



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

August 27, 2020

Mr. Don Moul
Executive Vice President, Nuclear Division
and Chief Nuclear Officer
Florida Power & Light Company
Mail Stop: NT3/JW
15430 Endeavor Drive
Jupiter, FL 33478

SUBJECT: DUANE ARNOLD ENERGY CENTER – APPROVAL OF QUALITY
ASSURANCE TOPICAL REPORT (FPL-3), REVISION 0
(EPID L-2020-LLQ-0002)

Dear Mr. Moul:

By letter dated February 13, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20049A860), as supplemented by letter dated June 26, 2020 (ADAMS Accession No. ML20178A519), NextEra Energy Duane Arnold, LLC (NEDA, the licensee) submitted a site-specific Duane Arnold Energy Center (DAEC) Quality Assurance Topical Report (QATR), FPL [Florida Power & Light Company]-3, for review and approval by the NRC staff in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 54(a)(4).

By letter dated January 18, 2019 (ADAMS Accession No. ML19023A196), NEDA submitted its Notification of Permanent Cessation of Power Operations for DAEC. In this letter, NEDA provided notification to the U.S. Nuclear Regulatory Commission (NRC) of its intent to permanently cease power operation in the fourth quarter of 2020.

By letter dated March 2, 2020 (ADAMS Accession No. ML20062E489), NEDA revised its Notification of Permanent Cessation of Power Operations for DAEC. In this letter, NEDA provided notification to the NRC of its intent to permanently cease power operation no later than October 30, 2020.

The NRC staff has completed its review of your request and has determined that the DAEC QATR FPL-3, as described, is in conformance with the applicable portions of Appendix B to 10 CFR Part 50. The NRC staff concludes that the proposed FPL-3, Revision 0, follows the NRC guidance in the attached NRC safety evaluation, conforms to the format of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Section 17.3, "Quality Assurance Program Description," complies with Appendix B to 10 CFR Part 50 requirements for the QA program and is, therefore, acceptable. The NRC staff also concludes that the proposed FPL-3, Revision 0, complies with 10 CFR Part 71 and 10 CFR Part 72 activities in accordance with 10 CFR 71.101(f) and 10 CFR 72.140(d), respectively.

However, the approval of the DAEC QATR FPL-3 does not become effective until NEDA submits the required 10 CFR 50.82(a)(1)(ii) certification that DAEC has permanently defueled. NEDA will have 60 days to implement the DAEC QATR FPL-3 once the Certification of Permanent Fuel Removal has been docketed.

If you have any questions, please contact me at (301) 415-2855 or via e-mail at Scott.Wall@nrc.gov.

Sincerely,

Scott P. Wall, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosure:
Safety Evaluation

cc: Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

QUALITY ASSURANCE TOPICAL REPORT (FPL-3), REVISION 0

NEXTERA ENERGY DUANE ARNOLD, LLC

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

1.0 INTRODUCTION

By letter dated February 13, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20049A860), as supplemented by letter dated June 26, 2020 (ADAMS Accession No. ML20178A519), NextEra Energy Duane Arnold, LLC (NEDA, the licensee), submitted a site-specific Duane Arnold Energy Center (DAEC) Quality Assurance Topical Report (QATR) for review and approval by the U. S. Nuclear Regulatory Commission (NRC or Commission) staff in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 54(a)(4).

By letter dated January 18, 2019 (ADAMS Accession No. ML19023A196), NEDA submitted a letter that served as its certification of intent to permanently cease power operations at DAEC in the fourth quarter of 2020. By letter dated March 2, 2020 (ADAMS Accession No. ML20062E489), the licensee supplemented its certification of intent to permanently cease power operations at DAEC to specify that it would cease power operations on October 30, 2020. In accordance with 10 CFR 50.82(a)(2), after the NRC receives certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel from NEDA, the DAEC 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel.

In a letter dated December 29, 2006 (ADAMS Accession No. ML063540197), the NRC approved common QATR FPL [Florida Power & Light Company]-1, which included other nuclear stations in addition to DAEC. To support the transition of DAEC to a decommissioning facility, NEDA has developed a site-specific DAEC QATR FPL-3 using the QATR FPL-1 as the basis. QATR FPL-1 will no longer be effective at DAEC following approval and implementation of QATR FPL-3. QATR FPL-3 is considered to a reduction in commitment as defined by 10 CFR 50.54(a)(3).

The NRC staff sent DAEC a request for additional information (RAI) by e-mail dated May 28, 2020 (ADAMS Accession No. ML20153A377). DAEC responded to the RAI by letter dated June 26, 2020.

Enclosure

The QATR FPL-3 provides a top-level overview of the quality assurance (QA) program controls applied to quality related items and activities at DAEC during the decommissioning phase of the plant life. The QATR FPL-3 is based on the applicable portions of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," Subpart H, "Quality Assurance," and 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste," Subpart G, "Quality Assurance."

2.0 REGULATORY EVALUATION

The Commission's regulatory requirements related to QA programs are set forth in Appendix B to 10 CFR Part 50 (Appendix B), 10 CFR 50.34(b)(6)(ii), and 10 CFR 50.54(a). In addition, the Commission's regulatory requirements related to QA programs for the independent storage of spent nuclear fuel and packaging and transportation of radioactive material are addressed in 10 CFR Part 71, Subpart H, and 10 CFR Part 72, Subpart G.

Appendix B establishes the requirements for the design, fabrication, construction, and testing of structures, systems, and components (SSCs) for the facility. The pertinent requirements of Appendix B apply to all activities affecting the safety-related functions of those SSCs and include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, and modifying, SSCs.

The regulations in 10 CFR 50.34, "Content of applications; technical information," require that every applicant for an operating license include information in its Final Safety Analysis Report (FSAR) on the managerial and administrative controls to be used to ensure safe operation. The information on the controls shall also include a discussion on how the applicable requirements of Appendix B will be satisfied.

The regulations in 10 CFR 50.54 require each power plant subject to the requirements of Appendix B to implement a QA program and 10 CFR 50.54(a)(4) requires licensees to submit to the NRC, changes to their QA program that reduces commitments.

The regulations in 10 CFR Part 71, Subpart H, establishes the QA requirements applying to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, and modification, of components of packaging and transportation of radioactive material that are important to safety.

The regulations in 10 CFR Part 72, Subpart G, establishes the QA requirements that apply to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, modification of SSCs, and decommissioning that are important to safety.

The QA program described in the QATR commits to the guidance of the American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA) standard NQA-1-1994, "Quality Assurance Requirements for Nuclear Applications." NQA-1-1994, Part I, sets forth programmatic requirements for the establishment and execution of QA programs for the siting, design, construction, and operation of nuclear facilities. NQA-1-1994, Part II, sets forth nonprogrammatic QA requirements for the planning and conducting of identified tasks during the fabrication, construction, modification, repair, maintenance, and testing, of SSCs for nuclear

facilities. The guidance of Parts I and II of NQA-1-1994 is similar to that provided by the American National Standards Institute (ANSI) N45.2 standard and its daughter standards developed in the 1970s and early 1980s. The NRC staff has previously approved the use of NQA-1-1994, as supplemented by the guidance of ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," for DAEC (ADAMS Accession No. ML063540197).

3.0 TECHNICAL EVALUATION

The request for review and approval of the QATR FPL-3 considered a reduction in commitment, and was submitted by letter dated February 13, 2020, as supplemented by letter dated June 26, 2020, in accordance with the provisions of 10 CFR 50.54(a)(4). The letter dated February 13, 2020, included Revision 0 to the QATR FPL-3 (provided in Enclosure 1 thereto).

In evaluating the adequacy of the revisions to the QATR, the NRC staff used the guidance contained in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," Section 17.3, "Quality Assurance Program Description" dated August 1990 (ADAMS Accession No. ML052350376), which provides acceptance criteria for QA program descriptions. NUREG-0800 Section 17.3 outlines a standardized QA program for construction permit holders, their principal contractors and operating facility licensees. The DAEC QATR FPL-3 is organized into three discrete aspect areas:

- Management,
- Performance/verification, and
- Assessment.

Encompassed within the three areas are the 18 criteria of Appendix B to 10 CFR Part 50. The changes made to the QATR include the following:

- a. Change to the introduction section removed, in part, "non-safety related structures and components subject to an Aging Management Program (AMP) for license renewal." The AMP and license renewal commitments are described in the Updated Final Safety Analysis Report (UFSAR) for DAEC. These programs and commitments will continue to be controlled by the 10 CFR 50.59 process. Removing them from the QATR allows them to be changed as necessary throughout the decommissioning process in accordance with 10 CFR 50.59. Regulatory Guide (RG) 1.184, Revision 1, "Decommissioning of Nuclear Power Reactors," October 2013 (ADAMS Accession No. ML13144A840), states in part, "FSAR, or other comparable document, provides a licensing-basis document for the evaluation of licensee activities under 10 CFR 50.59. This licensing basis will have to be updated to cover decommissioning activities." The NRC staff determined these changes continue to meet the guidance of NUREG-0800, Section 17.3, and, therefore, meet the requirements of Appendix B.
- b. The Certified Fuel Handler (CFH) training program ensures that the qualifications of fuel handlers are commensurate with the tasks to be performed and the conditions requiring response. The CFH training program for DAEC was approved by the NRC in a letter dated August 28, 2019 (ADAMS Accession No. ML19204A287).

RG 1.8, Revision 4, "Qualification and Training of Personnel for Nuclear Power Plants" (ADAMS Accession No. ML19101A395), changes remove requirements related to training of positions identified in identified in 10 CFR 50.120, "Training and Qualification

of Nuclear Power Plant Personnel," that are accomplished according to programs accredited by the National Nuclear Accreditation Board of the National Academy for Nuclear Training. The CFH training program ensures that the qualifications of fuel handlers are commensurate with the tasks to be performed and the conditions requiring response. The requirements of 10 CFR 50.120 require training programs to be derived using a systems approach to training (SAT) as defined in 10 CFR 55.4, "Definitions." Although the requirements of 10 CFR 50.120 apply to holders of an operating license issued under Part 50, and the DAEC license no longer authorizes operation, the CFH training program will, nonetheless, align with those requirements. The QATR FPL-3 follows the applicable guidance of NUREG-0800 Section 17.3, paragraph A.5, for the decommissioning phase of plant life.

- c. In QATR Section A, Subsection A.7, "Regulatory Commitments," NEDA proposed to remove Branch Technical Position CMEB 9.5-1, "Guidelines for Fire Protection For Nuclear Power Plants," Revision 2, July 1981, Positions C.2 and C.4, (ADAMS Accession No. ML070660454), and RG 1.205, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," December 2009, (ADAMS Accession No. ML092730314).

In QATR Appendix C, "Definitions," NEDA proposed to change the definition of "Quality Related" as it applies to fire protection equipment, systems, and features. The licensee proposed that "Quality Related" would apply to fire protection equipment, systems, and features that mitigate the potential for fires that could result in a radiological hazard.

In QATR Appendix D, "Administrative Controls," Section 1.0, NEDA proposed a new administrative control for fire protection that would meet the applicable QA guidelines described in Branch Technical Position CMEB 9.5-1, Position C.4, and would follow the guidance of RG 1.191, "Fire Protection Program for Nuclear Power Plants During Decommissioning and Permanent Shutdown," May 2001, (ADAMS Accession No. ML011500010), and National Fire Protection Association guidelines.

Regulation 10 CFR 50.48(f) requires licensees that have submitted the certifications required under Section 50.82(a)(1) to maintain a fire protection program (FPP) to address the potential for fires that could cause the release or spread of radioactive materials. 10 CFR 50.48(f) states that the objectives of the FPP are: (1) Reasonably prevent fires that could result in a radiological hazard from occurring; (2) Rapidly detect, control, and extinguish those fires that do occur and that could result in a radiological hazard; and, (3) Ensure that the risk of fire-induced radiological hazards to the public, environment and plant personnel is minimized. The NRC staff evaluated the licensee's proposed changes and finds them acceptable because they ensure that the fire protection QA program will enable the FPP to meet the objectives during decommissioning as required by 10 CFR 50.48(f).

- d. Change involving removal of Generic Letter 85-06, "Quality Assurance Guidance for ATWS equipment that is not safety-related," dated April 16, 1985 (ADAMS Accession No. ML031140390), from QATR Section A.7, "Regulatory Commitments" applies to operating stations. In a defueled condition, these requirements no longer apply to DAEC. The NRC staff determined these changes continue to meet the guidance of NUREG-0800 Section 17.3, paragraph A.7, and, therefore, meet the requirements of Appendix B.

- e. Change involving removal of Confirmatory Order No. EA-08-172, (ADAMS Accession No. ML082950470) from QATR Section A.7, "Regulatory Commitments" is related to Confirmatory Order Number EA-08-172 being issued to FPL's St. Lucie Nuclear Plant. This statement included in the fleet QATR applied to St. Lucie Nuclear Plant and not DAEC. The NRC staff determined these changes continue to meet the guidance of NUREG-0800, Section 17.3, paragraph A.7, and, therefore, meet the requirements of Appendix B.
- f. Change involving removal of "Consideration is given to phased replacement to permit in-service performance to be evaluated and minimize the possibility of systemic failure" from QATR Section B.13, "Corrective Action" applies to operating stations and refers to common components in safety-related systems. In letter dated September 12, 2019, "Supplement to License Amendment Request (TSCR-183) application to revise technical specifications for the permanently defueled condition" (ADAMS Accession No. ML19261A141), the NRC proposed that in-service testing in accordance with 10 CFR 50.55a(f) will no longer be required once the reactor is permanently shut down and defueled. The NRC staff determined these changes continue to meet the guidance of NUREG-0800, Section 17.3, paragraph B.13, and, therefore, meet the requirements of Appendix B.
- g. Changes involving "Review of emergency operating procedures and off-normal procedures every two years," was removed from QATR Section B.14 "Document Control." The number and complexity of emergency operating procedures and off-normal procedures is greatly reduced following permanent shutdown of the DAEC. Due to the small numbers of these procedures and their reduced complexity, a biennial comprehensive review is no longer necessary. Following permanent shut down, the proposed revision continues to satisfy the criteria of 10 CFR 50, Appendix B; 10 CFR 71, Subpart H and 10 CFR 72, Subpart G. The NRC staff determined these changes continue to meet the guidance of NUREG-0800, Section 17.3, paragraph B.14, and, therefore, meet the requirements of Appendix B.
- h. Changes involving removal of "The listing of nonregulatory independent assessments and their periodicity requirements are removed from Table 1 and will be performed per procedural requirements. Regulatory independent assessments are now listed in Table 1. Table 2 was removed" from QATR Section C.3 "Independent Assessment." Non-regulatory independent assessments are subject to change following DAEC shutdown. Requirements for performance and periodicity for non-regulatory independent assessments will be controlled by procedures and are not required to be identified in the QATR. Assessment of Appendix B requirements contained within non-regulatory programs will continue to be assessed. Independent assessment of regulatory topics remains unchanged. The NRC staff determined these changes continue to meet the guidance of NUREG-0800, Section 17.3, paragraph C, and, therefore, meet the requirements of Appendix B.

3.1 QATR Aspect Area – Management

3.1.1 Methodology

The QATR is the top-level policy document that establishes the quality policy and assigns major functional responsibilities for the DAEC. The QA program applies to activities affecting the performance of safety-related SSCs, including, but not limited to, design; procurement; fabrication; installation; modification; maintenance; repair; fuel handling; training; inspection; and

tests. A list, or other means of identification, of safety-related SSCs under the control of the QA program is established and maintained for the plant. The QA program is also applied to certain activities where regulations other than 10 CFR 50 establish QA program requirements for activities within their scope. Thus, the QATR is applied to the "important to safety" activities of radioactive waste shipping and independent spent fuel storage, as defined in those NRC regulations, as allowed by 10 CFR 71.101(f) and 10 CFR 72.140(d). In establishing, implementing and maintaining the QATR, NEDA commits the DAEC to compliance with the NQA-1-1994, Basic Requirement 2. In establishing procedural controls, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 5. In addition, as stated in Position C.1 of RG 1.33, Revision 2, "Quality Assurance Program Requirements (Operation)," February 1978 (ADAMS Accession No. ML003739995), NEDA commits the DAEC to use Appendix A of RG 1.33, Revision 2, as guidance for establishing the types of procedures that are necessary to control and support plant decommissioning activities. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph A.1, for the decommissioning phase of plant life.

3.1.2 Organization

The organizational structure, functional responsibilities, levels of authority, and interfaces for executing an effective overall QA program, including delegation of program responsibilities, are described in the QATR. Personnel and organization executing performance activities and those performing verification and self-assessment activities are functionally independent. The organizational structure includes corporate functions and onsite functions at DAEC. The organizational relationships of key management and functional groups at both corporate and site levels are identified in Appendix E (Organization Chart) of the February 13, 2020, submittal.

At the corporate level, the NextEra Energy Chairman and Chief Executive Officer (CEO) is responsible for overall corporate policy. The Chief Nuclear Officer (CNO) reports to the Chairman and CEO and has overall responsibility for the implementation of the QA program and for the Nuclear Division's activities including corporate responsibility for overall plant nuclear safety. The Director Nuclear Assurance and Assessment reports to the CNO and is responsible for activities that include establishing, maintaining, and interpreting QA practices and policies, managing independent assessment and establishing quality control practices and policies for quality verification activities. The Director Nuclear Assurance position entails Stop Work authority at the sites and corporate offices.

The Decommissioning Director reports to the CNO and is responsible for the safety-related activities at the plant. Reporting to the Decommissioning Director are the Licensing/Emergency Preparedness Manager, Nuclear Assurance Manager, Engineering Manager, Security Manager, and Operations Manager. The Licensing/Emergency Preparedness Manager is responsible for site regulatory interfaces while maintaining and implementing the emergency plan for the station. The Nuclear Assurance Manager is responsible for site quality activities. The Engineering Manager has functional areas of responsibility that include authority for day-to-day engineering support activities, engineering administration, system engineering, and technical support. Security Manager is responsible for implement of the site security plan. The Operations Manager is responsible for operating strategies that support nuclear and personal safety within the constraints of the decommissioning license and regulatory requirements. In establishing its organizational structure, NEDA commits the DAEC to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph A.2, for the decommissioning phase of plant life.

3.1.3 Responsibility

Positions identified in Section 3.A.2 may delegate all or part of the activities of planning, establishing, or implementing the program for which they are responsible to others, but retain the responsibility for the program's effectiveness. Regardless of delegation, NEDA retains and exercises the responsibility for the scope and implementation of an effective overall QA program. In establishing QA program responsibilities, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph A.3, for the decommissioning phase of plant life.

3.1.4 Authority

When responsibility is delegated for planning, establishing, or implementing any part of the overall QA program, sufficient authority to accomplish the assigned responsibilities is delegated. Regardless of delegation, NEDA retains overall responsibility. In establishing QA program authorities, NEDA commits the DAEC to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1 S-1. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph A.4, for the decommissioning phase of plant life.

3.1.5 Personnel Training and Qualification

Personnel assigned to implement elements of the QA program must be capable of performing their assigned tasks. To this end, indoctrination and training programs are maintained for personnel performing, verifying, or managing activities within the scope of the QA program to assure that suitable proficiency is achieved and maintained. In establishing qualification and training programs, NEDA commits the DAEC to compliance with NQA-1-1994, Basic Requirement 2, Supplements 2S-1, 2S-2, 2S-3, and 2S-4, and Appendix 2A-1 (Part III of NQA-1-1994), with clarifications and exceptions stated in the QATR. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph A.5, for the decommissioning phase of plant life.

3.1.6 Corrective Action

The QATR establishes and implements a corrective action program to promptly identify and correct conditions adverse to quality. For significant condition adverse to quality, the program provides for cause evaluation and corrective action to prevent recurrence. DAEC also establishes and implements measures for controls of nonconforming items to prevent their inadvertent use or installation at DAEC. In establishing provisions for corrective action and control of nonconforming items, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirements 15 and 16, and Supplement 15S-1. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph A.6, for the decommissioning phase of plant life.

3.1.7 Regulatory Commitments

RG 1.8, September 1975, "Personnel Selection and Training," changes remove requirements related to training of positions identified in identified in 10 CFR 50.120 that are accomplished according to programs accredited by the National Nuclear Accreditation Board of the National Academy for Nuclear Training. The CFH training program ensures that the qualifications of fuel handlers are commensurate with the tasks to be performed and the conditions requiring

response. A CFH training program was approved by the NRC in letter dated August 28, 2019. 10 CFR 50.120 requires training programs to be derived using a SAT, as defined in 10 CFR 55.4. Although the requirements of 10 CFR 50.120 apply to holders of an operating license issued under Part 50, and the DAEC license no longer authorizes operation, the Certified Fuel Handler training program will, nonetheless, align with those requirements. NEDA commits DAEC to the provisions of certain QA-related regulatory guidance other than NQA-1-1994 are delineated in QATR Section A.7. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph A.7, for the decommissioning phase of plant life.

3.1.8 Other General Guidance Documents

NUREG/CR-6407, "Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Importance to Safety," February 1996 (ADAMS Accession No. ML15127A114) is already identified in DAEC Independent Spent Fuel Storage Installation (ISFSI) implementing documents as a guidance document.

3.2 QATR Aspect Area – Performance/Verification

3.2.1 Methodology

Personnel who work directly or indirectly for NEDA are responsible for achieving acceptable quality for the scope of activities addressed by the QATR. These activities include design, engineering, procurement, manufacturing, construction, installation, start-up, maintenance, modifications, and operations. Activities are to be performed in accordance with documented instructions, procedures and drawings that contain detail appropriate to the activity's complexity and effect on safety. Instructions, procedures and drawings specify quantitative or qualitative acceptance as applicable or appropriate for the activity, and verification is against these criteria. Provisions are established to designate or identify the proper documents to be used in an activity, and to ascertain that such documents are being used. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.1, for the decommissioning phase of plant life.

3.2.2 Design Control

The QATR establishes and implements design controls of items that are important to safety. The program includes provisions to control design inputs, processes, outputs, changes, interfaces, records and organizational interfaces. These provisions assure that design inputs (such as design bases and the performance, regulatory, quality, and quality verification requirements) are correctly translated into design outputs (such as specifications, drawings, procedures, and instructions) such that the final design output can be related to the design input in sufficient detail to permit verification. Design processes provide for design verification that items and activities subject to the provisions of this QATR are suitable for their intended application, consistent with their effect on safety. Changes to final designs (including field changes) are subjected to these controls, which include measures commensurate with those applied to original plant design. The program defines the interface controls (internal and external between participating design organizations and across technical disciplines) necessary to control the development, review, approval, release, distribution and revision of design inputs and outputs. Records are maintained that are sufficient to provide evidence that the design was properly accomplished. In establishing its program for design control, NEDA commits the DAEC to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1, Sections 1, 2, 3,

5, 6, and 7. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.2, for the decommissioning phase of plant life.

3.2.3 Design Verification

NEDA establishes and implements administrative controls to assure quality is achieved in establishing and changing the design for the nuclear facilities in accordance with industry standards and regulatory requirements. The NEDA design control program includes provisions to control design inputs, processes, outputs, changes, interfaces, records and organizational interfaces. In establishing its program for design control, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1, Section 4. The QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.3, for the decommissioning phase of plant life.

3.2.4 Procurement Control

NEDA establishes and implements controls to assure that applicable regulatory, technical and QA program requirements are included or referenced in procurement documents. These controls include provisions for selection of suppliers and assessing the acceptability of quality. In establishing controls for procurement, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 4 and 7, and Supplements 4S-1 and 7S-1, with the exception as stated in the QATR. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.4, for the decommissioning phase of plant life.

3.2.5 Procurement Verification

NEDA establishes and implements measures to verify the quality of purchased items and services at intervals and to a depth consistent with their effect on safety. In establishing procurement verification controls, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 7, and Supplement 7S-1. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.5, for the decommissioning phase of plant life.

3.2.6 Identification and Control of Items

NEDA establishes and implements provisions for the identification and control of items to prevent the use of incorrect or defective materials/parts. Methods used for identification of items assure traceability of the items to the appropriate documentation. In establishing provisions for identification and control of purchased items, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.6, for the decommissioning phase of plant life.

3.2.7 Handling, Storage, and Shipping

NEDA establishes and implements provisions to control the handling, storage, shipping, cleaning, packaging, and preservation of items to prevent inadvertent damage, loss or deterioration. In establishing provisions for handling, storage, and shipping, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 13, Supplement 13S-1. NEDA also commits the DAEC to compliance with the requirements of NQA-1-1994, Subpart 2.2, with the exception as stated in the QATR. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.7, for the decommissioning phase of plant life.

3.2.8 Test Control

NEDA establishes and implements testing programs to demonstrate that the nuclear facility structures, systems, and components (items) function satisfactorily in service. In establishing provisions for testing, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 11, and Supplement 11S-1. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.8, for the decommissioning phase of plant life.

3.2.9 Measuring and Test Equipment Control

NEDA establishes and implements provisions to control the calibration, maintenance and use of measuring and test equipment (including instruments, gauges, tools, reference and transfer standards, and nondestructive examination equipment) that is used in the measurement, inspection, testing and monitoring of structures, systems, and components. In establishing provisions for control of measuring and test equipment, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 12, Supplement 12S-1, and Subpart 2.16, with alternatives and exception as stated in the QATR. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.9, for the decommissioning phase of plant life.

3.2.10 Inspection, Test, and Operating Status

NEDA establishes and implements measures to identify and document the inspection, test, and operating status of SSCs to prevent their inadvertent use or the bypassing of inspections and tests. In establishing measures for control of inspection, test and operating status, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 14. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.10, for the decommissioning phase of plant life.

3.2.11 Special Process Control

NEDA establishes and implements provisions to assure the acceptability of special processes through the use of procedures, technique sheets, travelers and inspection verification reports, and personnel qualified in accordance with the applicable codes, specifications and standards of the specific work. In establishing measures for the control of special processes, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1, as well as the applicable ASME Boiler and Pressure Vessel Code provisions established via 10 CFR 50.55a. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.11, for the decommissioning phase of plant life.

3.2.12 Inspection

NEDA establishes and implements provisions to inspect activities at its nuclear facilities that affect quality in order to verify conformance with the approved documents for accomplishing the activities, including specifications and quality standards. In establishing provisions for inspections requirements, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 10, Supplement 10S-1, and Subpart 2.4. In addition, for situations comparable to original construction, NEDA commits DAEC to compliance with the requirements of Subparts 2.5 and 2.8 for establishing appropriate inspection requirements. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.12, for the decommissioning phase of plant life.

3.2.13 Corrective Action

In establishing provisions for corrective action and control of nonconforming items, NEDA commits the DAEC to compliance with NQA-1-1994, Basic Requirements 15 and 16, and Supplement 15S-1. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.13, for the decommissioning phase of plant life.

3.2.14 Document Control

NEDA establishes and implements provisions to control the development, review, approval, issuance and use of controlled documents. Measures are provided to assure that documents, including revisions or changes, are reviewed for adequacy by independent knowledgeable personnel other than those who originated or prepared the documents, are approved for release by authorized personnel, and are distributed in accordance with current approved methods. In establishing provisions for document control, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 6 and Supplement 6S-1. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.14, for the decommissioning phase of plant life.

3.2.15 Records

NEDA establishes and implements provisions to ensure sufficient records of items and activities for the nuclear facilities are generated and maintained to reflect completed work. In establishing provisions for records, NEDA commits DAEC to compliance with NQA-1-1994, Basic Requirement 17 and Supplement 17S-1, with alternatives and exception as stated in the QATR. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph B.15, for the decommissioning phase of plant life.

3.2.16 Plant Maintenance

NEDA establishes controls for the maintenance or modification of items and equipment within the scope of the QA program to ensure quality at least equivalent to that specified in the original design bases, such that safety-related SSCs are maintained in a manner that assures their ability to perform their intended safety function(s). In establishing controls for plant maintenance, NEDA commits DAEC to compliance with NQA-1-1994, Subpart 2.16 and 2.18, with exceptions as stated in the QATR.

3.2.17 Computer Software Control

NEDA establishes and implements provisions to assure that computer software used in applications affecting safety is prepared, documented, verified and tested, and used such that the expected output is obtained, and configuration control maintained. NEDA commits DAEC to compliance with NQA-1-1994, Supplement 11S-2 and Subpart 2.7, to establish the appropriate provisions.

3.3 QATR Aspect Area – Assessment

3.3.1 Methodology

NEDA establishes programs for reviews and assessments to verify that activities covered by the QA program are performed in conformance with established requirements, that significant plant

changes, tests, and procedures are reviewed prior to implementation, that reportable events are promptly investigated and corrected, and that adverse trends are identified. These programs are, themselves, subject to review for effectiveness as part of the overall assessment process. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph C.1, for the decommissioning phase of plant life.

3.3.2 Self-Assessment

Self-assessments are conducted to verify compliance and to improve performance. Results of self-assessments are reported to a level of management having the authority to effect corrective actions and verify satisfactory resolution of problems. QATR FPL-3 follows the applicable guidance of NUREG-0800, Section 17.3, paragraph C.2, for the decommissioning phase of plant life.

3.3.3 Independent Assessment

Independent assessments (or audits) are performed to monitor overall performance and to confirm that applicable activities conform to the requirements of the QA program and that the QA program is effectively implemented. The process for selection and scheduling of audits is based on the status, performance, and effect on safety of the process being assessed. In establishing and implementing the audit program, NEDA commits DAEC to comply with requirements contained in NQA-1-1994, Basic Requirement 18 and Supplement 18S-1, with the clarification that the term "audit" and "independent assessment" are synonymous and may be used interchangeably.

4.0 CONCLUSION

The NRC staff used the acceptance criteria of NUREG-0800, Section 17.3 as the basis for evaluating the acceptability of the DAEC QATR FPL-3 in conformance with the applicable portions of Appendix B to 10 CFR Part 50. The program description adequately describes the provisions to meet the requirements of Appendix B. The staff concludes that the proposed DAEC QATR FPL-3 follows the NRC guidance contained within, and conforms to the format of NUREG-0800, Section 17.3 complies with Appendix B to 10 CFR Part 50 requirements for the QA program and is, therefore, acceptable. The staff also finds that the proposed DAEC QATR FPL-3 complies also with 10 CFR Part 71 and 10 CFR Part 72 activities in accordance with 10 CFR 71.101(f) and 10 CFR 72.140(d), respectively. The staff may also conduct a QA implementation inspection at DAEC to verify that the DAEC QATR FPL-3 is being implemented appropriately.

The approval of the DAEC QATR FPL-3 does not become effective until NEDA submits the required 10 CFR 50.82(a)(1)(ii) certification that DAEC has permanently defueled. NEDA will have 60 days to implement the DAEC QATR FPL-3 once the Certification of Permanent Fuel Removal has been docketed.

Principal Contributors: D. Parks
J. Robinson

Date: August 27, 2020

SUBJECT: DUANE ARNOLD ENERGY CENTER – APPROVAL OF QUALITY
ASSURANCE TOPICAL REPORT (FPL-3, REVISION 0)
(EPID L-2020-LLQ-0002) DATED AUGUST 27, 2020

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| DATE | 08/12/20 | 08/12/20 | 08/06/2020 | 08/14/2020 |
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