Evaluation of Request to Consolidate the North Anna Power Station and Surry Power Station Local Emergency Operations Facilities at Corporate Emergency Response Center

1.0 BACKGROUND

By letter dated January 16, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18025B468), as supplemented by letter dated June 13, 2018 (ADAMS Accession No. ML18169A224), Virginia Electric and Power Company (referred to hereafter as Dominion Energy Virginia) submitted a license amendment request to the U.S. Nuclear Regulatory Commission (NRC) to consolidate the local emergency operations facilities (EOFs), the common back-up EOF, and the headquarters support organization for North Anna Power Station (NAPS), Units 1 and 2 and Independent Spent Fuel Storage Installation (ISFSI), and Surry Power Station (SPS), Units 1 and 2 and ISFSI. The proposed consolidated EOF, referred to herein as the Corporate Emergency Response Center (CERC), will be located in the Innsbrook Technical Center at 5000 Dominion Boulevard in Glen Allen, Virginia. The proposed CERC would replace the existing local EOFs for NAPS Units 1 and 2 and ISFSI, and SPS Units 1 and 2 and ISFSI. The facility being considered for the proposed CERC currently serves as the backup EOF for both sites and as the center for the headquarters support organization. The proposed CERC is approximately 30 miles from the NAPS site and approximately 59 miles from the SPS site. As such, prior Commission approval is required per paragraph IV.E.8.b of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the *Code of Federal Regulations* (10 CFR).

Dominion Energy Virginia stated in its submittal that:

> The North Anna Unit 3 (NA3) combined operating license [COL] (NPF-103, 052000017) Emergency Plan describes the NAPS local EOF and the central (back-up) EOF. Following approval and implementation of this license amendment, these facilities will cease to exist. A NA3-specific license amendment would be needed to reference the proposed CERC in the NA3 COL Emergency Plan prior to commencing operation at NA3. If Dominion Energy Virginia decides to construct NA3, a separate license amendment would be developed and submitted.

Therefore, NAPS Unit 3 is not a part of this review. As such, further references to NAPS in this evaluation will only apply to Units 1 and 2, and the ISFSI.

Separate Commission approval will be required per Appendix E to 10 CFR Part 50 at a later date if the licensee eventually decides to consolidate the local EOF for NAPS Unit 3 with the CERC proposed in the licensee's submittal.

2.0 REGULATORY REQUIREMENTS AND GUIDANCE

2.1 Regulatory Requirements

The NRC staff considered the following relevant regulations in its evaluation of Dominion Energy Virginia's request to consolidate the EOFs for NAPS and SPS at the proposed CERC:

- Paragraph 50.47(b) of 10 CFR Part 50, which states, in part: “The onsite and, except as provided in paragraph (d) of this section, offsite emergency response plans for nuclear power reactors must meet the following standards.”

- Paragraph 50.47(b)(1) of 10 CFR Part 50, which states, in part: “Primary responsibilities for emergency response by the nuclear facility licensee…have been assigned…and each principal response organization has staff to respond and to augment its initial response on a continuous basis.”

- Paragraph 50.47(b)(3) of 10 CFR Part 50, which states, in part: “…arrangements to accommodate State and local staff at the licensee’s Emergency Operations Facility have been made….”

- Paragraph 50.47(b)(8) of 10 CFR Part 50, which states: “Adequate emergency facilities and equipment to support the emergency response are provided and maintained.”

- Paragraph 50.47(b)(9) of 10 CFR Part 50, which states: “Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.”

- Paragraph IV.E.8.b of Appendix E to 10 CFR Part 50 which states, in part: “For an emergency operations facility located more than 25 miles from a nuclear power reactor site, provisions must be made for locating NRC and offsite responders closer to the nuclear power reactor site so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site.”

As required by paragraph IV.E.8.b of Appendix E to 10 CFR Part 50, the near-site facility for NRC and offsite responders must include the following:

(1) Space for members of an NRC site team and Federal, State, and local responders;

(2) Additional space for conducting briefings with emergency response personnel;

(3) Communication with other licensee and offsite emergency response facilities;

(4) Access to plant data and radiological information, and

(5) Access to copying equipment and office supplies.

Paragraph IV.E.8.c of Appendix E to 10 CFR Part 50 further establishes the following minimum capabilities for a licensee’s EOF:

(1) The capability for obtaining and displaying plant data and radiological information for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves;

(2) The capability to analyze plant technical information and provide technical briefings on event conditions and prognosis to licensee and offsite response organizations for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves; and

(3) The capability to support response to events occurring simultaneously at more than one nuclear power reactor site if the emergency operations facility serves more than one site.

2.2 Guidance

Revision 1 to NUREG-0654/FEMA [Federal Emergency Management Agency]-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (ADAMS Accession No. ML040420012), establishes evaluation criteria related to the EOF under applicable planning standards.

Evaluation Criterion 2 in Section II.H, "Emergency Facilities and Equipment," of NUREG-0654 references NUREG-0696, "Functional Criteria for Emergency Response Facilities" (ADAMS Accession No. ML051390358), which provides criteria for the NRC staff to use in evaluating whether an applicant or licensee meets the requirements in paragraph IV.E.8 of Appendix E to 10 CFR Part 50. Section 4, "Emergency Operations Facility," of NUREG-0696 provides compliance criteria for the EOF in the following categories:

- Functions (section 4.1);
- Location, Structure, and Habitability (section 4.2);
- Staffing and Training (section 4.3);
- Size (section 4.4);
- Radiological Monitoring (section 4.5);
- Communications (section 4.6);
- Instrumentation, Data System Equipment, and Power Supplies (section 4.7);
- Technical Data and Data System (section 4.8), and
- Records Availability and Management (section 4.9).

The Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR) Interim Staff Guidance (ISG) document, NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants," dated November 2011 (ADAMS Accession No. ML113010523) supplements NUREG-0696 and provides guidance in Section IV.I for a performance-based approach for evaluating changes to a consolidated EOF.

3.0 NRC STAFF EVALUATION

3.1 Functions

In Section 2.1 to Attachment 1, "Discussion of Proposed Change," of its January 16, 2018, letter, Dominion Energy Virginia discussed how the proposed CERC will have the facilities and capability for: (1) managing overall licensee response; (2) coordinating radiological and environmental assessment; (3) determining recommended public protective actions; (4) notifying offsite agencies; (5) coordinating event, plant, and response information provided to public information staff for dissemination to the media and the public; (6) staffing and activating the facility within time frames and at emergency classification levels defined in the licensee emergency plan; (7) coordinating emergency response activities with Federal, State, tribal and local agencies; (8) locating NRC and offsite agency staff closer to a site if the EOF is greater than 25 miles from the site; (9) obtaining and displaying key plant data and radiological information for each unit or plant the EOF serves; (10) analyzing plant technical information and providing technical briefings on event conditions and prognosis to licensee staff and offsite agency responders for each type of unit or plant; and (11) effectively responding to and coordinating response efforts for events occurring simultaneously at more than one site for a consolidated EOF.

Dominion Energy Virginia further stated that the proposed CERC will assume responsibility for the offsite notification of emergency declarations and protective action recommendations (PARs), with the respective site's technical support center (TSC) continuing to have the responsibility for event classification. Section 2.1 to Attachment 1 of the Dominion Energy Virginia submittal states: "If the proposed CERC becomes unavailable during an event, the NAPS and SPS TSCs will have the capability to determine PARs for the public, notify offsite agencies, and perform dose assessments."

The proposed CERC will also continue its current function of housing offsite response organizations, including Federal agencies, to coordinate information and deploy emergency resources from State and Federal agencies. Working space is provided for licensee emergency response organization (ERO) staff and a dedicated room is available for the Commonwealth of Virginia, consistent with the criteria in Section II.H.2 of NUREG-0654 and Section 4.1 of NUREG-0696. Local agencies do not currently respond to the existing local EOFs, and this is expected to continue once the local EOFs are consolidated at the CERC.

Access to the CERC will be controlled through the use of electronic card readers to allow entry only to authorized personnel, and initial access to the Innsbrook Technical Center will be via normal industrial security, which is consistent with Section 4.1 to NUREG-0696.

Section IV.1 of NSIR/DPR-ISG-01, which supplements the guidance in Section 4.1 of NUREG-0696, states, in part, that the EOF will have facilities and capabilities for: "[e]ffectively responding to and coordinating response efforts for events occurring simultaneously at more than one site for a co-located or consolidated EOF." In Section 2.1 to Attachment 1 of its January 16, 2018 letter, Dominion Energy Virginia stated the following:

> The proposed CERC is capable of monitoring and analyzing events at NAPS and SPS simultaneously. A sufficient number of workstations are available for data retrieval and the facility has adequate display capability to simultaneously

present this information to the CERC staff. In the event both stations are in an emergency class requiring CERC activation, supplemental staff is mobilized to support the additional station. Separate NAPS and SPS communications networks will be used for notifying the Commonwealth of Virginia, and the NAPS and SPS plume exposure pathway risk jurisdictions. Site-specific work spaces in the command center area and the separate NAPS and SPS Health Physics/Accident Assessment & Virginia Radiological Health rooms provide a physical separation to segregate response efforts.

The NRC staff and FEMA jointly observed a dual-site drill from the CERC on March 5, 2018, which involved simulated, simultaneous emergency events at both NAPS and SPS. Dominion Energy Virginia also provided the opportunity for the Commonwealth of Virginia to participate. Based on a review of the licensee's submittal and observation of the March 5, 2018 dual-site drill, the staff confirmed that the proposed CERC can effectively respond to and coordinate response efforts for events occurring simultaneously at the NAPs and SPS sites, and does not negatively alter the EOF functions. Therefore, the staff has concluded that the CERC is consistent with the guidance in NUREG-0696, as supplemented by NSIR/DPR-ISG-01, and meets the relevant standards of 10 CFR 50.47(b) and the requirements of paragraph IV.E.8 of Appendix E to 10 CFR Part 50.

3.2 Location, Structure, and Habitability

Section 4.2 of NUREG-0696, as supplemented by Section IV.1 of NSIR/DPR-ISG-01, provides guidance on considerations for the location of an EOF.

3.2.1 Location

The CERC will be located in the Innsbrook Technical Center located at 5000 Dominion Boulevard in Glen Allen, Virginia, which is approximately 30 miles from the NAPS site and approximately 59 miles from the SPS site. The Innsbrook Technical Center serves as the corporate offices for Dominion Energy Virginia, and as such, would support the timely staffing of the CERC with appropriate technical and administrative disciplines, as demonstrated in the March 5, 2018 dual-site drill, to effectively respond to and coordinate response efforts for events occurring simultaneously at the NAPs and SPS sites.

In Section 1.2 to Attachment 1, "Detailed Description Change," of its January 16, 2018, letter, Dominion Energy Virginia stated the CERC would be activated after an Alert or higher emergency classification is declared, and provided the following table providing a historical perspective on declarations that required EOF activation at the NAPS and SPS sites:

Date	Station	Declaration
July 3, 1980	North Anna	Alert
December 9, 1986	Surry	Alert
July 15, 1987	North Anna	Alert
February 25, 1989	North Anna	Alert
April 24, 1993	North Anna	Alert
October 7, 2006	Surry	Alert

August 23, 2011	North Anna	Alert

This summary indicates that historically the EOF has not needed to be activated for simultaneous events occurring at both NAPS and SPS during their operation.

In addition, per Section IV.E.8.b to Appendix E of 10 CFR Part 50, a backup EOF is only required when the primary EOF is located within 10 miles of the nuclear power reactor site. As such, a backup EOF is no longer required for the NAPS and SPS sites.

3.2.1.1 Offsite Agreement

Planning standard 10 CFR 50.47(b)(3) requires that arrangements be made to accommodate State and local staff at the licensee's EOF. In Section 2.1 to Attachment 1 of its January 16, 2018 letter, Dominion Energy Virginia stated the following:

> Arrangements meeting the 10 CFR 50.47(b)(3) emergency planning standard for accommodating responding organizations exists at the NAPS and SPS local EOFs, and exists in the back-up central EOF. The proposed CERC will utilize the same areas as the back-up central EOF, which includes separate conference rooms for the NRC Region II Site Team and Commonwealth of Virginia liaisons, desk space in the main work area and designated work-stations in the site-specific Health Physics/Accident Assessment & Virginia Radiological Health rooms.

Section 4.2 to NUREG-0696, as supplemented by Section IV.1 of NSIR/DPR-ISG-01, states that "It is strongly recommended that the EOF location be coordinated with State and local authorities to improve the relationship between the licensee and offsite organizations." Currently, local agencies do not respond to the local EOFs for NAPS and SPS, and are not expected to respond to the CERC upon consolidation. In Attachment 8, "Offsite Response Agency Letters of Concurrence," to the January 16, 2018 letter, signed letters of concurrence were provided from the following offsite response agencies:

- Virginia Department of Emergency Management,
- Virginia Department of Health,
- James City County,
- Surry County,
- Louisa County, and
- Spotsylvania County.

Per the "Memorandum of Understanding Between the Department of Homeland Security/Federal Emergency Management Agency and Nuclear Regulatory Commission Regarding Radiological Response, Planning and Preparedness," dated December 7, 2015 (ADAMS Accession No. ML15344A371), the NRC requested that FEMA evaluate the impact of the proposed consolidation of the local EOFs for NAPS and SPS at the CERC on offsite radiological emergency plans and preparedness, and provide its findings to the NRC. By letter dated April 25, 2018 (ADAMS Accession No. ML18115A260), FEMA stated:

> The FEMA Region III REP [Radiological Emergency Preparedness] staff reviewed the proposed consolidation of EOFs to determine the adequacy of offsite radiological emergency plans and preparedness.… FEMA finds that the offsite plans and procedures are not negatively impacted by the above changes.
>
> Based on the March 5th drill results, FEMA did not find any impediments to the Commonwealth of Virginia's emergency response organization's operating from Dominion's common EOF. Offsite radiological emergency plans and preparedness are not negatively impacted by the change.

3.2.1.2 Impact on NRC's Incident Response

In Section 2.1 to Attachment 1 of its January 16, 2018, letter, Dominion Energy Virginia stated that the proposed CERC includes a separate conference room for the NRC Region II Site Team, as well as desk space in the main work area and designated work-stations in the site-specific Health Physics/Accident Assessment and Virginia Radiological Health rooms. NRC staff confirmed through observation at the March 5, 2018, dual-site drill, that the proposed CERC provided adequate space and access to communications and plant data for the affected site(s) to effectively support NRC Region II Site Team activities and interface with licensee EOF staff and representatives from the Commonwealth of Virginia.

Paragraph IV.E.8.b of Appendix E to 10 CFR Part 50 requires that, for an EOF located more than 25 miles from a nuclear reactor site, provisions be made for locating NRC and offsite responders closer to the reactor site to facilitate face-to-face interaction with emergency personnel entering and leaving the site. Section IV.I to NSIR/DPR-ISG-01 provides guidance describing the minimum provisions at this near-site location, consistent with paragraph IV.E.8.b of Appendix E to 10 CFR Part 50.

Dominion Energy Virginia's near-site response locations are at the North Anna Nuclear Information Center and the Surry Nuclear Information Center. These near-site response locations, as described in the submittal, will provide a location for the NRC and other offsite agency staff to interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site. Each near-site response location will provide provisions consistent with the guidance in Section IV.I to NSIR/DPR-ISG-01, which includes a conference area with whiteboards, separate areas suitable for briefing and debriefing response personnel, telephones, site contact lists, computers with internet access, access to a copier and office supplies, and access to plant radiological information.

Based on a review of the licensee's submittal and dual-site drill observation at the proposed CERC on March 5, 2018, the NRC staff finds that the physical location of the CERC and the near-site response locations, would be consistent with the guidance in NUREG-0696, as supplemented by NSIR/DPR-ISG-01, and meet the requirements of paragraph IV.E.8.b of Appendix E to 10 CFR Part 50.

3.2.2 Structure

Section 4.2 of NUREG-0696, as supplemented by Table 2 to Section IV.1 of NSIR/DPR-ISG-01, provides guidance that, for an EOF located at or beyond 10 miles from a nuclear power reactor site, the structure be "Well engineered for design life of plant," and provides the "Uniformed

Building Code" as an example building code. In addition, the structure should to be able to withstand adverse conditions of high winds and floods. In Section 2.2 to Attachment 1 of its January 16, 2018 letter, Dominion Energy Virginia stated that the building in which the CERC is located, is capable of withstanding wind loads and live loads equal to or greater than those specified in the Building Officials and Code Administrators International National Building Code/1981, which is the standard building code used on the East Coast of the United States. The NRC staff verified that the physical location of the CERC is outside of the FEMA flood map boundary, and is classified as an "Area of Minimal Flood Hazard".

Based on a review of the licensee's submittal and dual-site drill observation at the proposed CERC on March 5, 2018, the NRC staff finds that the physical structure of the proposed CERC is consistent with the guidance in NUREG-0696, as supplemented by NSIR/DPR-ISG-01, and meets the structural requirements of 10 CFR 50.47(b)(8).

3.2.3 Habitability

Section 4.2 of NUREG-0696, as supplemented by Table 2 to Section IV.1 of NSIR/DPR-ISG-01, provides guidance for the ventilation standards and protection factor for a radiological release. Because the CERC is located beyond 10 miles from the respective nuclear power reactor sites it supports, EOF functions would not be impacted by a radiological release from Dominion Energy Virginia sites due to the distance from each respective site as described in Section 3.2.1. In these situations, the criteria in Table 2 of NSIR/DPR-ISG-01 state that no specialized ventilation systems or protection factor are needed. As such, the NRC staff finds the habitability of the CERC is consistent with the guidance in NUREG-0696, as supplemented by NSIR/DPR-ISG-01, and meets the facility habitability requirements of 10 CFR 50.47(b)(8).

3.3 Staffing and Training

Section 4.3 of NUREG-0696, as supplemented by Section IV.1 of NSIR/DPR-ISG-01, provides guidance on EOF staffing and training to provide for the overall management of licensee resources and the continuous evaluation and coordination of licensee activities during and after an accident. In addition, Section 4.3 to NUREG-0696 provides guidance on the conduct of periodic EOF activation drills in accordance with the licensee's emergency plan.

The proposed CERC is located in the Innsbrook Technical Center, which serves as the corporate offices for Dominion Energy Virginia, and thereby allows for prompt response by corporate support and management personnel with expertise from various disciplines. In Section 2.3 to Attachment 1 of its January 16, 2018 letter, Dominion Energy Virginia stated:

> The headquarters support organization and back-up central EOF staff currently mobilize at an Alert or higher emergency per the CERP [Corporate Emergency Response Plan], and NAPS and SPS emergency plans, and will continue to do so as the CERC staff upon implementation of the proposed consolidation. In the event both stations are in an emergency class requiring CERC activation, supplemental staff will be mobilized to support the additional station. The activation time goal for the proposed CERC is within 75 minutes of the declaration of an Alert or higher emergency class by either station, with activation defined as the assembly of required positions in the proposed CERC and the CERC Corporate Response Manager declaring the facility activated.

In its submittal, Dominion Energy Virginia included Table 2.3-1, "Current and Proposed CERC Staffing for Activation," which compares the positions currently needed for activation of the current local EOFs, the current headquarters support organization, and the proposed CERC. Table 2.3-1 demonstrates that the staffing of the proposed CERC will be a combined organization that includes the personnel required to perform the necessary functions from the current local EOFs and the current headquarters support organization. The staff observed the staffing of the proposed CERC during the dual-site drill and determined that the staffing was adequate to perform the intended functions of an EOF.

Regarding the training of the proposed CERC personnel, the Dominion Energy Virginia submittal also stated:

> The same training program guide for the current local EOF staff also governs training for the back-up central EOF and headquarters support organization staffs. Prior to implementation of the proposed CERC, the training program guide will be revised to reflect the new roles of the proposed CERC and the ERO members filling these roles will be qualified accordingly. Training for key ERO members supporting NAPS and SPS will include station-specific differences, e.g., plume exposure pathway risk jurisdictions, release pathways, station ingress and egress routes, offsite protective action zones, and evacuation time estimates. NAPS Unit Nos. 1 and 2, and SPS Unit Nos. 1 and 2, are 3-loop Westinghouse pressurized water reactors, and both stations have Independent Spent Fuel Storage Installations; thus, the plans and procedures for operation and emergency response are similar.

In order to ensure that EOF staff remain proficient in skills required to perform EOF functions for both NAPS and SPS, Dominion Energy Virginia will use the ERO Performance Indicator (PI) under the Emergency Preparedness Cornerstone,[1] which allows the licensee and NRC staff to verify the licensee's ability to meet the performance-based consolidated EOF criteria and to adequately cope with an emergency at any of the licensee's sites. The PI tracks the participation of ERO members assigned to fill key positions in performance enhancing experiences, and ensures that the risk-significant aspects of classification, notification, and PAR development are evaluated and included in the PI process. The PI also ensures that utilities with common EOFs where personnel are assigned to the key positions that support multiple nuclear sites are monitored to ensure that each receives a meaningful opportunity to gain proficiency.

Based on a review of the licensee's submittal and dual-site drill observation at the proposed CERC on March 5, 2018, the NRC staff concludes that the staffing and training of the proposed CERC is consistent with the guidance in NUREG-0696, as supplemented by NSIR/DPR-ISG-01, and meets the requirements of 10 CFR 50.47(b)(1).

[1] Nuclear Energy Institute (NEI) document, NEI 99-02, Revision 7, "Regulatory Assessment Performance Indicator Guideline," dated August 31, 2013 (ADAMS Accession No. ML13261A116)

3.4 Size

Section 4.4 to NUREG-0696, as supplemented by Section IV.1 to NSIR/DPR-ISG-01, provides guidance that the EOF building should be large enough to provide adequate work space for personnel assigned to the EOF as specified in the licensee's emergency plan, at the maximum level of occupancy without crowding, as well as provide separate office space to accommodate NRC staff and other Federal personnel.

Figure 2.4-1, "Layout of Proposed CERC," included in Section 2.4 to Attachment 1, of Dominion Energy Virginia's January 16, 2018 letter, provided the proposed layout for the proposed CERC, illustrating a main Command Center area and separate work areas for Federal responders, the Virginia Department of Emergency Management, Health Physics/Accident Assessment and Virginia Radiological Health (separate rooms for each site), communications, briefings, administrative support, and Governmental Affairs, Media Monitoring and News Room. Dominion Energy Virginia's submittal also stated that the total usable space and working space of the proposed CERC is approximately 5,987 square feet, and that the expected number of EOF personnel during a dual-site event, including offsite agency responders, will be less than 60 people. Based on the guidance in Section 4.4 of NUREG-0696 of approximately 75 square feet per person, this would provide space for up to 80 people. Therefore, the proposed CERC should provide adequate working space for the number of ERO staff at the projected maximum level of occupancy without crowding.

Space in the proposed CERC is allocated for functional activities of accident assessment, radiation assessment, offsite monitoring, offsite communications, command and control, conferences, NRC personnel, and storage. There is sufficient space for the service of equipment, displays, and instrumentation within the new facility. Phones and special communications equipment are provided as needed throughout the new facility at personnel workstations. Individuals needing access to plant data are provided access via personal computers with Internet access. Functional displays of data are made available through use of computer monitors and video display monitors.

As part of its evaluation, the NRC staff observed a dual site drill at the proposed CERC on March 5, 2018, and verified that the new facility provides for sufficient work space, which will enhance Dominion Energy Virginia's ability to effectively support simultaneous events at multiple nuclear power reactor sites, while providing dedicated work space for NRC Site Team and State representatives responding to the facility.

Based on a review of the licensee's submittal and dual-site drill observation at the proposed CERC on March 5, 2018, the NRC staff finds that the CERC will be of sufficient size to accommodate and support Federal, State, and licensee ERO personnel, equipment and documentation in the CERC, which is consistent with the guidance in NUREG-0696, as supplemented by NSIR/DPR-ISG-01, and meets the facility size requirements of 10 CFR 50.47(b)(8) and paragraph IV.E.8.c to Appendix E of 10 CFR Part 50.

3.5 Radiological Monitoring

The guidance in Section 4.5 to NUREG-0696 specifies that to ensure adequate radiological protection of EOF personnel, radiation monitoring systems should be provided in the EOF. The CERC will be located beyond 10 miles from the NAPS and SPS plants. No other NRC-licensed

nuclear power reactor site is located within 10 miles of the proposed CERC. The staff finds that based on the physical location of the proposed consolidated EOF, EOF personnel would not be impacted by a radiological release from any nuclear power plant site. Therefore, radiological monitoring capabilities for EOF personnel, as described in NUREG-0696, as supplemented by NSIR/DPR-ISG-01, are not needed.

3.6 Communications

Section 4.6 of NUREG-0696 provides guidance that the EOF shall have reliable voice communications facilities to the respective site's TSC and control room, the NRC, and State and local emergency operations centers (EOCs), and describes the primary functions of the EOF voice communications facilities.

In Section 2.6 to Attachment 1 of its January 16, 2018 letter, Dominion Energy Virginia described the communications systems for the proposed CERC as including:

- Dominion Energy Virginia-installed telephone system, with access to the Dominion Energy Virginia internal phone system, public switched network and long distance;
- NAPS and SPS Insta-Phones (for providing emergency notifications to the Commonwealth of Virginia and site-specific risk jurisdiction 911 Centers/EOCs);
- Radio systems for communication with NAPS and SPS field monitoring teams to coordinate radiological monitoring;
- NRC Emergency Telecommunications System telephones (Emergency Notification System, Health Physics Network, Protective Measures Counterpart Link, Reactor Safety Counterpart Link, Management Counterpart Link, and local area network connection are provided by the Dominion Energy Virginia communications infrastructure);
- Virginia Satellite Radio/Telephone (to be installed upon implementation);
- Facsimile (fax) transmission capability, and
- Scanning (email) transmission capability.

According to Dominion Energy Virginia's submittal, reliable voice communications are provided at the CERC to the NAPS and SPS control rooms (Units 1 and 2), respective site's TSC, the NRC, State and local EOCs, nuclear steam supply system suppliers, FEMA, the U.S. Department of Energy, and the joint information center. The Insta-Phones would serve as the primary means of communicating event classification information to the Commonwealth of Virginia and site-specific risk jurisdiction 911 centers/local EOCs located within the 10-mile plume exposure pathway emergency planning zone. Existing commercial telephone and fax service will serve as the back-up means of communications.

Based on a review of the licensee's submittal and dual-site drill observation at the proposed CERC on March 5, 2018, the NRC staff finds that the proposed CERC has sufficient internal and external telecommunications capabilities to support EOF functions for simultaneous events at NAPS and SPS. As such, the NRC staff has concluded that the proposed CERC will provide for reliable EOF voice and data communications and information collection consistent with the guidance in NUREG-0696, and meets the communications requirements of 10 CFR 50.47(b)(8).

3.7 Instrumentation, Data System Equipment, and Power Supplies

Section 4.7 of NUREG-0696 provides guidance on equipment to gather, store and display data needed in the EOF to analyze and exchange information on plant conditions, as well as criteria to perform these functions.

In Section 2.7 to Attachment 1 of its January 16, 2018 letter, Dominion Energy Virginia stated:

> Data acquisition will be achieved through a secure connection to plant computer servers, which allows the proposed CERC to access displays that are representative of the displays in the respective site control room via the Dominion Energy Virginia Wide Area Network (WAN) and Local Area Network (LAN). The availability goal of the WAN and LAN exceeds that of the goal of .01 unavailability, as specified in NUREG-0696. These displays provide data points and parameters that are available to the operators in the control rooms and emergency responders in the respective site's TSC. The proposed CERC's video display system presents the graphics on screens in the Command Center area.

Dominion Energy Virginia's submittal further stated that the LAN equipment housed within the proposed CERC is provided with back-up power. Additionally, the core network equipment in the Innsbrook Technical Center is also provided with back-up power. Backup electrical power for the proposed CERC is supplied by at least one of the following: generator, DC battery, and/or uninterruptable power supply systems. Therefore, a loss of primary power, which is provided by commercial power, would not impact voice or data communications equipment in the proposed CERC. The proposed CERC has multiple workstations and displays available for the licensee to monitor conditions at NAPS and SPS simultaneously.

Based on a review of the licensee's submittal and dual-site drill observation at the proposed CERC on March 5, 2018, the NRC staff finds that the CERC provides for sufficient EOF instrumentation, data system equipment, and reliable power supplies. As such, the NRC staff concludes that the CERC will provide reliable equipment to gather, store and display data needed in the CERC to analyze and exchange information on plant conditions consistent with the guidance in Section 4.7 to NUREG-0696, and meets the requirements of 10 CFR 50.47(b)(8) and (9), and paragraph IV.E.8.c of Appendix E to 10 CFR Part 50.

3.8 Technical Data and Data Systems

Section 4.8 of NUREG-0696 provides guidance on the technical data system needed to receive, store, process and display information sufficient to perform assessments of the actual and potential onsite and offsite environmental consequences of an emergency condition.

In Section 2.8 to Attachment 1 of its January 16, 2018, letter, Dominion Energy Virginia stated that the CERC will have the capability to receive, store, process, and display information needed to perform assessments of actual and potential offsite consequences of an emergency at NAPS and SPS. Dominion Energy Virginia further stated that the CERC data system will meet the functional intent of the data display and data storage requirements discussed in Sections 4.7 and 4.8 of NUREG-0696. This means that the CERC has access to the same data points that are available to operators in each respective site's control room and emergency responders in the TSC and operational support center. The CERC data set will include radiological, meteorological, and other environmental data needed to assess environmental conditions, coordinate radiological monitoring activities, and recommend implementation of offsite protective actions. This capability includes sensor data of the Type A, B, C, D, and E variables as described in Regulatory Guide 1.97, “Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants,” and the meteorological variables required by both Regulatory Guide 1.23, “Meteorological Monitoring Programs for Nuclear Power Plants,” and NUREG-0654.

Based on a review of the licensee’s submittal and dual-site drill observation at the CERC on March 5, 2018, the NRC staff concludes that the CERC will provide for the sufficient receipt, storage, processing and display of information to perform assessments of the actual and potential onsite and offsite environmental consequences of an emergency condition consistent with the guidance in Section 4.8 to NUREG-0696, and meets the information systems requirements of 10 CFR 50.47(b)(8) and (9) and paragraph IV.E.8.c of Appendix E to 10 CFR Part 50.

3.9 Records Availability and Management

Section 4.9 of NUREG-0696 provides guidance on ready access to up-to-date plant records, procedures and emergency plans, etc., needed to exercise overall management of licensee emergency response resources. In Section 2.9 to Attachment 1 of its January 16, 2018, letter, Dominion Energy Virginia stated that hard copies of key reference materials for NAPS and SPS will be maintained in the facility and distributed via a controlled distribution process. In addition, station design documentation, plant drawings, procedures, etc., are available electronically via the local area network connection.

Based on a review of the licensee’s submittal and a walk down of the CERC on March 5, 2018, the NRC staff finds that the CERC provides for records availability and management consistent with the guidance in Section 4.9 to NUREG-0696, and meets the records requirements of 10 CFR 50.47(b)(8).

4.0 CONCLUSION

On the basis of its evaluation, the staff concludes the proposed consolidated EOF will fulfill necessary emergency response functions and meet applicable planning standards in 10 CFR 50.47 and the requirements of Appendix E of 10 CFR Part 50, and is consistent with the guidance in Section 4 of NUREG-0696, as supplemented by Section IV.I of NSIR/DPR-ISG-01. Given the technological capabilities of the facility; its demonstrated capacity to address simultaneous, multi-site events; and, the staffing of an ERO that will be comprised of experienced and diverse disciplines, the NRC staff finds that there is reasonable assurance that protective measures can and will be implemented in the event of a radiological emergency at any of the sites that the proposed CERC will serve.