



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 29, 2014

Mr. Joseph W. Shea  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
1101 Market Street, LP 3D-C  
Chattanooga, TN 37402-2801

**SUBJECT: BROWNS FERRY NUCLEAR PLANT UNITS 1, 2, AND 3 - ISSUANCE OF AMENDMENT REGARDING REVISION TO CYBER SECURITY PLAN IMPLEMENTATION SCHEDULE COMPLETION DATE AND LICENSE CONDITIONS (TAC NOS. MF4055, MF4056, AND MF4057)**

Dear Mr. Shea:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment Nos. 286, 312, and 271 to Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68 for the Browns Ferry Nuclear Plant (BFN), Unit Nos. 1, 2, and 3, respectively. The amendments consist of changes to the licenses in response to Tennessee Valley Authority's (TVA's, the licensee's) application dated April 29, 2014, as supplemented by letter dated May 27, 2014.

The amendments revise the date of Cyber Security Plan (CSP) Implementation Schedule Milestone 8 and the existing physical protection license conditions in the facility operating license for BFN Unit Nos. 1, 2, and 3. Milestone 8 of the CSP implementation schedule concerns the full implementation of the CSP.

The Nuclear Regulatory Commission (NRC, Commission) staff has completed its review of the information provided by the licensee. The NRC staff's safety evaluation (SE) is enclosed. The NRC staff has determined that its documented SE (Enclosure 4) does not contain Sensitive Security-Related Information pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.390, "Public inspections, exemptions, requests for withholding." However, the NRC will delay placing the enclosed SE in the public document room for a period of 10 working days from the date of this letter to provide TVA with the opportunity to comment on any sensitive aspects of the SE. If you believe that any information in Enclosure 4 contains sensitive information, please identify such information line-by-line and define the basis for withholding pursuant to the criteria of 10 CFR 2.390. After 10 working days, the enclosed SE will be made publicly available.

J. Shea

- 2 -

A copy of the staff's related SE is enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, appearing to read 'Farideh E. Saba', written in a cursive style.

Farideh E. Saba, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-259, 50-260, and 50-296

Enclosures:

1. Amendment No. 286 to  
to License No. DPR-33
2. Amendment No. 312 to  
to License No. DPR-52
3. Amendment No. 271 to  
to License No. DPR-68
4. Safety Evaluation

cc with Enclosures 1, 2, 3, and 4: Addressee only

cc with Enclosures 1, 2, 3, and 4: Distribution via Listserv (10 days after issuance of the amendments to the licensee.)



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 286  
Renewed License No. DPR-33

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Tennessee Valley Authority (the licensee), dated April 29, 2014, as supplemented by letter dated May 27, 2014, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the renewed license is amended by changes to the following paragraphs:

Paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-33 is hereby amended to read as follows:

(2) Technical Specifications

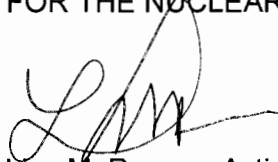
The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 286, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

Paragraph 2.C.(11)(b) of Renewed Facility Operating License No. DPR-33 is hereby amended to read as follows:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 279, as amended by changes approved by License Amendment No. 286.

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days of the date of issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on April 29, 2014, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Lisa M. Regner, Acting Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License

Date of Issuance: September 29, 2014

ATTACHMENT TO LICENSE AMENDMENT NO. 286

RENEWED FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Replace the following pages of the Renewed Facility Operating License No. DPR-33 with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License

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- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or equipment and instrument calibration or associated with radioactive apparatus or components;
  - (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 3458 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 286, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 234 to Facility Operating License DPR-33, the first performance is due at the end of the first surveillance interval that begins at implementation of the Amendment 234. For SRs that existed prior to Amendment 234, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the surveillance was last performed prior to implementation of Amendment 234.

- (8) Deleted.
- (9) Deleted.
- (10) Deleted.
- (11)(a) The licensee 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 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Browns Ferry Nuclear Plant Physical Security Plan, Training and Qualification Plan, and Contingency Plan," submitted by letter dated April 28, 2006.
- (b) The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 279, as amended by changes approved by License Amendment No. 286.
- (12) Deleted.
- (13) Browns Ferry Nuclear Plant shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Final Safety Analysis Report for BFN as approved in the safety evaluations dated December 8, 1988; March 31, 1993; April 1, 1993; November 2, 1995; April 25, 2007, and Supplement dated November 3, 1989; subject to the following provision:

The licensee 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.
- (14) The licensee shall maintain the Augmented Quality Program for the Standby Liquid Control System to provide quality control elements to ensure component reliability for the required alternative source term function defined in the Updated Final Safety Analyses Report (UFSAR).
- (15) The licensee is required to confirm that the conclusions made in TVA's letter dated September 17, 2004, for the turbine building remain acceptable using seismic demand accelerations based on dynamic seismic analysis prior to the restart of Unit 1.
- (16) Upon implementation of Amendment No. 275, adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air leakage as required by SR 3.7.3.4, in accordance with TS 5.5.13.c.(i), the assessment of the CRE habitability as required by TS 5.5.13.c.(ii), and the measure of CRE pressure as required by TS 5.5.13.d, shall be considered met.



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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 312  
Renewed License No. DPR-52

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Tennessee Valley Authority (the licensee), dated April 29, 2014, as supplemented by letter dated May 27, 2014, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.



2. Accordingly, the renewed license is amended by changes to the following paragraphs:

Paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 312, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

Paragraph 2.C.(11)(b) of Renewed Facility Operating License No. DPR-52 is hereby amended to read as follows:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 306, as amended by changes approved by License Amendment No. 312.

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days of the date of issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on April 29, 2014, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Lisa M. Regner, Acting Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License

Date of Issuance: September 29, 2014

ATTACHMENT TO LICENSE AMENDMENT NO. 312  
RENEWED FACILITY OPERATING LICENSE NO. DPR-52  
DOCKET NO. 50-260

Replace the following pages of the Renewed Facility Operating License No. DPR-52 with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License

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sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or equipment and instrument calibration or associated with radioactive apparatus or components;
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 3458 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 312 are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 253 to Facility Operating License DPR-52, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 253. For SRs that existed prior to Amendment 253, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the surveillance was last performed prior to implementation of Amendment 253.

- 3) The licensee is authorized to relocate certain requirements included in Appendix A and the former Appendix B to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's

- (8) Deleted.
- (9) Deleted.
- (10) Deleted.
- (11)(a) The licensee 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 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Browns Ferry Nuclear Plant Physical Security Plan, Training and Qualification Plan, and Contingency Plan," submitted by letter dated April 28, 2006.
- (b) The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 306, as amended by changes approved by License Amendment No. 312.
- (12) Deleted.
- (13) Deleted.
- (14) Browns Ferry Nuclear Plant shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Final Safety Analysis Report for BFN as approved in the safety evaluations dated December 8, 1988; March 31, 1993; April 1, 1993; November 2, 1995; April 25, 2007, and Supplement dated November 3, 1989; subject to the following provision:

The licensee 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.
- (15) The licensee shall maintain the Augmented Quality Program for the Standby Liquid Control System to provide quality control elements to ensure component reliability for the required alternative source term function defined in the Updated Final Safety Analyses Report (UFSAR).
- (16) Upon complementation of Amendment No. 302, adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.3.4, in accordance with TS 5.5.13.c(i), the assessment of the CRE habitability as required by TS 5.5.13.c(ii), and the measure of CRE pressure as required by TS 5.5.13.d, shall be considered met.



UNITED STATES  
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WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 271  
Renewed License No. DPR-68

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Tennessee Valley Authority (the licensee), dated April 29, 2014, as supplemented by letter dated May 27, 2014, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the renewed license is amended by changes to the following paragraphs:

Paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-68 is hereby amended to read as follows:

(2) Technical Specifications

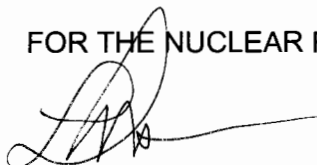
The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 271 are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

Paragraph 2.C.(6)(b) of Renewed Facility Operating License No. DPR-68 is hereby amended to read as follows:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 265, as amended by changes approved by License Amendment No. 271.

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days of the date of issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on April 29, 2014, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Lisa M. Regner, Acting Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License

Date of Issuance: September 29, 2014

ATTACHMENT TO LICENSE AMENDMENT NO. 271

RENEWED FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

Replace the following pages of the Renewed Facility Operating License No. DPR-68 with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License

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- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or equipment and instrument calibration or associated with radioactive apparatus or components;
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 3458 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 271, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 212 to Facility Operating License DPR-68, the first performance is due at the end of the first surveillance interval that begins at implementation of the Amendment 212. For SRs that existed prior to Amendment 212, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the surveillance was last performed prior to implementation of Amendment 212.



- (3) The licensee is authorized to relocate certain requirements included in Appendix A and the former Appendix B to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's application dated September 6, 1996; as supplemented May 1, August 14, November 5 and 14, December 3, 4, 11, 22, 23, 29, and 30, 1997; January 23, March 12, April 16, 20, and 28, May 7, 14, 19, and 27, and June 2, 5, 10 and 19, 1998; evaluated in the NRC staff's Safety Evaluation enclosed with this amendment. This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment.
- (4) Deleted.
- (5) Classroom and simulator training on all power uprate related changes that affect operator performance will be conducted prior to operating at uprated conditions. Simulator changes that are consistent with power uprate conditions will be made and simulator fidelity will be validated in accordance with ANSI/ANS 3.5-1985. Training and the plant simulator will be modified, as necessary, to incorporate changes identified during startup testing. This amendment is effective immediately.
- (6)(a) The licensee 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 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Browns Ferry Nuclear Plant Physical Security Plan, Training and Qualification Plan, and Contingency Plan," Revision 4, submitted by letter dated April 28, 2006.
- (b) The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 265, as amended by changes approved by License Amendment No. 271.
- (7) Browns Ferry Nuclear Plant shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Final Safety Analysis Report for BFN as approved in the safety evaluations dated December 8, 1988; March 31, 1993; April 1, 1993; November 2, 1995; April 25, 2007, and Supplement dated November 3, 1989; subject to the following provision:

The licensee 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.



UNITED STATES  
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 286

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-33,

AMENDMENT NO. 312 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-52,

AMENDMENT NO. 271 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNIT NOS. 1, 2, AND 3

DOCKET NOS. 50-259, 50-260, AND 50-296

1.0 INTRODUCTION

By application dated April 29, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14133A472), as supplemented by letter dated May 27, 2014 (ADAMS Accession No. ML14149A316), the Tennessee Valley Authority (TVA, the licensee) requested a change to the renewed facility operating licenses (FOLs) for Browns Ferry Nuclear Plant (BFN) Unit Nos. 1, 2, and 3. The proposed change would revise the date of cyber security plan (CSP) Implementation Schedule Milestone 8 and the existing license conditions in the facility operating license. Milestone 8 of the CSP implementation schedule concerns the full implementation of the CSP.

The supplement dated May 27, 2014, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on July 8, 2014 (79 FR 38582).

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) staff does not regard the CSP milestone implementation dates as regulatory commitments that can be changed unilaterally by the licensee, particularly in light of the regulatory requirement at Title 10 of *Code of Federal Regulations* (10 CFR) Section 73.54, that "[i]mplementation of the licensee's cyber security program must be consistent with the approved schedule." As the NRC staff explained in its letter to all operating reactor licensees dated May 9, 2011 (ADAMS Accession No. ML110980538), the implementation of the plan, including the key intermediate milestone dates and the full implementation date shall be in accordance with the implementation schedule

submitted by the licensee and approved by the NRC. All subsequent changes to the NRC-approved CSP implementation schedule, thus, will require prior NRC approval as required by 10 CFR 50.90.

The NRC staff reviewed and approved the licensee's existing CSP implementation schedule by License Amendment Nos. 279, 306, and 265, respectively, to renewed FOLs for BFN Unit Nos. 1, 2, and 3; concurrent with the incorporation of the CSP into the plant licensing bases. The NRC staff considered the following regulatory requirements and guidance in its review of the license amendment request (LAR) to modify the existing CSP implementation schedule:

- Section 73.54 of 10 CFR states: "Each [CSP] submittal must include a proposed implementation schedule. Implementation of the licensee's cyber security program must be consistent with the approved schedule."
- Amendment Nos. 279, 306, and 265 dated July 29, 2011, which approved the licensee's CSP and implementation schedule, included the following statement: "The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p)."
- In a publicly available NRC memorandum dated October 24, 2013 (ADAMS Accession No. ML13295A467), the NRC staff listed criteria to consider during evaluations of licensees' requests to postpone its cyber security program implementation date (commonly known as Milestone 8).

### 3.0 TECHNICAL EVALUATION

#### 3.1 Licensee's Requested Change

Amendment Nos. 279, 306, and 265 to renewed FOLs for BFN Unit Nos. 1, 2, and 3, respectively, were issued on July 29, 2011. The NRC staff also approved the licensee's CSP implementation schedule, as discussed in the safety evaluation issued with the amendments. The implementation schedule was submitted by the licensee based on a template prepared by Nuclear Energy Institute, which the NRC staff found acceptable for licensees to use to develop their CSP implementation schedules (ADAMS Accession No. ML110070348). The licensee's proposed implementation schedule for the cyber security program identified completion dates and bases for the following eight milestones:

- 1) Establish the Cyber Security Assessment Team;
- 2) Identify Critical Systems and Critical Digital Assets (CDAs);
- 3) Implement installation of a data diode device between lower level devices and higher level devices;
- 4) Implement the security control "Access Control for Portable and Mobile Devices";

- 5) Implement observation and identification of obvious cyber related tampering to existing insider mitigation rounds;
- 6) Identify, document, and implement cyber security controls in accordance with "Mitigation of Vulnerabilities and Application of Cyber Security Controls" for CDAs that could adversely impact the design function of physical security target set equipment;
- 7) Ongoing monitoring and assessment activities for those target set CDAs whose security controls have been implemented;
- 8) Fully implement the CSP (Milestone 8).

Currently, Milestone 8 of the licensee's CSP requires TVA to fully implement the CSP by September 30, 2014. In its April 29, 2014, application, TVA proposed to change the Milestone 8 completion date to July 31, 2017. The licensee's application addressed the eight criteria in the NRC's October 24, 2013, guidance memorandum. The licensee provided the following information pertinent to each of the criteria identified in the NRC guidance memorandum.

- 1) Identification of the specific requirement or requirements of the CSP that the licensee needs additional time to implement.

The licensee stated that the specific CSP requirement requiring additional time to implement is CSP Section 3.1.6, "Mitigation of Vulnerabilities and Application of Cyber Security Controls." It also noted that most of the remaining actions require an outage for implementation. The licensee provided a list of additional activities required to implement the CSP requirements.

- 2) Detailed justification that describes the reason the licensee requires additional time to implement the specific requirement or requirements identified.

The licensee reiterated that most of the activities in 1) above require an outage. The requested extension date allows for one additional refueling outage to methodically plan, implement, and test the required additions or changes and allows those additions or changes that require a design change to be performed within TVA milestone dates for refueling outage scope determination. Original schedules for the completion of the cyber security control assessments, and thus the implementation of remediation actions for deficient controls and other program areas as described above in 1), have been delayed in part due to additional actions TVA is taking that were not anticipated when the original schedules were set.

- 3) A proposed completion date for Milestone 8 consistent with the remaining scope of work to be conducted and the resources available.

The licensee proposed a Milestone 8 completion date of July 31, 2017. The licensee also stated that changing the completion date of Milestone 8 will encompass one additional refueling outage and provides adequate time to for the implementation of the remaining activities including those requiring design changes.

- 4) An evaluation of the impact that the additional time to implement the requirements will have on the effectiveness of the licensee's overall cyber security program in the context of milestones already completed.

The licensee indicated completion of activities associated with the CSP, as described in Milestones 1 through 7 and completed prior to December 31, 2012, provides a high degree of protection to ensure that digital computer and communication systems and networks associated with Safety, Security and Emergency Preparedness (SSEP) systems are sufficiently protected against cyber-attacks. It detailed activities completed for each milestone and noted several elements of Milestone 8 have already been implemented or will be implemented by the original Milestone 8 date of September 30, 2014. It provided details about the completed milestones and elements.

- 5) A description of the licensee's methodology for prioritizing completion of work for critical digital assets associated with significant safety consequences and with reactivity effects in the balance of plant.

The licensee stated its methodology for prioritizing completion of cyber security activities associated with significant SSEP consequences and with reactivity effects in the balance of plant focused on competing Milestones 1 through 7 by December 31, 2012, and implementation of remediation actions for Milestone 8 during the available refueling outages consistent with TVA outage planning and design change processes. Work that can be done with the units online is implemented consistent with work management processes and available resources. Prioritization of work was performed per TVA's work scheduling processes and was based on safety significance, required availability of significant systems, and consideration for all aspects and elements of risk management. The remaining actions to be completed for Milestone 8 will be implemented according to the scheduled unit refueling outages and will allow for one additional outage to implement actions that require a design change.

- 6) A discussion of the licensee's CSP performance up to the date of the license amendment request.

The licensee stated implementation of the requirements of Milestones 1 through 7 has been completed and provides a high degree of protection against cyber security related attacks, including radiological sabotage, during full program implementation. A Quality Assurance (QA) audit conducted under the physical security audit program included cyber security and found no significant deficiencies. A self-assessment of cyber security milestones was completed in July 2013 with no significant deficiencies noted. Issues to address program improvements that were identified during the audit and assessment activities have been entered into the Corrective Action Program (CAP). QA audits will continue to monitor the performance of the cyber security program per the current QA biennial audit schedule. The licensee provided a discussion about ongoing monitoring, logging, and assessment activities and performance monitoring. It closed its discussion by stating that the actions described show good evidence of strong cyber security program performance.

- 7) A discussion of cyber security issues pending in the licensee's CAP program.

The licensee indicated the following cyber security actions were pending in the CAP or would be by the original completion date: remediation actions, procedure issuances and revisions, lessons learned issues and improvement items pertaining to implemented portions of the cyber security program, QA findings, self-assessment findings, and conditions adverse to quality.

- 8) A discussion of modifications completed to support the cyber security program and a discussion of pending cyber security modifications.

The licensee provided a discussion of completed modifications and pending modifications. Additionally, the licensee stated implementation of the requirements of Milestones 1 through 7 has been completed and provides a high degree of protection against cyber-attacks, including radiological sabotage, during full program implementation. Many of the controls which do not require a design change have already been implemented. The control assessments for all SSEP systems will be complete by the original Milestone 8 completion date of September 30, 2014. A QA audit conducted under the physical security audit program included cyber security and found no significant deficiencies. A self-assessment of cyber security milestones was completed in July, 2013 with no significant deficiencies noted. Issues to address program improvements which were identified during the audit and assessment activities have been entered into the CAP. QA audits will continue to monitor the performance of the cyber security program per the current QA biennial audit schedule.

### 3.2 NRC Staff Evaluation

The NRC staff has evaluated the licensee's application using the regulatory requirements and the guidance set forth above. The NRC staff's evaluation is set forth below.

The licensee stated the CSP requirement requiring additional time to implement is CSP Section 3.1.6. It also noted that most of the remaining actions require an outage for implementation. The licensee provided a list of additional activities required to implement the CSP requirement.

The licensee indicated that completion of the activities associated with the CSP, as described in Milestones 1 through 7 and completed prior to December 31, 2012, provide a high degree of protection to ensure that the most significant digital computer and communication systems and networks associated with SSEP systems are already protected against cyber-attacks. It detailed activities completed for each milestone and noted that several elements of Milestone 8 have already been implemented or will be implemented by the original Milestone 8 date of September 30, 2014. It provided details about the completed milestones and elements. The NRC staff finds that the licensee's site is much more secure after implementation of Milestones 1 through 7, because the activities the licensee completed mitigate the most significant cyber-attack vectors for the most significant CDAs.

The licensee has stated that the scope of actions required to fully implement its CSP were not anticipated when the implementation schedule was originally determined. For example, the original schedules for the completion of the cyber security control assessments and the implementation of remediation actions for deficient controls and other program areas, have been delayed in part due to additional actions TVA is taking that were not anticipated when the original schedules were set. The NRC staff has had extensive interaction with the nuclear industry since licensees first developed their CSP implementation schedules. Based on this interaction, the NRC staff recognizes that CDA assessment work is much more complex and resource intensive than originally anticipated and that the licensee has a large number of additional tasks not originally considered when developing its CSP implementation schedule. Accordingly, the NRC staff finds that the licensee's request for additional time to implement Milestone 8 is reasonable given the unanticipated complexity and scope of the work required to come into full compliance with its CSP.

The licensee proposed a Milestone 8 completion date of July 31, 2017. The licensee stated that changing the completion date of Milestone 8 allows for one additional refueling outage per unit to methodically plan, implement, and test the required additions or changes and allows those additions or changes that require a design change to be performed within TVA milestone dates for refueling outage scope determination. The licensee stated its methodology for prioritizing completion of cyber security activities associated with significant safety, security, or emergency preparedness consequences and with reactivity effects in the balance of plant focused on completing Milestones 1 through 7 by December 31, 2012, and implementation of remediation actions for Milestone 8 during the available refueling outages consistent with TVA outage planning and design change processes. Work that can be done with the units online is implemented consistent with work management processes and available resources. Prioritization of work was performed per TVA's work scheduling processes and was based on safety significance, required availability of significant systems, and consideration for all aspects and elements of risk management. The remaining actions to be completed for Milestone 8 will be implemented according to the scheduled unit refueling outages and will allow for one additional outage to implement actions which require a design change. The NRC staff finds that based on the large number of digital assets described above and the limited resources with the appropriate expertise to perform these activities, the licensee's methodology for prioritizing work on CDAs is appropriate. The NRC staff further finds that the licensee's request to delay final implementation of the CSP until July 31, 2017, is reasonable given the complexity of the remaining unanticipated work and the need to perform certain work, including design changes, during scheduled fuel outages.

### 3.3 Technical Evaluation Conclusion

The NRC staff concludes that the licensee's request to delay full implementation of its CSP until July 31, 2017, is reasonable for the following reasons: (i) the licensee's implementation of Milestones 1 through 7 provides mitigation for significant cyber-attack vectors for the most significant CDAs as discussed in the staff conclusion above; (ii) the scope of the work required to come into full compliance with the CSP implementation schedule was much more complicated than anticipated and not reasonably foreseeable; and (iii) the licensee has reasonably prioritized and scheduled the work required to come into full compliance with its CSP implementation schedule.

### 3.4 Revision to License Condition

By letter dated April 29, 2014, the licensee proposed to modify Paragraph 2.C(11)(b) of Renewed FOL No. DPR-33, to modify Paragraph 2.C(11)(b) of Renewed FOL No. DPR-52, and to modify Paragraph 2.C(6)(b) of Renewed FOL No. DPR-68, which provide license conditions to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved CSP.

The license condition proposed in the TVA's April 29, 2014, letter is modified by the NRC staff. The modification kept the reference to the original amendment approving the overall CSP, and added as revised by changes approved by license amendments for each unit. This makes the revised license condition more appropriate as this amendment focuses only on the extension of the implementation date for Milestone 8 and not the overall CSP.

The license condition in Paragraph 2.C(11)(b) of Renewed FOL No. DPR-33 for BFN Unit 1 is modified as follows:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 279, as amended by changes approved by License Amendment No. 286.

The license condition in Paragraph 2.C(11)(b) of Renewed FOL No. DPR-52 for BFN Unit 2 is modified as follows:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 306, as amended by changes approved by License Amendment No. 312.

The license condition in Paragraph 2.C(6)(b) of Renewed FOL No. DPR-68 for BFN Unit 3 is modified as follows:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee CSP was approved by License Amendment No. 265, as amended by changes approved by License Amendment No. 271.

### 3.5 Summary

Based on its review of the licensee's submission, the NRC staff concludes that the licensee's implementation of Milestones 1 through 7 adds additional protections which provide mitigation for significant cyber-attack vectors for the most significant CDAs; that the licensee's explanation



of the need for additional time is compelling, and that it is acceptable for TVA to complete implementation of Milestone 8, full implementation of the CSP by July 31, 2017. The NRC staff also concludes that, upon full implementation of the licensee's cyber security program, the requirements of the licensee's CSP and 10 CFR 73.54 will be met. Therefore, the NRC staff finds the proposed change acceptable.

The NRC staff does not regard the CSP milestone implementation dates as regulatory commitments that can be changed unilaterally by the licensee, particularly in light of the regulatory requirement at 10 CFR 73.54, that "[i]mplementation of the licensee's cyber security program must be consistent with the approved schedule." As the NRC staff explained in its letter to all operating reactor licensees dated May 9, 2011 (ADAMS Accession No. ML110980538), the implementation of the plan, including the key intermediate milestone dates and the full implementation date shall be in accordance with the implementation schedule submitted by the licensee and approved by the NRC. All subsequent changes to the NRC-approved CSP implementation schedule, thus, will require prior NRC approval as required by 10 CFR 50.90.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, Alabama State officials were notified of the proposed issuance of the amendment. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

This amendment relates solely to safeguards matters and does not involve any significant construction impacts. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(12). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

#### 6.0 CONCLUSION

The NRC staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that 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.

Principle Contributor: John Rycyna, NSIR

Date: September 29, 2014

J. Shea

- 2 -

A copy of the staff's related SE is enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

*/RA/*

Farideh E. Saba, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-259, 50-260, and 50-296

Enclosures:

1. Amendment No. 286 to License No. DPR-33
2. Amendment No. 312 to License No. DPR-52
3. Amendment No. 271 to License No. DPR-68
4. Safety Evaluation

cc with Enclosures 1, 2, 3, and 4: Addressee only

cc with Enclosures 1, 2, 3, and 4: Distribution via Listserv (10 days after issuance of the amendments to the licensee.)

DISTRIBUTION:

**NON-PUBLIC (No PDC/ListServ for 10 working days)**

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**ADAMS Accession No.: ML14247A536**

**\*via e-mail**

OFFICE	NRR/DORL/LPWB/PMIT	NRR/DORL/LPL2-2/PM	NRR/DORL/LPL2-2/LA	NSIR/CSD/D*
NAME	AMinarik (FSaba for)	FSaba	BClayton	RFelts
DATE	9/26/14	9/26/14	9/26/14	8/24/2014
OFFICE	OGC - NLO	NRR/DORL/LPL2-2/BC(A)	NRR/DORL/LPL2-2/PM	
NAME	NSt, Amour	LRegner	FSaba	
DATE	9/29/14	9/29/14	9/29/14	

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