



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

November 23, 2009

10 CFR 50.90  
10 CFR 50.4

WBN-TS-09-23

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

Watts Bar Nuclear Plant, Units 1 and 2  
Facility Operating License No. NPF-90  
NRC Docket Nos. 50-390 and 50-391

Subject: **Request for Approval of the Watts Bar Nuclear Plant Cyber Security Plan**

Reference: Letter from Nuclear Energy Institute to NRC, "Endorsement of NEI 08-09, Cyber Security Plan for Nuclear Power Reactors, Revision 3," dated September 15, 2009

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," the Tennessee Valley Authority (TVA) is submitting a request for an amendment to License NPF-90 for Watts Bar Nuclear Plant (WBN) Unit 1.

As required by 10 CFR 73.54, "Protection of digital computer and communication systems and networks," this proposed amendment requests NRC approval of the Watts Bar Nuclear Plant Cyber Security Plan, provides an Implementation Schedule, and adds a sentence to the existing Unit 1 Operating License's Physical Protection license condition to require WBN Unit 1 to fully implement and maintain in effect all provisions of the Commission approved Cyber Security Plan.

This proposed amendment conforms to the model application provided to the NRC by the referenced letter.

ENCLOSURES 2 AND 3 TO THIS LETTER CONTAIN SECURITY-RELATED INFORMATION. SECURITY-RELATED INFORMATION CLASSIFICATION DOES NOT APPLY TO THIS PAGE WHEN SEPARATED FROM ENCLOSURES 2 AND 3.

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U.S. Nuclear Regulatory Commission  
Page 2  
November 23, 2009

Enclosure 1 provides an evaluation of the proposed change. Enclosure 1 also contains the following attachments:

- Attachment 1 provides the existing Facility Operating License page marked up to show the proposed change for WBN Unit 1.
- Attachment 2 provides the proposed Facility Operating License change in final typed format for WBN Unit 1.

Enclosure 2 provides a copy of the Watts Bar Nuclear Plant Cyber Security Plan Implementation Schedule for Units 1 and 2. Implementation of the Watts Bar Nuclear Plant Cyber Security Plan will be in accordance with this implementation schedule. TVA requests that Enclosure 2, which contains sensitive information, be withheld from public disclosure in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding."

Enclosure 3 provides a copy of the Watts Bar Nuclear Plant Cyber Security Plan which is a standalone document that will be incorporated by reference into the Watts Bar Nuclear Plant Physical Security Plan upon approval. TVA requests that Enclosure 3, which contains sensitive information, be withheld from public disclosure in accordance with 10 CFR 2.390. Consistent with common licensing practice, the Cyber Security Plan is written in the present tense, including discussions of procedures, processes and programs associated with cyber security that are not yet implemented. The Cyber Security Plan, including the associated procedures, processes and programs, will be implemented in accordance with the implementation schedule provided in Enclosure 2.

In accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter, with Enclosure 1, to the designated Tennessee state official. Since Enclosures 2 and 3 contain security-related information, they will be made available for review onsite, as necessary.

U.S. Nuclear Regulatory Commission  
Page 3  
November 23, 2009

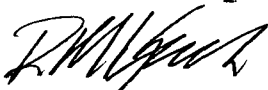
TVA requests an implementation period in accordance with the implementation schedule provided in Enclosure 2 of this letter.

There are no regulatory commitments associated with this license amendment request.

If you should have any questions regarding this submittal, please contact Fred Mashburn at (423) 751-8817.

I declare under penalty of perjury that the foregoing is true and correct.  
Executed on this 23rd day of November, 2009.

Respectfully,



R. M. Krich  
Vice President  
Nuclear Licensing

Enclosure 1: Evaluation of Proposed Change  
Enclosure 2: Watts Bar Nuclear Plant Cyber Security Plan Implementation Schedule  
Enclosure 3: Watts Bar Nuclear Plant Cyber Security Plan

cc: (Enclosures)

NRC Regional Administrator – Region II  
NRC Senior Resident Inspector – Watts Bar Nuclear Plant  
Director, Division of Radiological Health – State of Tennessee (w/o Enclosures 2 and 3)

**Enclosure 1**

**Evaluation of Proposed Change**

**Request for Approval of the Watts Bar Nuclear Plant Cyber Security Plan**

- 1.0 Summary Description
- 2.0 Detailed Description
- 3.0 Technical Evaluation
- 4.0 Regulatory Evaluation
  - 4.1 Applicable Regulatory Requirements / Criteria
  - 4.2 Significant Hazards Consideration
- 5.0 Environmental Consideration
- 6.0 References

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**ATTACHMENTS**

Attachment 1 - Proposed Facility Operating License Changes (Marked-Up)

Attachment 2 – Proposed Facility Operating License Changes (Re-Typed)

ENCLOSURES 2 AND 3 TO THIS LETTER CONTAIN SECURITY-RELATED INFORMATION. SECURITY-RELATED INFORMATION CLASSIFICATION DOES NOT APPLY TO THIS PAGE WHEN SEPARATED FROM ENCLOSURES 2 AND 3.

## **1.0 SUMMARY DESCRIPTION**

The proposed license amendment request (LAR) includes the proposed Watts Bar Nuclear Plant Cyber Security Plan (Plan), an Implementation Schedule, and a proposed sentence to be added to the existing operating license's Physical Protection license condition for Watts Bar Nuclear Plant (WBN) Unit 1.

## **2.0 DETAILED DESCRIPTION**

The proposed license amendment request (LAR) includes three parts: the proposed Plan, an Implementation Schedule, and a proposed sentence to be added to the existing Facility Operating License (FOL) Physical Protection license condition to require WBN Unit 1 to fully implement and maintain in effect all provisions of the Commission approved cyber security plan as required by 10 CFR 73.54, "Protection of digital computer and communication systems and networks." On March 27, 2009, the Federal Register notice issued the final rule that amended 10 CFR Part 73, "Physical Protection of Plants and Materials." The regulations in 10 CFR 73.54 establish the requirements for a cyber security program. This regulation specifically requires each licensee currently licensed to operate a nuclear power plant under Part 50 of this chapter to submit a cyber security plan that satisfies the requirements of the Rule. Each submittal must include a proposed implementation schedule and implementation of the licensee's cyber security program must be consistent with the approved schedule. The background for this application is addressed by the NRC Notice of Availability published on March 27, 2009, 74 FR 13926 (Reference 6.1).

## **3.0 TECHNICAL EVALUATION**

Federal Register notice 74 FR 13926 issued the final rule that amended 10 CFR Part 73. Cyber security requirements are codified as new 10 CFR 73.54 and are designed to provide high assurance that digital computer and communication systems and networks are adequately

protected against cyber attacks up to and including the design basis threat established by 10 CFR 73.1(a)(1)(v). These requirements are substantial improvements upon the requirements imposed by EA-02-026 (Reference 6.2).

NEI 08-09, "Cyber Security Plan Template," provides an approach for complying with the Commission's regulations for protecting digital computers, communications systems, and networks. NEI 08-09 has been submitted to the NRC (Reference 6.3) for use by licensees in development of their own cyber security plans. The Watts Bar Nuclear Plant Cyber Security Plan is in accordance with NEI 08-09 (Reference 6.3) with the exception that Appendix A, Table 1, "Systems Within the Scope of 10 CFR 73.54," and the associated references to Table 1 have not been included in the Cyber Security Plan. The removal of Table 1 was based on NRC feedback and is considered acceptable since the Table 1 listing of systems within the scope of 10 CFR 73.54 will be available for inspection on site.

This LAR includes the proposed Plan (Enclosure 3) that conforms to the template provided in NEI 08-09. In addition the LAR includes the proposed change to the existing FOL license condition for "Physical Protection" (Attachments 1 and 2) for WBN Unit 1. Finally, the LAR contains the proposed Implementation Schedule (Enclosure 2) as required by 10 CFR 73.54.

#### **4.0 REGULATORY EVALUATION**

##### **4.1 APPLICABLE REGULATORY REQUIREMENTS / CRITERIA**

This LAR is submitted pursuant to 10 CFR 73.54 which requires licensees currently licensed to operate a nuclear power plant under 10 CFR 50 to submit a Cyber Security Plan as specified in 10 CFR 50.4, "Written communications," and 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit."

##### **4.2 SIGNIFICANT HAZARDS CONSIDERATION**

TVA has evaluated the proposed changes using the criteria in 10 CFR 50.92, "Issuance of amendment," and has determined that the proposed changes do not involve a significant

hazards consideration. An analysis of the issue of no significant hazards consideration is presented below:

**Criterion 1: The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.**

The proposed change is required by 10 CFR 73.54 and includes three parts. The first part is the submittal of the Plan for NRC review and approval. The Plan conforms to the template provided in NEI 08-09 and provides a description of how the requirements of the Rule will be implemented at WBN Unit 1. The Plan establishes the licensing basis for the Watts Bar Nuclear Plant Cyber Security Program for WBN Unit 1. The Plan establishes how to achieve high assurance that nuclear power plant digital computer and communication systems and networks associated with the following are adequately protected against cyber attacks up to and including the design basis threat:

1. Safety-related and important-to-safety functions,
2. Security functions,
3. Emergency preparedness functions including offsite communications, and
4. Support systems and equipment which if compromised, would adversely impact safety, security, or emergency preparedness functions.

Part one of the proposed change is designed to achieve high assurance that the systems are protected from cyber attacks. The Plan itself does not require any plant modifications. However, the Plan does describe how plant modifications which involve digital computer systems are reviewed to provide high assurance of adequate protection against cyber attacks, up to and including the design basis threat as defined in the Rule. The proposed change does not alter the plant configuration, require new plant equipment to be installed, alter accident analysis assumptions, add any initiators, or effect the function of plant systems or the manner in which systems are operated, maintained, modified, tested, or inspected. The first part of the proposed change is designed to achieve high assurance that the systems within the scope of

E 1-4

the Rule are protected from cyber attacks and has no impact on the probability or consequences of an accident previously evaluated.

The second part of the proposed change is an Implementation Schedule. The third part adds a sentence to the existing FOL license condition for Physical Protection for WBN Unit 1. Both of these changes are administrative and have no impact on the probability or consequences of an accident previously evaluated.

Therefore, it is concluded that this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

**Criterion 2: The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The proposed change is required by 10 CFR 73.54 and includes three parts. The first part is the submittal of the Plan for NRC review and approval. The Plan conforms to the template provided by NEI 08-09 and provides a description of how the requirements of the Rule will be implemented at WBN Unit 1. The Plan establishes the licensing basis for the Watts Bar Nuclear Plant Cyber Security Program for WBN Unit 1. The Plan establishes how to achieve high assurance that nuclear power plant digital computer and communication systems and networks associated with the following are adequately protected against cyber attacks up to and including the design basis threat:

1. Safety-related and important-to-safety functions,
2. Security functions,
3. Emergency preparedness functions including offsite communications, and
4. Support systems and equipment which if compromised, would adversely impact safety, security, or emergency preparedness functions.

Part one of the proposed change is designed to achieve high assurance that the systems within



the scope of the Rule are protected from cyber attacks. The Plan itself does not require any plant modifications. However, the Plan does describe how plant modifications involving digital computer systems are reviewed to provide high assurance of adequate protection against cyber attacks, up to and including the design basis threat defined in the Rule. The proposed change does not alter the plant configuration, require new plant equipment to be installed, alter accident analysis assumptions, add any initiators, or effect the function of plant systems or the manner in which systems are operated, maintained, modified, tested, or inspected. The first part of the proposed change is designed to achieve high assurance that the systems within the scope of the Rule are protected from cyber attacks and does not create the possibility of a new or different kind of accident from any previously evaluated.

The second part of the proposed change is an Implementation Schedule. The third part adds a sentence to the existing FOL license condition for Physical Protection for WBN Unit 1. Both of these changes are administrative and do not create the possibility of a new or different kind of accident from any previously evaluated.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

**Criterion 3: The proposed change does not involve a significant reduction in a margin of safety.**

The proposed change is required by 10 CFR 73.54 and includes three parts. The first part is the submittal of the Plan for NRC review and approval. The Plan conforms to the template provided by NEI 08-09 and provides a description of how the requirements of the Rule will be implemented at WBN Unit 1. The Plan establishes the licensing basis for the Watts Bar Nuclear Plant Cyber Security Program for WBN Unit 1. The Plan establishes how to achieve high assurance that nuclear power plant digital computer and communication systems and networks associated with the following are adequately protected against cyber attacks up to and including the design basis threat:

E 1-6

ENCLOSURES 2 AND 3 TO THIS LETTER CONTAIN SECURITY-RELATED INFORMATION. SECURITY-RELATED INFORMATION CLASSIFICATION DOES NOT APPLY TO THIS PAGE WHEN SEPARATED FROM ENCLOSURES 2 AND 3.

1. Safety-related and important-to-safety functions,
2. Security functions,
3. Emergency preparedness functions including offsite communications, and
4. Support systems and equipment which if compromised, would adversely impact safety, security, or emergency preparedness functions.

Part one of the proposed change is designed to achieve high assurance that the systems within the scope of the Rule are protected from cyber attacks. Plant safety margins are established through Limiting Conditions for Operation, Limiting Safety System Settings and Safety limits specified in the Technical Specifications. Because there is no change to these established safety margins, the proposed change does not involve a significant reduction in a margin of safety.

The second part of the proposed change is an Implementation Schedule. The third part adds a sentence to the existing FOL license condition for Physical Protection for WBN Unit 1. Both of these changes are administrative and do not involve a significant reduction in a margin of safety.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, the TVA concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of no significant hazards consideration is justified.

#### **4.3 CONCLUSION**

In conclusion, based on the considerations discussed above: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) such activities will be conducted in compliance with the Commission's regulations; and (3) the issuance of the amendment will not be inimical to the common defense and security

or to the health and safety of the public.

## **5.0 ENVIRONMENTAL CONSIDERATION**

The proposed amendment establishes the licensing basis for a Cyber Security Program for WBN Unit 1 and will be a part of the Physical Security Plan. This proposed amendment will not involve any significant construction impacts. Pursuant to 10 CFR 51.22(c)(12) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## **6.0 REFERENCES**

1. Federal Register Notice, Final Rule 10 CFR Part 73, Power Reactor Security Requirements, published on March 27, 2009, 74 FR 13926.
2. EA-02-026, Order Modifying Licenses, Safeguards and Security Plan Requirements, issued February 25, 2002.
3. Letter from Nuclear Energy Institute to NRC, "Endorsement of NEI 08-09, Cyber Security Plan for Nuclear Power Reactors, Revision 3," dated September 15, 2009.

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~~SECURITY-RELATED INFORMATION - WITHHOLD UNDER 10 CFR 2.390~~

**Attachment 1**

**Proposed Facility Operating License Change (Marked-Up)**

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~~SECURITY-RELATED INFORMATION - WITHHOLD UNDER 10 CFR 2.390~~

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- (2) The facility was previously granted an exemption from the criticality monitoring requirements of 10 CFR 70.24 (see Special Nuclear Material License No. SNM-1861 dated September 5, 1979). The technical justification is contained in Section 9.1 of Supplement 5 to the Safety Evaluation Report, and the staff's environmental assessment was published on April 18, 1985 (50 FR 15516). The facility is hereby exempted from the criticality alarm system provisions of 10 CFR 70.24 so far as this section applies to the storage of fuel assemblies held under this license.
- (3) The facility requires an exemption from 10 CFR 73.55(c)(10). The justification for this exemption is contained in Section 13.6.9 of Supplement 15 and 20 to the Safety Evaluation Report. The staff's environmental assessment was published on April 25, 1995 (60 FR 20291). Pursuant to 10 CFR 73.5, the facility is exempted from the stated implementation schedule of the surface vehicle bomb rule, and may implement the same as late as February 17, 1996.
- (4) The facility was previously granted an exemption from certain requirements of 10 CFR 73.55(d)(5) relating to the returning of picture badges upon exit from the protected areas, such that individuals not employed by TVA who are authorized unescorted access into protected areas can take their badges offsite (see 59 FR 66061, December 22, 1994). The granting of this exemption is hereby affirmed.
- (5) The facility was previously granted an exemption from certain requirements of 10 CFR 50, Appendix E, such that the State of Tennessee, which is within the ingestion exposure pathway emergency planning zone, need not participate in the November 1995 full-participation exercise (see 60 FR 54526, October 24, 1995). The granting of this exemption is hereby affirmed.

E. TVA shall fully implement and maintain in effect all provisions of the Commission approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Watts Bar Nuclear Plant Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 3," submitted by letter dated May 16, 2006.

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(1)

F. TVA shall implement and maintain in effect all provisions of the approved fire protection program as described in the Fire Protection Report for the facility, as approved in Supplements 18 and 19 of the SER (NUREG-0847) subject to the following provision:

TVA may make changes to the approved fire protection program without prior approval of the Commission, only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

- (2) The licensee shall fully implement and maintain in effect all provisions of the Commission-approved Watts Bar Nuclear Plant Cyber Security Plan submitted by letter dated November 23, 2009 and withheld from public disclosure in accordance with 10 CFR 2.390.

Revised by letter dated August 9, 2007  
and Correction letter dated September 18, 2007

- G. Except as otherwise provided in the Technical Specifications (Appendix A to this license) or Environmental Protection Plan (Appendix B to this license), TVA shall report any violations of the requirements contained in Section 2.C of this license in the following manner: initial notification shall be made within twenty-four (24) hours to the NRC Operations Center via the Emergency Notification System with written follow-up within 30 days in accordance with the procedures described in 10 CFR 50.73 (b), (c), and (e).
- H. The licensee shall have and maintain financial protection of such types and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

~~SECURITY-RELATED INFORMATION WITHHOLD UNDER 10 CFR 2.390~~

Attachment 2

Proposed Facility Operating License Change (Re-Typed)

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~~SECURITY-RELATED INFORMATION WITHHOLD UNDER 10 CFR 2.390~~

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- (2) The facility was previously granted an exemption from the criticality monitoring requirements of 10 CFR 70.24 (see Special Nuclear Material License No. SNM-1861 dated September 5, 1979). The technical justification is contained in Section 9.1 of Supplement 5 to the Safety Evaluation Report, and the staff's environmental assessment was published on April 18, 1985 (50 FR 15516). The facility is hereby exempted from the criticality alarm system provisions of 10 CFR 70.24 so far as this section applies to the storage of fuel assemblies held under this license.
  - (3) The facility requires an exemption from 10 CFR 73.55(c)(10). The justification for this exemption is contained in Section 13.6.9 of Supplement 15 and 20 to the Safety Evaluation Report. The staff's environmental assessment was published on April 25, 1995 (60 FR 20291). Pursuant to 10 CFR 73.5, the facility is exempted from the stated implementation schedule of the surface vehicle bomb rule, and may implement the same as late as February 17, 1996.
  - (4) The facility was previously granted an exemption from certain requirements of 10 CFR 73.55(d)(5) relating to the returning of picture badges upon exit from the protected areas, such that individuals not employed by TVA who are authorized unescorted access into protected areas can take their badges offsite (see 59 FR 66061, December 22, 1994). The granting of this exemption is hereby affirmed.
  - (5) The facility was previously granted an exemption from certain requirements of 10 CFR 50, Appendix E, such that the State of Tennessee, which is within the ingestion exposure pathway emergency planning zone, need not participate in the November 1995 full-participation exercise (see 60 FR 54526, October 24, 1995). The granting of this exemption is hereby affirmed.
- E. (1) TVA shall fully implement and maintain in effect all provisions of the Commission approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Watts Bar Nuclear Plant Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 3," submitted by letter dated May 16, 2006.
- (2) The licensee shall fully implement and maintain in effect all provisions of the commission-approved Watts Bar Nuclear Plant Cyber Security Plan submitted by letter dated November 23, 2009, and withheld from public disclosure in accordance with 10 CFR 2.390.

Revised by letter dated August 9, 2007  
 and Correction letter dated September 18, 2007  
 Amendment No. [##]



- F. TVA shall implement and maintain in effect all provisions of the approved fire protection program as described in the Fire Protection Report for the facility, as approved in Supplements 18 and 19 of the SER (NUREG-0847) subject to the following provision:

TVA may make changes to the approved fire protection program without prior approval of the Commission, only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

- G. Except as otherwise provided in the Technical Specifications (Appendix A to this license) or Environmental Protection Plan (Appendix B to this license), TVA shall report any violations of the requirements contained in Section 2.C of this license in the following manner: initial notification shall be made within twenty-four (24) hours to the NRC Operations Center via the Emergency Notification System with written follow-up within 30 days in accordance with the procedures described in 10 CFR 50.73 (b), (c), and (e).
- H. The licensee shall have and maintain financial protection of such types and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.