



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

July 27, 2011

Vice President, Operations  
Arkansas Nuclear One  
Entergy Operations, Inc.  
1448 S.R. 333  
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT NOS. 1 AND 2 - ISSUANCE OF  
AMENDMENT RE: APPROVAL OF CYBER SECURITY PLAN (TAC NOS.  
ME4424 AND ME4425)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 244 and Amendment No. 294 to Renewed Facility Operating License (FOL) Nos. DPR-51 and NPF-6 for Arkansas Nuclear One (ANO), Unit Nos. 1 and 2, respectively. The amendment consists of changes to the operating licenses in response to your application dated July 9, 2010, as supplemented by letters dated September 23 and November 30, 2010, and February 15 and April 1, 2011.

The amendments approve the ANO, Units 1 and 2 cyber security plan and associated implementation schedule, and revise Paragraph 2.c.(4) of FOL No. DPR-51 for ANO-1 and Paragraph 2.D of FOL No. NPF-6 for ANO-2, to provide a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved Cyber Security Plan.

A copy of our related Safety Evaluation is also 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 "N. Kaly Kalyanam".

N. Kaly Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-313 and 50-368

Enclosures:

1. Amendment No. 244 to DPR-51
2. Amendment No. 294 to NPF-6
3. Safety Evaluation

cc w/encls: Distribution via Listserv



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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 244  
Renewed License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee), dated July 9, 2010, as supplemented by letters dated September 23 and November 30, 2010, and February 15 and April 1, 2011, 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, 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.

Enclosure 1

2. Accordingly, the license is amended as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-51 is hereby amended to read as follows:

- (2) Technical Specifications

- The Technical Specifications contained in Appendix A, as revised through Amendment No. 244, are hereby incorporated in the renewed license. EOI shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 2.c.(4) of Renewed Facility Operating License No. DPR-51 is hereby amended with the following additional language:

- EOI 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 EOI CSP was approved by License Amendment No. 244.

4. This license amendment is effective as of the date of its 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 1, 2011, 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



Michael T. Markley, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License No. DPR-51  
and Technical Specifications

Date of Issuance: July 27, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 244

RENEWED FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace the following pages of the Renewed Facility Operating License No. DPR-51 and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Operating License

REMOVE

INSERT

-3-

-3-

-4-

-4-

Technical Specifications

REMOVE

INSERT

---

---

- (5) EOI, 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 byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
  - (6) EOI, 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 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  
EOI is authorized to operate the facility at steady state reactor core power levels not in excess of 2568 megawatts thermal.
  - (2) Technical Specifications  
The Technical Specifications contained in Appendix A, as revised through Amendment No. 244, are hereby incorporated in the renewed license. EOI shall operate the facility in accordance with the Technical Specifications.
  - (3) Safety Analysis Report  
The licensee's SAR supplement submitted pursuant to 10 CFR 54.21(d), as revised on March 14, 2001, describes certain future inspection activities to be completed before the period of extended operation. The licensee shall complete these activities no later than May 20, 2014.
  - (4) Physical Protection  
EOI 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: "Arkansas Nuclear One Physical Security Plan, Training and Qualifications Plan, and Safeguards Contingency Plan," as submitted on May 4, 2006.

EOI 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 EOI CSP was approved by License Amendment No. 244.

(5) Implementation of the Improved Technical Specifications (ITS)

The licensee is authorized to relocate certain Technical Specification requirements previously included in Appendix A to licensee controlled documents, as described in Table R, Relocated Specifications, and Table LA, Removal of Details, attached to the Safety Evaluation for Amendment No. 215. These requirements shall be relocated to the appropriate documents as part of the implementation of the ITS.

The schedule for performing Surveillance Requirements (SRs) that are new or revised in Amendment No. 215 shall be as follows:

1. For SRs that are new in this amendment, the first performance shall be due at the end of the first surveillance interval, which begins on the date of implementation of this amendment.
2. For SRs that existed prior to this amendment whose intervals of performance are being reduced, the first reduced surveillance interval shall begin upon completion of the first surveillance performed after implementation of this amendment.
3. For SRs that existed prior to this amendment that contained modified acceptance criteria, the performance shall be due at the end of the first surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment.
4. For SRs that existed prior to this amendment whose interval of performance are being extended, the first extended surveillance interval shall begin upon completion of the last surveillance performed prior to the implementation of this amendment.

(6) Deleted

(7) Deleted

Renewed License No. DPR-51  
Amendment No. 215, 244  
~~Revised by letter dated October 28, 2004,  
November 22, 2004, February 7, 2007,  
July 18, 2007~~



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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 294  
Renewed License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee), dated July 9, 2010, as supplemented by letters dated September 23 and November 30, 2010, and February 15 and April 1, 2011, 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, 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.

Enclosure 2

2. Accordingly, the license is amended as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-6 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 294, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 2.D of Renewed Facility Operating License No. NPF-6 is hereby amended to read as follows:

EOI 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 EOI CSP was approved by License Amendment No. 294.

4. This license amendment is effective as of the date of its 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 1, 2011, 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



Michael T. Markley, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License No. NPF-6  
Technical Specifications

Date of Issuance: July 27, 2011



ATTACHMENT TO LICENSE AMENDMENT NO. 294

RENEWED FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Replace the following pages of the Renewed Facility Operating License No. NPF-6 and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Operating License

REMOVE

3  
8  
9

INSERT

3  
8  
9

Technical Specifications

REMOVE

---

INSERT

---

- (4) EOI, 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;
- (5) EOI, 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 instrument calibration or associated with radioactive apparatus or components; and
- (6) EOI, 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 license shall be deemed to contain and is subject to 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; and 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

EOI is authorized to operate the facility at steady state reactor core power levels not in excess of 3026 megawatts thermal. Prior to attaining this power level EOI shall comply with the conditions in Paragraph 2.C.(3).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 294, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

Exemptive 2nd paragraph of 2.C.2 deleted per Amendment 20, 3/3/81.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

2.C.(3)(a) Deleted per Amendment 24, 6/19/81.

D. Physical Protection

EOI 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: "Arkansas Nuclear One Physical Security, Safeguards Contingency and Training & Qualification Plan," as submitted on May 4, 2006.

EOI 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 EOI CSP was approved by License Amendment No. 294.

E. This renewed license is subject to the following additional condition for the protection of the environment:

Before engaging in additional construction or operational activities which may result in an environmental impact that was not evaluated by the Commission, EOI will prepare and record an environmental evaluation for such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated, in the Final Environmental Statement (NUREG-0254) or any addendum thereto, and other NRC environmental impact assessments, EOI shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation.

F. Updated Final Safety Analysis Report Supplement

The Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this renewed license. Until that update is complete, ANO-2 may make changes to the programs and activities described in the supplement without prior Commission approval, provided that ANO-2 evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements of that section.

The ANO-2 Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. ANO-2 shall complete these activities no later than July 17, 2018, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

G. Reactor Vessel Material Surveillance Capsules

All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of American Society for Testing and Materials (ASTM) E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion.

4. This renewed license is effective as of the date of issuance and shall expire at midnight, July 17, 2038.

FOR THE NUCLEAR REGULATORY COMMISSION

**Original signed by J. E. Dyer**

J. E. Dyer, Director  
Office of Nuclear Reactor Regulation

Attachments:

1. Appendix A - Technical Specifications
2. Preoperational Tests, Startup Tests and other items which must be completed by the indicated Operational Mode

Date of Issuance: June 30, 2005



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 244 AND 294 TO

RENEWED FACILITY OPERATING LICENSE NOS. DPR-51 AND NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NOS. 1 AND 2

DOCKET NOS. 50-313 AND 50-368

1.0 INTRODUCTION

By application dated July 9, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102240483), as supplemented by letters dated September 23 and November 30, 2010, and February 15 and April 1, 2011 (ADAMS Accession Nos. ML11206A768, ML103340388, ML110470416, and ML111020549, respectively), Entergy Operations, Inc. (Entergy, the licensee), submitted a license amendment request. Included in that license amendment request was a request for approval of the licensee's Cyber Security Plan (CSP) and Implementation Schedule for the Arkansas Nuclear One (ANO), Unit Nos. 1 and 2 (ANO-1 and 2), as required by Section 73.54, "Protection of Digital Computer and Communication Systems and Networks," of Title 10 of the *Code of Federal Regulations* (10 CFR). The U.S. Nuclear Regulatory Commission (NRC) staff provided the licensee requests for additional information (RAIs) regarding the staff's concerns with the CSP. By letter dated November 30, 2010, and February 15, 2011, the licensee submitted its response to these RAIs. Additionally, on April 1, 2011, the licensee supplemented its CSP to address: 1) scope of systems in response to the October 21, 2010, Commission decision (Reference 1); 2) records retention; and 3) implementation schedule. The licensee submitted a Revision 0 of the CSP incorporating all of the changes and/or additional information as referenced in the RAI responses. Portions of the letters dated July 9 and September 23, 2010, and February 15 and April 1, 2011, contain sensitive unclassified non-safeguards information (security-related) and, accordingly, those portions are withheld from public disclosure.

The supplemental letters dated September 23 and November 30, 2010, and February 15 and April 1, 2011, 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 October 12, 2010 (75 FR 62597).

The amendments would approve the CSP and associated implementation schedule, and revise Paragraph 2.c.(4) of Renewed Facility Operating License No. DPR-51 for ANO-1 and Paragraph 2.D of Renewed Facility Operating License No. NPF-6 for ANO-2, to provide a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved Cyber Security Plan. The proposed amendments are consistent with Nuclear Energy Institute (NEI) 08-09, Revision 6, "Cyber Security Plan for Nuclear Power Reactors."

## 2.0 REGULATORY EVALUATION

### 2.1 General Requirements

Consistent with 10 CFR 73.54(a), the licensee must 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 (DBT), as described in 10 CFR 73.1. The licensee shall protect digital computer and communication systems and networks associated with: (i) safety-related and important-to-safety functions; (ii) security functions; (iii) emergency preparedness functions, including offsite communications; and (iv) support systems and equipment which, if compromised, would adversely impact safety, security, or emergency preparedness (SSEP) functions. The rule specifies that digital computer and communication systems and networks associated with these functions must be protected from cyber attacks that would adversely impact the integrity or confidentiality of data and software; deny access to systems, services, or data; or provide an adverse impact to the operations of systems, networks, and associated equipment.

In the Staff Requirements Memorandum (SRM)-COMWCO-10-0001, "Regulation of Cyber Security at Nuclear Power Plants," dated October 21, 2010, (Reference 1) the Commission stated that the NRC's cyber security rule at 10 CFR 73.54 should be interpreted to include structures, systems, and components (SSCs) in the balance of plant (BOP) that have a nexus to radiological health and safety. The NRC staff determined that SSCs in the BOP that have a nexus to radiological health and safety are those that could directly or indirectly affect reactivity of a nuclear power plant (NPP), and are, therefore, within the scope of important-to-safety functions described in 10 CFR 73.54(a)(1).

### 2.2 Elements of a CSP

As stated in 10 CFR 73.54(e), the licensee must establish, implement, and maintain a CSP that satisfies the Cyber Security Program requirements of this regulation. In addition, the CSP must describe how the licensee will implement the requirements of the regulation and must account for the site-specific conditions that affect implementation. One method of complying with this regulation is to describe within the CSP how the licensee will achieve high assurance that all SSEP functions are protected from cyber attacks.

### 2.3 Regulatory Guide 5.71 and NEI 08-09, Revision 6

NRC Regulatory Guide (RG) 5.71, "Cyber Security Programs for Nuclear Facilities" (Reference 2), describes a regulatory position that promotes a defensive strategy consisting of a defensive architecture and a set of security controls based on standards provided in the

National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53, "Recommended Security Controls for Federal Information Systems and Organizations" and NIST SP 800-82, "Guide to Industrial Control Systems Security," dated September 29, 2008. NIST SP 800-53 and NIST SP 800-82 are based on well-understood cyber threats, risks, and vulnerabilities, coupled with equally well-understood countermeasures and protective techniques. RG 5.71 divides the above-noted security controls into three broad categories: technical, operational, and management.

The organization of RG 5.71 reflects the steps necessary to meet the requirements of 10 CFR 73.54. Section C.3 of RG 5.71 describes an acceptable method for implementing the security controls, as detailed in Appendix B, "Technical Controls," and Appendix C, "Operational and Management Controls." Section C.4 of RG 5.71 discusses the need to maintain the established cyber security program, including comprehensive monitoring of the CDAs and the effectiveness of their security protection measures, ensuring that changes to the CDAs or the environment are controlled, coordinated, and periodically reviewed for continued protection from cyber attacks. Section C.5 of RG 5.71 provides licensees and applicants with guidance for retaining records associated with their cyber security programs. Appendix A to RG 5.71 provides a template for a generic cyber security plan which licensees may use to comply with the licensing requirements of 10 CFR 73.54. Appendices B and C provide an acceptable set of security controls, which are based on well-understood threats, vulnerabilities, and attacks, coupled with equally well-understood and vetted countermeasures and protective techniques.

NEI 08-09, Revision 6, closely maps with RG 5.71; Appendix A of NEI 08-09, Revision 6, contains a cyber security plan template that is comparable to Appendix A of RG 5.71. Appendix D of NEI 08-09, Revision 6, contains technical cyber security controls that are comparable to Appendix B of RG 5.71. Appendix E of NEI 08-09, Revision 6, contains operational and management cyber security controls that are comparable to Appendix C of RG 5.71.

RG 5.71 provides a framework to aid in the identification of those digital assets that licensees must protect from cyber attacks. These identified digital assets are referred to as "critical digital assets" (CDAs). Licensees should address the potential cyber security risks to CDAs by applying the defensive architecture and addressing the collection of security controls identified in RG 5.71. RG 5.71 includes a CSP template that provides one method for preparing an acceptable CSP.

In its letter to the Nuclear Energy Institute (NEI) dated May 5, 2010 (Reference 3), the NRC stated that the licensees may use the template in NEI 08-09, Revision 6 (Reference 4), to prepare an acceptable CSP, with the exception of the definition of "cyber attack." The NRC staff subsequently reviewed and approved by letter dated June 7, 2010 (Reference 5), a definition for "cyber attack" to be used in submissions based on NEI 08-09, Revision 6. The licensee submitted a CSP for ANO- 1 and 2 that was based on the template provided in NEI 08-09, Revision 6 and included a definition of cyber attack acceptable to the NRC staff (Reference 5). In its letter dated July 9, 2010, the licensee acknowledged it was using the definition of "cyber attack" that was approved by the NRC. Additionally, the licensee submitted a supplement to its CSP on April 1, 2011, to include information on SSCs in the BOP that, if compromised, could affect NPP reactivity.

RG 5.71 and NEI 08-09, Revision 6 are comparable documents; both are based on essentially the same general approach and the same set of technical, operational, and management security controls. The CSP submitted by the licensee was reviewed against the corresponding sections in RG 5.71.

### 3.0 TECHNICAL EVALUATION

The NRC staff performed a technical evaluation of the licensee's submittal. The licensee's submittal, with the exception of deviations described in Section 4.0, generally conformed to the guidance in NEI 08-09, Revision 6, which was found to be acceptable by the NRC staff and comparable to RG 5.71 to satisfy the requirements contained in 10 CFR 73.54. The staff reviewed the licensee's submittal against the requirements of 10 CFR 73.54 following the guidance contained in RG 5.71. The staff's evaluation of each section of the licensee's submittal is discussed below.

#### 3.1 Scope and Purpose

The CSP submitted by the licensee establishes a means to achieve high assurance that digital computer and communication systems and networks associated with the following functions are adequately protected against cyber attacks up to and including the DBT:

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 SSEP functions.

The CSP describes achievement of high assurance of adequate protection of systems associated with the above functions from cyber attacks by:

- Implementing and documenting the "baseline" security controls as described in Section 3.1.6 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3 described in RG 5.71; and
- Implementing and documenting a Cyber Security Program to maintain the established cyber security controls through a comprehensive life cycle approach as described in Section 4 of NEI 08-09, Revision 6, which is comparable to Appendix A, Section A.2.1 of RG 5.71.

Thus, the licensee's CSP, as originally submitted, is comparable to the CSP in NEI-08-09, Revision 6. However, in its submittal dated April 1, 2011, the licensee clarified its original submission and indicated that the scope of systems includes those BOP SSCs that have an impact on NPP reactivity if compromised. This is in response to and consistent with SRM COMWCO-10-0001, in which the Commission stated that the NRC's cyber security rule at 10 CFR 73.54 should be interpreted to include SSCs in the BOP that have a nexus to



radiological health and safety. The NRC staff determined that those systems that have a nexus to radiological health and safety are those that could directly or indirectly affect reactivity of an NPP, and are therefore within the scope of important-to-safety functions described in 10 CFR 73.54(a)(1).

The NRC staff reviewed the CSP and the supplemental information submitted by the licensee and found no deviation from Regulatory Position C.3.3 in RG 5.71 and Appendix A, Section A.2.1 of RG 5.71.

The licensee substituted "emergency planning" functions for "emergency preparedness" functions. Paragraph 73.54(a)(1) of 10 CFR required that, "The licensee shall protect digital computer and communication systems and networks associated with... (iii) Emergency preparedness functions, and (iv) Support systems and equipment which, if compromised, would adversely impact safety, security, or emergency preparedness functions." The requirements of 10 CFR 73.54(a)(1) do not address protection of digital assets, computers or communication systems that provide "emergency planning" functions. The NRC asked for clarification on the use of the term "emergency planning" functions.

The licensee responded by modifying the original statement in Section 2.1 (Scope and Purpose) of the CSP. The updated CSP correctly refers to the need to protect against cyber attack systems that perform "emergency preparedness" functions. The NRC staff finds that the licensee established adequate measures to implement and document the Cyber Security Program, including baseline security controls.

Based on the above, the NRC staff concludes that the licensee's CSP adequately establishes the Cyber Security Program, including baseline security controls.

### 3.2 Analyzing Digital Computer Systems and Networks and Applying Cyber Security Controls

The CSP submitted by the licensee states that the Cyber Security Program is established, implemented, and maintained as described in Section 3.1 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1 described in RG 5.71 to:

- Analyze digital computer and communications systems and networks; and
- Identify those assets that must be protected against cyber attacks to satisfy 10 CFR 73.54(a).

The CSP describes how the cyber security controls in Appendices D and E of NEI 08-09, Revision 6, which are comparable to Appendices B and C in RG 5.71, are addressed to protect CDAs from cyber attacks.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.1 in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately addresses security controls.

### 3.3 Cyber Security Assessment and Authorization

The licensee provided information addressing the creation of a formal, documented, cyber security assessment and authorization policy. This included a description concerning the creation of a formal, documented procedure comparable to Section 3.1.1 of NEI 08-09, Revision 6.

The NRC staff concludes that the licensee established adequate measures to define and address the purpose, scope, roles, responsibilities, management commitment, and coordination, and to facilitate the implementation of the cyber security assessment and authorization policy.

The NRC staff reviewed the above information and found no deviation from Section 3.1.1 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.1 and Appendix A, Section A.3.1.1 of RG 5.71.

Based on the above, the NRC staff concludes that the licensee's CSP adequately established controls to develop, disseminate, and periodically update the cyber security assessment and authorization policy and implementing procedure.

### 3.4 Cyber Security Assessment Team

The Cyber Security Assessment Team (CSAT) responsibilities include conducting the cyber security assessment, documenting key findings during the assessment, and evaluating assumptions and conclusions about cyber security threats. The CSP submitted by the licensee outlines the requirements, roles, and responsibilities of the CSAT comparable to Section 3.1.2 of NEI 08-09, Revision 6. It also describes that the CSAT has the authority to conduct an independent assessment.

The CSP submitted by the licensee describes that the CSAT will consist of individuals with knowledge about information and digital systems technology; NPP operations, engineering, and plant technical specifications; and physical security and emergency preparedness systems and programs. The CSAT description in the CSP is comparable to Regulatory Position C.3.1.2 in RG 5.71.

The CSP submitted by the licensee lists the roles and responsibilities for the CSAT which included performing and overseeing the cyber security assessment process; documenting key observations; evaluating information about cyber security threats and vulnerabilities; confirming information obtained during tabletop reviews, walk-downs, or electronic validation of CDAs; and identifying potential new cyber security controls.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.1.2 in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately establishes the requirements, roles, and responsibilities of the CSAT.

### 3.5 Identification of CDAs

The CSP submitted by the licensee states that the licensee will identify and document CDAs and critical systems (CSs), including a general description, the overall function, the overall consequences if a compromise were to occur, and the security functional requirements or specifications as described in Section 3.1.3 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.3 of RG 5.71.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes the process to identify CDAs.

### 3.6 Examination of Cyber Security Practices

The CSP submitted by the licensee describes how the CSAT will examine and document the existing cyber security policies, procedures, and practices; existing cyber security controls; detailed descriptions of network and communication architectures (or network/communication architecture drawings); information on security devices; and any other information that may be helpful during the cyber security assessment process as described in Section 3.1.4 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.2 of RG 5.71. The examinations will include an analysis of the effectiveness of the existing Cyber Security Program and cyber security controls. The CSAT will document the collected cyber security information and the results of their examination of the collected information.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.1.4 in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes the examination of cyber security practices.

### 3.7 Tabletop Reviews and Validation Testing

The CSP submitted by the licensee describes tabletop reviews and validation testing, which confirm the direct and indirect connectivity of each CDA and identify direct and indirect pathways to CDAs. The CSP states that validation testing will be performed electronically or by physical walkdowns. The licensee's plan for tabletop reviews and validation testing is comparable to Section 3.1.5 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.4 of RG 5.71.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes tabletop reviews and validation testing.

### 3.8 Mitigation of Vulnerabilities and Application of Cyber Security Controls

The CSP submitted by the licensee describes the use of information collected during the cyber security assessment process (e.g., disposition of cyber security controls, defensive models, defensive strategy measures, site and corporate network architectures) to implement security controls in accordance with Section 3.1.6 of NEI 08-09, Revision 6, which is comparable to

Regulatory Position C.3.3 and Appendix A.3.1.6 to RG 5.71. The CSP describes the process that will be applied in cases where security controls cannot be implemented.

The CSP submitted by the licensee notes that before the licensee can implement security controls on a CDA, it will assess the potential for adverse impact in accordance with Section 3.1.6 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3 of RG 5.71.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes mitigation of vulnerabilities and application of security controls.

### 3.9 Incorporating the Cyber Security Program into the Physical Protection Program

The CSP submitted by the licensee states that the Cyber Security Program will be reviewed as a component of the Physical Security Program in accordance with the requirements of 10 CFR 73.55(m). This is comparable to Section 4.1 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.4 of RG 5.71.

This section of the CSP submitted by the licensee is comparable to Appendix A, Section A.3.2 in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes review of the CSP as a component of the physical security program.

### 3.10 Cyber Security Controls

The CSP submitted by the licensee describes how the technical, operational and management cyber security controls contained in Appendices D and E of NEI 08-09, Revision 6, that are comparable to Appendices B and C in RG 5.71, are evaluated and dispositioned based on site-specific conditions during all phases of the Cyber Security Program. The CSP states that many security controls have actions that are required to be performed on specific frequencies and that the frequency of a security control is satisfied if the action is performed within 1.25 times the frequency specified in the control, as applied, and as measured from the previous performance of the action as described in Section 4.2 of NEI 08-09, Revision 6.

The licensee explained in its CSP that the cyber security controls were utilized in the following site-specific programs: baseline assessment; configuration management; engineering design control; training; attack mitigation; incident response; record retention and handling; and review.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes implementation of cyber security controls.

### 3.11 Defense-in-Depth Protective Strategies

The CSP submitted by the licensee describes the implementation of defensive strategies that ensure the capability to detect, respond to, and recover from a cyber attack. The CSP specifies that the defensive strategies consist of security controls, defense-in-depth measures, and the

defensive architecture. The submitted CSP notes that the defensive architecture establishes the logical and physical boundaries to control the data transfer between these boundaries.

In its submittal of the CSP, the licensee established defense-in-depth strategies by: implementing and documenting a defensive architecture as described in Section 4.3 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.2 in RG 5.71; a physical security program, including physical barriers; the operational and management controls described in Appendix E of NEI 08-09, Revision 6, which is comparable to Appendix C to RG 5.71; and the technical controls described in Appendix D of NEI 08-09, Revision 6, which is comparable to Appendix B to RG 5.71.

The CSP describes the defense-in-depth architecture as predicted on isolation of CDAs within levels 2, 3, and 4. Furthermore, data flows from lower levels to higher levels are described as being severely curtailed due to the implementation of appropriately configured firewalls, intrusion detection systems, air gaps, or deterministic one-way isolation devices such as data diodes or hardware virtual private networks (VPNs). The NRC staff's understanding of the hardware VPN is that it is a device that has security enhancement features, but is vulnerable to unauthorized intrusions in a like manner as traditional VPN software. Since the licensee proposed these devices as equally effective in isolating CDAs and CSs from cyber attack as other deterministic methods, the NRC staff requested further explanation on the characteristics, features and effectiveness of the hardware VPN. The licensee, in subsequent discussions with the NRC staff, indicated its intention to remove the hardware VPN as an option for isolating CDAs and CSs within levels 2, 3, and 4, from data flows initiated at lower levels.

As noted in Section 3.1 above (Scope and Purpose), the licensee substituted "Emergency Plan" functions for "Emergency Preparedness" functions (as defined and noted in the NRC ruling 10 CFR 73.54(a)(1)) in references to CDAs and CSs that would be protected via the submitted defense-in-depth architecture. On page 12 of the CSP, the licensee describes the implementation model for the defense-in-depth architecture, and characterizes the several types of CDAs that are protected within the proposed layers. It notes in the third bullet that the "CDAs... that perform security or support Emergency Plan functions..." It notes in the fourth bullet that, "CDAs... that perform or support Emergency Plan Functions..." The NRC staff requested an explanation of the functions that are comprised under the term "Emergency Plan" and further requested that the licensee explain how the CDAs and CSs that perform "Emergency Preparedness" were protected under the submitted defense-in-depth architecture, as required by 10 CFR 73.54(a)(1). The licensee agreed to remove reference to "Emergency Planning" and "Emergency Plan," and instead replaced these terms with "Emergency Preparedness."

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes implementation of defense-in-depth protective strategies.

### 3.12 Ongoing Monitoring and Assessment

The CSP submitted by the licensee describes how ongoing monitoring of cyber security controls to support CDAs is implemented comparable to Appendix E of NEI 08-09, Revision 6, which is comparable to Regulatory Positions C.4.1 and C.4.2 of RG 5.71. The ongoing monitoring program includes configuration management and change control; cyber security impact analysis

of changes and changed environments; ongoing assessments of cyber security controls; effectiveness analysis (to monitor and confirm that the cyber security controls are implemented correctly, operating as intended, and achieving the desired outcome) and vulnerability scans to identify new vulnerabilities that could affect the security posture of CDAs.

This section of the CSP submitted by the licensee is comparable to Regulatory Positions C.4.1 and C.4.2 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes ongoing monitoring and assessment.

### 3.13 Modification of Digital Assets

The CSP submitted by the licensee describes how cyber security controls are established, implemented, and maintained to protect CDAs. These security controls ensure that modifications to CDAs are evaluated before implementation, the cyber security performance objectives are maintained, and acquired CDAs have cyber security requirements in place to achieve the site's Cyber Security Program objectives.

This section of the CSP submitted by the licensee is comparable to Section 4.5 of NEI 08-09, Revision 6, which is comparable to Appendices A.4.2.5 and A.4.2.6 of RG 5.71.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes modification of digital assets.

### 3.14 Attack Mitigation and Incident Response

The CSP submitted by the licensee describes the process to ensure that SSEP functions are not adversely impacted due to cyber attacks in accordance with Section 4.6 of NEI 08-09, Revision 6, which is comparable to Appendix C, Section C.8 of RG 5.71. The CSP includes a discussion about creating incident response policy and procedures, and addresses training, testing and drills, incident handling, incident monitoring, and incident response assistance. It also describes identification, detection, response, containment, eradication, and recovery activities comparable to Section 4.6 of NEI 08-09, Revision 6.

This section of the CSP submitted by the licensee is comparable to Appendix C, Section C.8 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes attack mitigation and incident response.

### 3.15 Cyber Security Contingency Plan

The CSP submitted by the licensee describes creation of a Cyber Security Contingency Plan and policy that protects CDAs from the adverse impacts of a cyber attack described in Section 4.7 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3.2.7 and Appendix C.9 of RG 5.71. The licensee describes the Cyber Security Contingency Plan that would include the response to events. The plan includes procedures for operating CDAs in a

contingency, roles and responsibilities of responders, processes and procedures for backup and storage of information, logical diagrams of network connectivity, current configuration information, and personnel lists for authorized access to CDAs.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.3.2.7 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes the cyber security contingency plan.

### 3.16 Cyber Security Training and Awareness

The CSP submitted by the licensee describes a program that establishes the training requirements necessary for the licensee's personnel and contractors to perform their assigned duties and responsibilities in implementing the Cyber Security Program in accordance with Section 4.8 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3.2.8 of RG 5.71.

The CSP states that individuals will be trained with a level of cyber security knowledge commensurate with their assigned responsibilities in order to provide high assurance that individuals are able to perform their job functions in accordance with Appendix E of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3.2.8 of RG 5.71 and describes three levels of training: awareness training, technical training, and specialized cyber security training.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes the cyber security training and awareness.

### 3.17 Evaluate and Manage Cyber Risk

The CSP submitted by the licensee describes how cyber risk is evaluated and managed utilizing site programs and procedures comparable to Section 4.9 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.4 and Appendix C, Section C.13 of RG 5.71. The CSP describes the Threat and Vulnerability Management Program, Risk Mitigation, Operational Experience Program; and the Corrective Action Program and how each will be used to evaluate and manage risk.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.4 and Appendix C, Section C.13 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes evaluation and management of cyber risk.

### 3.18 Policies and Implementing Procedures

The CSP describes development and implementation of policies and procedures to meet security control objectives in accordance with Section 4.10 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.5 and Appendix A, Section A.3.3 of RG 5.71. This

includes the process to document, review, approve, issue, use, and revise policies and procedures.

The CSP also describes the licensee's procedures to establish specific responsibilities for positions described in Section 4.11 of NEI 08-09, Revision 6, which is comparable to Appendix C, Section C.10.10 of RG 5.71.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.5, Appendix A, Section A.3.3, and Appendix C, Section C.10.10 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes cyber security policies and implementing procedures.

### 3.19 Roles and Responsibilities

The CSP submitted by the licensee describes the roles and responsibilities for the qualified and experienced personnel, including the Cyber Security Program Sponsor, the Cyber Security Program Manager, Cyber Security Specialists, the Cyber Security Incident Response Team (CSIRT), and other positions as needed. The CSIRT initiates in accordance with the Incident Response Plan and initiates emergency action when required to safeguard CDAs from cyber security compromise and to assist with the eventual recovery of compromised systems. Implementing procedures establish roles and responsibilities for each of the cyber security roles in accordance with Section 4.11 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.2, Appendix A, Section A.3.1.2, and Appendix C, Section C.10.10 of RG 5.71.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes cyber security roles and responsibilities.

### 3.20 Cyber Security Program Review

The CSP submitted by the licensee describes how the Cyber Security Program establishes the necessary procedures to implement reviews of applicable program elements in accordance with Section 4.12 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.4.3 and Appendix A, Section A.4.3 of RG 5.71.

Based on the above, the NRC staff concludes that the licensee's CSP adequately describes Cyber Security Program review.

### 3.21 Document Control and Records Retention and Handling

The CSP submitted by the licensee describes that the licensee has established the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting cyber security are developed, reviewed, approved, issued, used, and revised to reflect completed work. The CSP stated that superseded portions of certain records will be retained for at least 3 years after the record is superseded, while audit records will be retained for no less than 12 months in accordance with Section 4.13 of NEI 08-09, Revision 6. However, this guidance provided by industry to licensees did not fully comply with the requirements of 10 CFR 73.54.



In a letter dated February 28, 2011 (ADAMS Accession No. ML110600204), NEI sent to the NRC proposed language for licensees' use to respond to the generic records retention issue, to which the NRC had no technical objection (Reference: Letter from NRC dated March 1, 2011, ADAMS Accession No. ML110490337). The proposed language clarified the requirement by providing examples (without providing an all-inclusive list) of the records and supporting technical documentation that are needed to satisfy the requirements of 10 CFR 73.54. All records will be retained until the Commission terminates the license, and the licensee shall maintain superseded portions of these records for at least 3 years after the record is superseded, unless otherwise specified by the Commission. By retaining accurate and complete records and technical documentation until the license is terminated, inspectors, auditors, or assessors will have the ability to evaluate incidents, events, and other activities that are related to any of the cyber security elements described, referenced, and contained within the licensee's NRC-approved CSP. It will also allow the licensee to maintain the ability to detect and respond to cyber attacks in a timely manner, in the case of an event. In its letter dated April 1, 2011, the licensee responded to the records retention RAI using the language proposed by NEI, in its letter dated February 28, 2011.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.5 and Appendix A, Section A.5 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the language the licensee proposes to adopt provides for adequate records retention and will support the licensee's ability to detect and respond to cyber attacks. The NRC staff further concludes that this section is comparable to Regulatory Position C.5 and Appendix A, Section A.5 of RG 5.71 without deviation. Accordingly, the NRC staff concludes that the licensee's CSP adequately describes cyber security document control and records retention and handling.

### 3.22 Implementation Schedule

The CSP submitted by the licensee provides a proposed implementation schedule for the Cyber Security Program. In a letter dated February 28, 2011 (ADAMS Accession No. ML110600206), NEI sent to the NRC a template for licensees to use to submit their CSP implementation schedules, to which the NRC had no technical objection (Reference: Letter from NRC dated March 1, 2011, ADAMS Accession No. ML110070348). These key milestones include:

- Establish the CSAT;
- Identify CSs and CDAs;
- Install a deterministic one-way device between lower level devices and higher level devices;
- Implement the security control "Access Control For Portable And Mobile Devices";
- Implement observation and identification of obvious cyber related tampering to existing insider mitigation rounds by incorporating the appropriate elements;

- Identify, document, and implement cyber security controls as per “Mitigation of Vulnerabilities and Application of Cyber Security Controls” for CDAs that could adversely impact the design function of physical security target set equipment; and
- Commence ongoing monitoring and assessment activities for those target set CDAs whose security controls have been implemented.

In its letter dated April 1, 2011, the licensee provided a revised implementation schedule using the NEI template. The NRC staff considers this April 1, 2011, supplement the approved schedule as required by 10 CFR 73.54. Based on the provided schedule ensuring timely implementation of those protective measures that provide a higher degree of protection against radiological sabotage, the NRC staff concludes that the Cyber Security Program implementation schedule is satisfactory.

The NRC staff acknowledges that, in its submittal dated April 1, 2011, Entergy proposed several CSP milestone implementation dates as regulatory commitments. 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 pursuant in 10 CFR 50.90.

### 3.23 Revision to License Conditions

By letter dated April 1, 2011, the licensee proposed to add a paragraph to Paragraph 2.c.(4) of Renewed Facility Operating License No. DPR-51 for ANO-1 and Paragraph 2.D of Renewed Facility Operating License No. NPF-6 for ANO-2 to provide a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved CSP. The NRC staff modified the proposed wording of the license condition described in the licensee’s submittal dated April 1, 2011, and the licensee agreed with the revised license condition proposed by the NRC staff.

The following paragraph is added to Paragraph 2.c.(4) of Renewed Facility Operating License No. DPR-51 for ANO-1:

EOI 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 EOI CSP was approved by License Amendment No. 244.

The following paragraph is added to Paragraph 2.D of Renewed Facility Operating License No. NPF-6 for ANO-2:

EOI 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 EOI CSP was approved by License Amendment No. 294.

Based on the information in Section 3.0 of this safety evaluation and the modified license condition described above, the NRC concludes this is acceptable.

#### 4.0 DIFFERENCES FROM NEI 08-09, REVISION 6

The NRC staff notes the following additional differences between the licensee's submission and NEI 08-09, Revision 6:

- In Section 3.1, "Scope and Purpose," the licensee clarified the definition of important-to-safety functions, consistent with SRM-COMWCO-10-0001.
- In Section 3.21, "Document Control and Records Retention and Handling," the licensee clarified the definition of records and supporting documentation that will be retained to conform to the requirements of 10 CFR 73.54.
- In Section 3.22, "Implementation Schedule," the licensee submitted a revised implementation schedule, specifying the interim milestones and the final implementation date, including supporting rationale.

The NRC staff concludes that all of these deviations are acceptable as discussed in the respective sections in the safety evaluation.

#### 5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arkansas State official was notified of the proposed issuance of the amendment. The State official had comments.

#### 6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on October 12, 2010 (75 FR 62597). Also, this amendment relates to safeguards matters and does not involve any significant construction impacts and relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in

10 CFR 51.22(c)(9), (10), and (12). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

## 7.0 CONCLUSION

The NRC staff's review and evaluation of the licensee's CSP was conducted using the staff positions established in the relevant sections of RG 5.71. Based on the NRC staff's review, the NRC concludes that the licensee addressed the relevant information necessary to satisfy the requirements of 10 CFR 73.54, 10 CFR 73.55(a)(1), 10 CFR 73.55(b)(8), and 10 CFR 73.55(m), as applicable, and that the licensee's Cyber Security Program provides high assurance that digital computer and communication systems and networks associated with the following are adequately protected against cyber attacks, up to and including the DBT as described in 10 CFR 73.1. This includes protecting digital computer and communication systems and networks associated with: (i) safety-related and important-to-safety functions; (ii) security functions; (iii) emergency preparedness functions, including offsite communications; and (iv) support systems and equipment which, if compromised, would adversely impact SSEP functions.

Therefore, the NRC staff concludes that the information contained in this CSP to be acceptable and upon successful implementation of this program, operation of Arkansas Nuclear One, Units 1 and 2, will not be inimical to the common defense and security. The Commission 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

## 8.0 REFERENCES

1. Vietti-Cook, A. L., memorandum to R. W. Borchardt, U.S. Nuclear Regulatory Commission, "Staff Requirements - COMWCO-10-000 - Regulation of Cyber Security at Nuclear Power Plants," dated October 21, 2010 (ADAMS Accession No. ML102940009).
2. U.S. Nuclear Regulatory Commission, Regulatory Guide 5.71, "Cyber Security Programs for Nuclear Facilities," dated January 2010 (ADAMS Accession No. ML090340159).
3. Correia, R., U.S. Nuclear Regulatory Commission, letter to Jack Roe, Nuclear Energy Institute, "Nuclear Energy Institute 08-09, 'Cyber Security Plan Template; Revision 6,'" dated May 5, 2010 (ADAMS Accession No. ML101190371).
4. Roe, J., Nuclear Energy Institute, letter to Scott Morris, U.S. Nuclear Regulatory Commission, "NEI 08-09, Revision 6, 'Cyber Security Plan for Nuclear Power Reactors; April 2010,'" dated April 28, 2010 (ADAMS Accession No. ML101180434).
5. Correia, R., U.S. Nuclear Regulatory Commission, letter to Christopher E. Earls, Nuclear Energy Institute, "Nuclear Energy Institute 08-09, 'Cyber Security Plan Template; Rev. 6,'" dated June 7, 2010 (ADAMS Accession No. ML101550052).

Principal Contributor: Joseph Green, NSIR

Date: July 27, 2011

July 27, 2011

Vice President, Operations  
Arkansas Nuclear One  
Entergy Operations, Inc.  
1448 S.R. 333  
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT NOS. 1 AND 2 - ISSUANCE OF  
AMENDMENT RE: APPROVAL OF CYBER SECURITY PLAN (TAC NOS.  
ME4424 AND ME4425)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 244 and Amendment No. 294 to Renewed Facility Operating License (FOL) Nos. DPR-51 and NPF-6 for Arkansas Nuclear One (ANO), Unit Nos. 1 and 2, respectively. The amendment consists of changes to the operating licenses in response to your application dated July 9, 2010, as supplemented by letters dated September 23 and November 30, 2010, and February 15 and April 1, 2011.

The amendments approve the ANO, Units 1 and 2 cyber security plan and associated implementation schedule, and revise Paragraph 2.c.(4) of FOL No. DPR-51 for ANO-1 and Paragraph 2.D of FOL No. NPF-6 for ANO-2, to provide a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved Cyber Security Plan.

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

Sincerely,  
/RA/

N. Kaly Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-313 and 50-368

Enclosures:

1. Amendment No. 244 to DPR-51
2. Amendment No. 294 to NPF-6
3. Safety Evaluation

cc w/encls: Distribution via Listserv

**DISTRIBUTION:**

PUBLIC	RidsNrrDorlLpl4 Resource	RidsOgcRp Resource
LPLIV RF	RidsNrrPMAANO Resource	RidsRgn4MailCenter Resource
RidsAcrsAcnw_MailCTR Resource	RidsNrrLAJBurkhardt Resource	JGreen, NSIR/DSP/ISCPB
RidsNrrDorlDpr Resource	RidsNsirDsp Resource	PPederson, NSIR/DSP/ISCPB

**ADAMS Accession No. ML111861394**

\*SE memo dated

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NSIR/DSP/ISCPB/BC	OGC/NLO w comments	NRR/LPL4/BC	NRR/LPL4/PM
NAME	NKalyanam	JBurkhardt	CErlanger*	BMezuno	MMarkley	NKalyanam
DATE	7/27/11	7/6/11	6/7/11	7/18/11	7/27/11	7/27/11

OFFICIAL RECORD COPY