



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931**

November 8, 2002

Tennessee Valley Authority
ATTN: Mr. J. A. Scalice
Chief Nuclear Officer and
Executive Vice President
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

**SUBJECT: WATTS BAR NUCLEAR POWER PLANT - NRC SPECIAL INSPECTION
REPORT 50-390/02-07**

Dear Mr. Scalice:

On September 30, 2002, a Special Inspection Team (SIT) was established by NRC Region II management using the guidance contained in Management Directive 8.3, NRC Incident Investigation Program. The SIT was chartered to inspect and assess the circumstances associated with the loss of preferred offsite power event that occurred on September 27, 2002, at the Watts Bar Nuclear Power Plant. On October 11, 2002, the NRC completed the inspection.

The enclosed special inspection report documents the inspection findings which were discussed on October 11, 2002, with Mr. L. Bryant and other members of your staff. The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The team reviewed selected procedures and records, conducted field walkdowns, observed activities, and interviewed personnel.

Based on the results of this inspection no findings of significance were identified. The team concluded that Watts Bar personnel responded appropriately to the loss of preferred offsite power event, that all safety-related equipment actuated and operated as designed, and that the temporary post-event Watts Bar Hydro Station switchyard alignment to restore preferred offsite power to Watts Bar conformed to 10 CFR 50 Appendix A, General Design Criteria 17, Electric Power Systems.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document

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Room or from the Publically Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web-site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Loren R. Plisco, Director
Division of Reactor Projects

Docket No.: 50-390
License No.: NPF-90

Enclosure: Inspection Report No. 50-390/02-07
w/ 2 Attachments

cc w/encl: (See page 3)

cc w/encl:

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DATE	10/31/2002	11/7/2002	11/7/2002	10/30/2002	11/17/2002		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
PUBLIC DOCUMENT	YES NO						

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-390
License No: NPF-90

Report No: 50-390/02-07

Licensee: Tennessee Valley Authority (TVA)

Facility: Watts Bar Nuclear Plant, Unit 1

Location: 1260 Nuclear Plant Road
Spring City TN 37381

Dates: September 30 - October 11, 2002

Inspectors: J. Bartley, Senior Resident Inspector, Watts Bar, (Team Leader)
P. Fillion, Reactor Inspector, Region II
J. Reece, Resident Inspector, Watts Bar

Approved by: Loren R. Plisco, Director
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

Special Inspection Report 05000390-2002-07, Tennessee Valley Authority, on September 30 - October 11, 2002, Watts Bar Unit 1, loss of preferred offsite power event.

The inspection was conducted by the Watts Bar senior resident and resident inspector, and a Region II reactor inspector. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000, and at its Reactor Oversight Process web site at <http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html>.

Special Inspection for Loss of Preferred Offsite Power

No findings were identified. The inspectors reviewed the licensee's response to a loss of preferred offsite power and the adequacy of the temporary preferred offsite power system alignment. All mitigating systems actuated as required and functioned as designed for the loss of preferred offsite power event. Licensee personnel effectively implemented the abnormal operating instructions and Emergency Plan. Overall, the Emergency Preparedness organization and equipment functioned well during the event. The emergency declaration was made promptly and notifications to the State of Tennessee and NRC were timely. The technical support center and operations support center were manned quickly and were effective in coordinating event response. The temporary preferred offsite power system met the requirements of General Design Criterion 17 and adequate administrative controls were in place to ensure notification of control room personnel when the preferred offsite power system was unable to meet Technical Specification requirements.

Report Details

Summary of Plant Status

The unit operated at 100 percent power through the event.

01. Special Inspection Team Charter

On September 30, 2002, a Special Inspection Team (SIT) was established by NRC Region II management using the guidance contained in Management Directive 8.3, NRC Incident Investigation Program. The SIT was chartered to inspect and assess the loss of preferred offsite 161 kilovolt (kV) power to the Watts Bar Nuclear Plant (WBNP) 6.9 kV shutdown boards. The loss of preferred offsite power was caused by a fire in the control building at the Watts Bar Hydro Electric Plant (WBH), and was identified by the licensee at 8:50 a.m., eastern daylight time on September 27, 2002.

01.01 General Inspection Scope

The objectives of the special inspection were to: (1) determine the sequence of events for the loss of preferred offsite power; (2) evaluate the licensee's response to the event including use of procedures and Emergency Plan implementation; (3) evaluate the risk significance of the event; (4) assess any potential generic safety issues; (5) evaluate the licensee's invoking of 10 CFR 50.54(x) for use of the WBNP fire brigade at the WBH; and (6) evaluate the post-event WBH switchyard electrical lineup as it compares to the design and licensing basis of the WBNP.

Utilizing NRC Inspection Procedure 93812, Special Inspection, the SIT focused on the activities outlined in the SIT charter (Attachment 1). Observations and findings of these areas are outlined below.

02. Background - Description of WBNP Preferred Offsite Power System

Preferred offsite power is supplied through four 161- 6.9 kV common station service transformers (CSSTs) at WBNP from TVA's 161 kV transmission grid at the WBH, approximately 1.5 miles from WBNP, via two separate transmission lines. The transmission lines from the WBH switchyard to the CSSTs are approximately 1.5 miles long and run on separate routes located entirely on TVA property.

The C and D CSSTs provide 6.9 kV electrical power to the WBNP Class 1E power system via the 6.9kV shutdown boards. The A and B CSSTs provide 6.9 kV electrical power to the non-safety-related common boards. The A and B CSSTs can also provide power to the Class 1E power systems via a maintenance feed when the unit is in cold shutdown. Power to the unit boards (balance of plant loads) and the reactor coolant pumps (RCPs) are supplied from the output of the main generator via the unit station service transformers (USSTs). Following a unit trip, the balance of plant loads and RCPs fast-transfer from the USSTs to the A and B CSSTs.

The WBH switchyard is normally connected to the TVA 161 kV transmission grid by six lines. In addition, the five WBH generating units normally feed the WBH switchyard. The switchyard bus arrangement is such that a loss of any one of the four main bus sections would not cause a loss of power to either of the two preferred offsite power lines to the CSSTs.

03. Description and Chronology of Event

03.01 Event Description

On September 27, 2002, at approximately 8:24 a.m., a fire at the WBH resulted in the loss of both preferred offsite power lines to WBNP. The fire damaged several switchyard breakers' protective relays, resulting in the normally-shut breakers opening. The loss of preferred offsite power to the 6.9kV shutdown boards caused the automatic start and loading of all four emergency diesel generators (EDGs), the auxiliary feedwater pumps and the standby high head charging pump. Subsequently the licensee declared a Notification of Unusual Event (NOUE) and staffed the technical support center (TSC) and operations support center (OSC). The plant remained at 100% power during the event because the secondary plant systems and reactor coolant pumps remained powered from the output of the main generator. Preferred offsite power was restored to the site, in a degraded but operable condition, and the NOUE was exited at approximately 3:00 a.m., on September 28.

03.02 Event Chronology

The team developed the following sequence of events for the loss of the preferred offsite power lines using control room logs, TSC Logs, and licensee event notification reports. All times are eastern daylight time.

<u>Date/Time</u>	<u>Condition/Event</u>
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September 27, 2002

- | | |
|-----------|---|
| 8:24 a.m. | Loss of the "A" 161 kV preferred offsite power line to the C CSST occurred due to fire at the WBH. The loss of this power line resulted in the automatic start and loading of the 1A-A and 2A-A EDGs. As designed, the 1B-B and 2B-B EDGs started in the standby mode, and the 1A-A motor-driven auxiliary feedwater pump and turbine-driven auxiliary feedwater pump also automatically started. Technical Specification (TS) Limiting Condition for Operation (LCO) 3.8.1A, (one offsite power circuit inoperable) was entered, with required action to restore the "A" power line within 72 hours. |
| 8:26 a.m. | NRC senior resident inspector reported to the main control room to observe control room operating personnel activities and the implementation of Abnormal Operating Instruction (AOI) 35, Loss of Offsite Power. |

- 8:40 a.m. Licensee dispatched the WBNP fire brigade to the WBH to assist with fire fighting efforts.
- 8:42 a.m. Loss of the "B" 161 kV preferred offsite power line occurred to the D CSST. The 1B-B and 2B-B EDGs which had been operating in the standby mode re-energized the 6.9kV shutdown board and the 1B-B motor-driven auxiliary feedwater pump and 1B-B centrifugal charging pump automatically started. TS LCO 3.8.1D was entered, with required action to restore one offsite circuit within 24 hours.
- 8:45 a.m. Licensee requested offsite ambulance and fire department assistance.
- 8:52 a.m. Licensee declared a Notification of Unusual Event (NOUE) due to loss of both preferred offsite power lines.
- 9:11 a.m. Licensee notified the NRC and State of Tennessee of the NOUE.
- 9:20 a.m. Licensee initiated recall of additional fire brigade personnel.
- 9:26 a.m. Licensee staffed the TSC.
- 10:40 a.m. Licensee invoked 10CFR50.54(x) for the WBNP fire brigade not meeting minimum manning requirements for over two hours as required by the Fire Protection Report and License Condition 2.F.
- 11:01 a.m. Licensee reported to the NRC the use of 10CFR50.54(x) to deviate from License Condition 2.F because fire brigade was offsite at WBH fighting the fire.
- 11:30 a.m. Fire brigade on-site staffing restored. Licensee compliance with License Condition 2.F restored.
- 1:53 p.m. Incident Commander reported fire is out.
- 3:16 p.m. A and D CSSTs re-energized from 161 kV WBH switchyard (not loaded).
- 3:26 p.m. B and C CSSTs re-energized from 161 kV WBH switchyard (not loaded).
- 6:20 p.m. Licensee notified the NRC that the WBH switchyard lineup to restore power to the "A" and "B" preferred offsite power lines would be evaluated per Generic Letter (GL) 91-18 as an operable but degraded condition.

September 28, 2002

- 12:12 a.m. C CSST paralleled with the 1A-A EDG on the 1A-A 6.9 kV shutdown board.

- 12:46 a.m. 1A-A EDG secured.
- 1:16 a.m. C CSST paralleled with the 2A-A EDG on the 2A-A 6.9 kV shutdown board.
- 1:25 a.m. Licensee exited TS LCO 3.8.1D (24 hours to restore one offsite circuit). TS LCO 3.8.1A still applicable (restore offsite circuit to operable status).
- 1:39 a.m. 2A-A EDG secured.
- 2:00 a.m. D CSST paralleled with the 1B-B EDG on the 1B-B 6.9 kV shutdown board.
- 2:10 a.m. 1B-B EDG secured.
- 2:32 a.m. D CSST paralleled with the 2B-B EDG on the 2B-B 6.9 kV shutdown board.
- 2:46 a.m. 2B-B EDG secured.
- 3:00 a.m. Licensee exited TS LCO 3.8.1A, with all offsite circuits operable.
- 3:08 a.m. Licensee terminated NOUE.

04. Risk Significance of Event

At the time of the event, a regional senior reactor analyst (SRA) performed a screening analysis for the event, using data derived from the NRC's Standardized Plant Analysis Risk model to determine the conditional core damage probability (CCDP). A one day period of vulnerability was assumed for a plant transient (assumed rate of 2/year) with an accompanying loss of preferred offsite power. The screening analysis resulted in a CCDP of $2E-6$, which was used in the management decision to initiate a special inspection in response to the event.

Subsequent to the event, the licensee completed a risk review of the event in which some of the conservatisms were removed. The regional SRA reviewed the calculation. Since the required safety-related equipment all started during the event, the fail-to-start probabilities were set to zero for the EDGs, EDG auxiliaries, component cooling water pumps, charging pumps, and auxiliary feedwater system pumps. The model was modified to assume a loss of preferred offsite power for all events. The zero maintenance model was used, and risk for the 20 hour exposure was calculated. The licensee CCDP calculation resulted in an increase of $7.6E-7$ for the period. This result was in reasonable agreement with the more conservative screening analysis performed by the regional SRA prior to the special inspection being initiated.

05. Evaluation of Post-Event Watts Bar Preferred Offsite Power Source Alignment

The team verified the acceptability of the post-event preferred offsite power source by reviewing the operability evaluation, walking down the WBH switchyard, evaluating the acceptability of the switchyard and relay modifications, and verifying appropriate administrative controls were in place for the local 161 kV grid. The documents reviewed are listed in Attachment 2. At the end of the inspection period, the licensee was working to restore the preferred offsite power source to the WBNP licensing and design basis configuration.

05.01 Operability Evaluation

The team reviewed the licensee's operability evaluation of the post-event preferred offsite power configuration to verify that it conformed to design requirements stipulated in General Design Criterion 17, Electric Power Systems. The team reviewed the calculations and documents listed in Attachment 2 which supported the operability evaluation.

The licensee addressed the issue of the capacity and capability of the post-event offsite power configuration to supply power for design basis events by performing a load flow analysis on the power system. This was necessary because original studies had included a block of reactive power supplied from the hydro units, which were no longer available. The team reviewed the parameters for this analysis and the results. The team determined that the parameters were representative of realistic system operation including an adequate number of contingencies.

05.02 Walkdown of the WBH Switchyard

The team walked down the WBH switchyard to verify that the actual configuration matched the above mentioned transmission system analysis, and to look for any degraded conditions of the type that could be seen in a walkdown inspection. In addition, the team reviewed the results of thermography readings made on October 1, 2002, on the disconnect switches involved in the post-event configuration made to confirm that the switches were 100 percent closed. The team also observed voltmeters in the main control room and confirmed that voltage on the safety-related buses was normal. No problems were identified.

05.03 Switchyard and Relay Modifications

A consideration for the post-event offsite power configuration was protective relaying. Circuit breakers and relays at the WBH switchyard could no longer respond to faults that might occur at the switchyard, on the lines running to the plant or in the CSST transformers. The licensee addressed this issue by reviewing the application and resetting of protective relays located at the far end of the 161 kV transmission lines which terminate at the WBH switchyard. The team reviewed this study and concluded that adequate protection for faults was provided. The revised protection scheme placed greater importance on operation of high-speed ground switches located near the CSST transformers. Therefore, the team examined these switches and confirmed through review of maintenance records that functional testing had been performed.

05.04 Administrative Controls

A revised transmission system study showed that the post-event offsite power configuration had the capacity and capability to supply power to the safety-related loads for all design basis events, up to a certain total transmission system load which was less than the projected winter peak load. This meant that administrative controls on system operation, relative to providing an adequate offsite power supply to WBNP, had to be revised and plans had to be developed to boost the voltage during peak winter load. An audible alarm is provided at the dispatch center relative to voltage at the hydro plant switchyard. Since voltage at the hydro plant switchyard could no longer be “read” at the dispatch center, the alarm would be generated from a real-time computer-calculated voltage. Inputs for this calculation were voltage at potential transformers at the other end of the lines and the load on those lines. The team reviewed the temporary operating instructions for the system dispatcher which provided revised administrative controls on system operation, i.e., a new load limit and contingencies, and found them to be adequate.

06. Use of 10CFR50.54(x) for Fire Brigade Staffing

The licensee dispatched the site fire brigade to respond to the reported fire at the WBH. Licensee management determined, based on assessments by the WBN Incident Commander at the scene, that the fire brigade needed to remain at the WBH to minimize the spread of the fire so that preferred offsite power could be restored in a timely manner. This resulted in fire brigade staffing requirements to be less than that specified by the Fire Protection Report (required by License Condition 2.F). Consequently, the licensee implemented 10 CFR 50.54(x). The team reviewed the documents listed in Attachment 2 to verify that: 1) the use of 10 CFR 50.54(x) was appropriate for the circumstances; 2) the proper NRC notifications were made; and 3) prompt actions were taken to restore the compliance with the minimum fire brigade staffing requirements.

10 CFR 50.54(x) allows that “A licensee may take reasonable action that departs from a license condition or a technical specification (contained in a license issued under this part) in an emergency when this action is immediately needed to protect the public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent.” The team determined that the licensee’s justification to have the WBNP fire brigade stay at the scene to minimize the spread of the fire and reduce the time to restore the preferred offsite power source was reasonable and necessary to protect health and safety. The team did not identify any other actions consistent with the license condition that could provide equivalent protection. Additionally, the team determined that the licensee properly reported the implementation of 10 CFR 50.54(x) in accordance with 10 CFR 50.72, and that the licensee’s actions to restore compliance to the Fire Protection Report regarding fire brigade staffing were prompt.

07. Potential Generic Issues

The team did not identify any potential generic issues during the review of this event.

08. Equipment Failures

The team observed the performance of safety-related and support systems as the event progressed by observing control room indicators. In addition, after the event, the team reviewed control room operator logs, TSC logs, system parameters on the plant computer, and the licensee's event critique Problem Evaluation Report (PER) 02-013616-000 to identify any other equipment problems that affected the licensee's ability to respond to the event.

The team determined that there were no failures of safety-related equipment during the event. There were two failures of non-safety-related systems used by the licensee and the NRC for event response. The emergency response data system (ERDS), which is used to transmit real time plant data to computers in the NRC incident response centers, and the control room console, which is used for notifying licensee emergency response personnel, both failed due to the fire at the WBH. The loss of these systems did not adversely affect the licensee's or the NRC's ability to respond to this event. The licensee was able to promptly report plant data via the emergency notification system (ENS) phone line to the NRC operations center. The licensee called the TVA Operations Duty Specialist in Chattanooga who promptly activated the emergency paging system.

09. Human Factor/Procedural Deficiencies

The team observed the licensee response to the event in both the control room and the TSC. The team verified the licensee's implementation of AOI-35, Loss of Offsite Power; Emergency Plan Implementing Procedure (EPIP) 1, Emergency Plan Classification Flow Chart; EPIP-2, Notification of Unusual Event; EPIP-6, Activation and Operation of the Technical Support Center; and EPIP-13, Termination of the Emergency and Recovery. In addition, the team reviewed the licensee's event critique as documented in PER 02-013616-000. No human factor or procedural deficiencies were identified by the team or the licensee.

10. Quality Assurance Deficiencies

The team reviewed the cause of the event, fire at the WBH, and equipment performance. The team determined that there were no quality assurance deficiencies which caused the event or affected the licensee's ability to respond to the event.

11. Radiological Consequences

The team reviewed plant performance and radiological monitoring data and determined there were no radiological consequences to the event.

12. Safeguards Issues

The team reviewed the response of security personnel and equipment to the loss of preferred offsite power. All security equipment functioned as designed for the event and personnel properly implemented appropriate compensatory actions.

13. Probable Contributing Causes of the Event

The team reviewed the preliminary TVA fire investigation results. The investigation determined that the fire was not caused by arson or sabotage. No contributing causes to the fire were identified as of the end of this inspection.

14. Management Meetings, including Exits

The team presented the inspection results to Mr. L. Bryant and other members of licensee management at the conclusion of the inspection on October 11, 2002. The team confirmed with the licensee that no proprietary information was examined during the inspection.

October 2, 2002

MEMORANDUM TO: Jonathan H. Bartley
Team Leader
Special Inspection Team

FROM: Luis A. Reyes */RA/ (for Bruce Mallett)*
Regional Administrator

SUBJECT: SPECIAL INSPECTION TEAM CHARTER

A Special Inspection Team (SIT) has been established to inspect and assess the loss of preferred offsite 161kV power to the Watts Bar Nuclear Plant 6.9 kV shutdown boards. The loss of offsite power was caused by a fire in the control building at the Watts Bar Hydro Electric Plant. The loss of offsite power was identified by the licensee at 8:50 a.m., EDT on September 27, 2002.

The team composition is as follows:

Team Leader	J. Bartley, RII
Members	J. Reece, RII P. Fillion, RII

The objectives of the inspection are to: (1) determine the sequence of events for the loss of offsite power; (2) evaluate the licensee's response to the event including use of procedures and Emergency Plan Implementation; (3) evaluate the risk significance of the event; (4) assess any potential generic safety issues; (5) evaluate the licensee's invoking of 10 CFR 50.54(x) for use of the Watts Bar Nuclear Plant fire brigade at the Watts Bar Hydro Electric Plant; and (6) evaluate the temporary Watts Bar Hydro Electric Plant switchyard electrical lineup as it compares to the design and licensing basis of the Watts Bar Nuclear Plant.

For the period during which you are leading this inspection and documenting the results, you will report directly to me. The guidance of NRC Inspection Procedure 93812, "Special Inspection," and Management Directive 8.3, "NRC Incident Investigation Procedures," apply to your inspection. If you have any questions regarding the objectives of the attached charter, contact me.

Attachment: SIT Charter

cc w/Attachment: (See page 2)

J. Bartley

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cc w/Attachment:
W. Kane, DEDR
S. Collins, NRR
H. Berkow, NRR
L. Plisco, RII
P. Fredrickson, RII
J. Bartley, RII
C. Casto, RII

**SPECIAL INSPECTION TEAM CHARTER
WATTS BAR NUCLEAR PLANT
LOSS OF 161KV OFFSITE POWER TO 6.9 KV SHUTDOWN BOARDS**

Basis for the formation of the SIT: The licensee declared an Unusual Event due to a loss of preferred offsite 161kV power to the Watts Bar Nuclear Plant 6.9 kV shutdown boards. The loss of offsite power was caused by a fire in the control building at the Watts Bar Hydro Electric Plant. To correct the condition the licensee completed an engineering evaluation and reconnected 161 kV offsite power lines to the Watts Bar Nuclear Plant.

This event appears to have the characteristics which meet the criteria of Management Directive 8.3 in that this loss of offsite power may have involved significant unexpected system interactions and possible adverse generic implications.

Objectives of the SIT: (1) determine the sequence of events for the loss of offsite power; (2) evaluate the licensee's response to the event including use of procedures and Emergency Plan Implementation; (3) evaluate the risk significance of the event; (4) assess any potential generic aspects of the degraded condition; (5) evaluate the licensee's invoking of 10 CFR 50.54(x) for use of the Watts Bar Nuclear Plant fire brigade at the Watts Bar Hydro Electric Plant; and (6) evaluate the temporary Watts Bar Hydro Electric Plant switchyard electrical lineup as it compares to the design and licensing basis of Watts Bar Nuclear Plant. To accomplish these objectives, the following will be performed:

- Develop a chronology of events
- Review the licensee's GL 91-18 evaluation for the modified offsite power supply configuration.
- Walkdown the 161 kV switchyard.
- Evaluate the acceptability of the modifications to the offsite power supply configuration.
- Verify that appropriate administrative controls are in place with regard to the modified offsite power supply configuration.
- Compare the design and licensing basis documents to the offsite power configuration.
- Review the event report as documented in the corrective action program.
- Verify that equipment responded as designed using operator logs, inspector notes, event notification records, computer alarm printouts, and other licensee records.
- Review the licensee's risk determinations of the event.
- Review the use of 10CFR50.54(x) for the onsite fire brigade responding to the hydro plant fire.
- Document the inspection findings and conclusions in an inspection report within 30 days of the inspection.
- Conduct an exit meeting.

SUPPLEMENTAL INFORMATION
PARTIAL LIST OF PERSONS CONTACTED

Licensee

L. Bryant, Plant Manager
J. Gomez, Electrical Design Engineering Manager
D. Kulisek, Assistant Plant Manager
W. Lagergren, Site Vice President
J. Laughlin, Engineering and Site Support Manager
G. Nicely, TVA Electrical Design Engineer, Chattanooga Office
P. Pace, Licensing and Industry Affairs Manager
K. Parker, Maintenance and Modifications Manager
J. Roden, Operations Superintendent
T. Wallace, Operations Manager

NRC

J. Bartley, Senior Resident Inspector
P. Fillion, Reactor Inspector
J. Reece, Resident Inspector

ITEMS OPENED AND CLOSED

Opened

None

Opened and Closed

None

LIST OF DOCUMENTS REVIEWED

Section 05

Watts Bar Nuclear Plant 161 kV and 500 kV Grid Voltage Schedules and Operating Instructions, dated August 31, 2001 [document location E31 010831 354]

Calculation No. WBN-EEB-EDQ1999-010001, Auxiliary Power System Analysis, Rev. 7, dated August 20, 2002, page 22

Watts Bar Nuclear - Transmission System Study - Grid Voltage Study of WBN's Offsite Power Supply and Operating Instructions, dated August 31, 2001 [document location E31 010831 355]

Transmission System Study - Watts Bar Nuclear - Temporary Operating Instructions, dated September 27, 2002 [document location E03 020927 054]

Calculation No. TPSS5175SPREDX1610002001, 161 kV Switchyard Watts Bar 161 kV Line Relaying Temporary Radial Feed to Transformer A/D, Rev 0, dated September 27, 2002

Calculation No. TPSS5185SPREDX1610002002TEMP, 161 kV Switchyard Watts Bar 161 kV Line Relaying Temporary Radial Feed to CSST B/C, Rev 0, dated September 27, 2002

Calculation No. TPSS6058SPREDX1610002002, 161 kV Switchyard Watts Bar 161 kV Line Relaying Temporary Radial Feed to WBN CSSTA/D, Rev 0, dated September 27, 2002

Drawing No. 1-75W502, Wiring Diagram 161 kV Transformers Main Single Line, Rev. 6, dated June 23, 2000

Drawing No. 1-75W550, Wiring Diagram Misc Control Circuits 250 VDC and 120 VAC Schematics, Rev 9, dated February 23, 2000 [grounding switch]

IEEE Std 765-2002, IEEE Standard for Preferred Power Supply (PPS) for Nuclear Power Generating Stations

NUREG-0800, USNRC Standard Review Plan Section 8.2 Offsite Power

Watts Bar Supplementary Safety Evaluation Report No. 13 dated April 1994 Section 8.2 Offsite Electric Power System

Asset Schedule maintenance Sheet for ground switch 86G1

Section 06

Fire Protection Report, Part II, Section 9.1, Fire Brigade Staffing

WBNP Facility Operating License

10 CFR 50.72 report regarding implementation of the 10 CFR 50.59(x)

TSC logs

Control Room logs