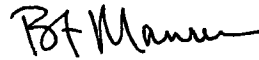
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared B. F. Maurer, 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 Company LLC (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:

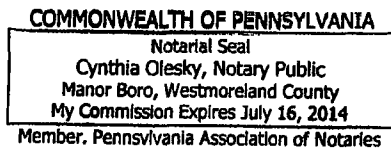


B. F. Maurer, Manager
ABWR Licensing

Sworn to and subscribed before me
this 28th day of July 2011



Notary Public



- (1) I am Manager, ABWR Licensing, in Nuclear Services, Westinghouse Electric Company LLC (Westinghouse), 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 rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse 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 2.390 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 that 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 10 CFR Section 2.390; 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 420A90-P, Rev. 2, "WINCISE Functional Specification for Watts Bar Unit 2" (Proprietary) for submittal to the Commission, being transmitted by Tennessee Valley Authority letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with the Incore Instrument System (IIS) and may be used only for that purpose.

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

- (a) Assist the customer in providing technical licensing information to the NRC that is required for approval of the Watts Bar Nuclear Unit 2 IIS System.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of similar information to its customers for the purpose of licensing in-core instrumentation systems.
- (b) Its use by a competitor would improve his competitive position in the development and licensing of a similar product.
- (c) The information requested to be withheld reveals the distinguishing aspects of a design developed by Westinghouse.

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 calculations, analysis and 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.

Further the deponent sayeth not.

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 2.390 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) 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 2.390(b)(1).

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 2.390 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.

Tennessee Valley Authority

Letter for Transmittal to the NRC

The following paragraphs should be included in your letter to the NRC:

Enclosed are:

1. ___ copies of 420A90-P, Rev. 2, "WINCISE Functional Specification for Watts Bar Unit 2"
(Proprietary)
2. ___ copies of 420A90-NP, Rev. 2, "WINCISE Functional Specification for Watts Bar Unit 2"
(Non-Proprietary)

Also enclosed is the Westinghouse Application for Withholding Proprietary Information from Public Disclosure CAW-11-3216, accompanying Affidavit, Proprietary Information Notice, and Copyright Notice.

As Item 1 contains information proprietary to Westinghouse Electric Company LLC, it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit 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 Section 2.390 of the Commission's regulations.

Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Westinghouse affidavit should reference CAW-11-3216 and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.