

SAFETY EVALUATION BY THE OFFICE OF
NUCLEAR SECURITY AND INCIDENT RESPONSE
RELATED TO AMENDMENT NO. 300 TO
RENEWED FACILITY OPERATING LICENSE NO. DPR-40
OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION, UNIT 1
DOCKET NO. 50-285

1.0 INTRODUCTION

The Fort Calhoun Station (FCS) is a decommissioning power reactor located midway between Fort Calhoun and Blair, Nebraska, on the west bank of the Missouri River. The site is located approximately 19 miles North of Omaha, Nebraska and four miles South of Blair. Omaha Public Power District (OPPD, the licensee) is the holder of Renewed Facility Operating License No. DPR-40, issued pursuant to the Atomic Energy Act of 1954, as amended, and Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the *Code of Federal Regulations* (10 CFR).

By letter dated November 13, 2016 (Reference 1), OPPD certified to the NRC that FCS had permanent cessation of power operations on October 24, 2016 and that fuel had been permanently removed from the reactor vessel pursuant to 10 CFR 50.82(a)(1)(i) and 10 CFR 50.82(a)(1)(ii). Upon docketing of the certification, and pursuant to 10 CFR 50.82(a)(2), the FCS facility operating license no longer authorized operation of the reactor or emplacement or retention of fuel into the reactor vessel.

By application dated February 28, 2019 (Reference 2), as supplemented by letter dated November 20, 2019 (Reference 3), the licensee requested changes to the FCS Permanently Defueled Emergency Plan (PDEP) pursuant to 10 CFR 50.54(q). The proposed changes replace the FCS PDEP and associated Permanently Defueled Emergency Action Level (EAL) Technical Bases Document (hereafter referred to as the EAL scheme) with an Independent Spent Fuel Storage Installation Only Emergency Plan (IOEP) and associated EAL scheme.

The proposed changes would reflect the decommissioning status of the facility, as well as the reduced scope of potential radiological accidents, once all spent fuel has been moved from the spent fuel pool (SFP) to dry cask storage within the onsite independent spent fuel storage installation (ISFSI), which is currently scheduled for completion in Year 2020.

The supplement to the application, dated November 20, 2019, provided additional information that clarified the application but did not expand the scope of the application as originally noticed and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on May 7, 2019 (84 FR 19964).

2.0 REGULATORY EVALUATION

This safety evaluation addresses the acceptability of the proposed IOEP and associated EAL scheme. This plan would replace the existing PDEP and associated Permanently Defueled EALs after all spent fuel has been transferred from the SFP to dry cask storage within the onsite ISFSI.

The proposed IOEP and associated EAL scheme are required to meet the following regulations, as exempted, by letter dated December 11, 2017 (Reference 4):

- 10 CFR 50.47(b)(1), as exempted, states, in part: "... each principal response organization has staff to respond and to augment its initial response on a continuous basis."
- 10 CFR 50.47(b)(2) states, in part: "... adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available ..."
- 10 CFR 50.47(b)(4), as exempted, states, in part: "A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee..."
- 10 CFR 50.47(b)(5), as exempted, states, in part: "Procedures have been established for notification, by the licensee, of State and local response organizations ..."
- 10 CFR Part 50, Appendix E, Section IV.A, as exempted, states, in part: "The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization..."

The associated guidance documents on which the NRC based its evaluation and acceptance of the proposed IOEP and associated EAL scheme are as follows:

- Revision 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (Reference 5), which provides a common reference and guidance source for nuclear facility operators to develop radiological emergency response plans.
- Office of Nuclear Security and Incident Response / Division of Preparedness and Response (NSIR/DPR) Interim Staff Guidance (ISG) – 2, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants" (Reference 6), which provides guidance for the review of permanently defueled emergency plans for power reactor sites undergoing decommissioning.
- Spent Fuel Storage and Transportation (SFST) SFST-ISG – 16, "Emergency Planning" (Reference 7), which provides emergency plan review guidance applicable to facilities licensed pursuant to the regulatory requirements found in 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.”

- Nuclear Energy Institute (NEI) document NEI 99-01, Revision 6, “Development of Emergency Action Levels for Non-Passive Reactors” (Reference 8), which was endorsed by the NRC in a letter dated March 28, 2013 (Reference 9), as generic (non-plant-specific) EAL scheme development guidance.

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee’s regulatory and technical analyses in support of its proposed emergency plan changes, as described in the application dated February 28, 2019, as supplemented by letter dated November 20, 2019. The technical evaluation is detailed below.

3.1 Background

By letter dated December 16, 2016 (Reference 10), as supplemented by letters dated February 10, 2017 (Reference 11), April 14, 2017 (Reference 12), and April 20, 2017 (Reference 13), OPPD requested exemptions for FCS from (1) certain planning standards in 10 CFR 50.47(b) regarding onsite and offsite radiological emergency plans for nuclear power reactors; (2) requirements in 10 CFR 50.47(c)(2) for the establishment of plume exposure pathway and ingestion pathway emergency planning zones for nuclear power reactors, and (3) certain requirements in 10 CFR Part 50, Appendix E, Section IV, regarding the content of emergency plans. By letter dated December 11, 2017, the NRC approved the requested exemptions

By letter dated December 12, 2017 (Reference 14), the NRC issued Amendment No. 295 to Renewed Facility Operating License No. DPR-40 approving the FCS PDEP and Permanently Defueled EAL scheme. The PDEP and EAL scheme were fully implemented on April 7, 2018.

3.2 Proposed Changes

In its application dated February 28, 2019, as supplemented by letter dated November 20, 2019, OPPD requested that the NRC review and approve a proposed IOEP, which included an ISFSI Only EAL scheme based on the applicable guidance in NEI 99-01, Revision 6. The proposed amendment replaces the existing PDEP and associated Permanently Defueled EAL scheme.

The proposed changes modify the scope of onsite emergency preparedness requirements to reflect the reduced potential radiological accidents with all spent fuel in dry cask storage within the onsite ISFSI. The off-normal events and accidents addressed in the IOEP are related to the dry cask storage of spent nuclear fuel at the ISFSI and include only off-normal, accident, natural phenomena, and hypothetical events and consequences affecting the FCS ISFSI.

The major changes that OPPD is requesting are: (1) elimination of SFP-related initiation conditions (ICs) and EAL thresholds from the EAL scheme; (2) revision of the FCS Emergency Response Organization (ERO) to reflect an emergency associated within the ISFSI; (3) identification of the ISFSI Shift Supervisor (ISS) as the position assuming the Emergency Director (ED) responsibilities upon declaration of an emergency classification, and (4) removal of notification to the State of Iowa following an emergency declaration.

Under the PDEP with spent fuel stored within the SFP, the most severe postulated beyond-design-basis accident involved a highly unlikely sequence of events that causes a heat-up of the spent fuel, postulated to occur without heat transfer, such that the zirconium alloy fuel cladding reaches ignition temperature. While highly improbable, the resultant zirconium alloy fire could potentially lead to the release of fission products to the atmosphere. However, after removal of the spent fuel from the SFP, the accident scenarios and analyses demonstrate that the age and configuration of spent fuel stored in dry cask storage precludes the possibility of such a zirconium alloy fire scenario. As such, after all the spent fuel is transferred to dry cask storage within the onsite ISFSI, the number and severity of potential radiological accidents is significantly less than when spent fuel was stored in the SFP. For these reasons, the potential radiological consequences of accidents possible at FCS after all spent fuel is transferred to the ISFSI are further reduced.

There continues to be no need for formal offsite radiological emergency preparedness (REP) plans under 44 CFR Part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness," at FCS because no design-basis accident or reasonably credible beyond-design-basis accident can result in radioactive releases that exceed the U.S. Environmental Protection Agency (EPA) Early Phase Protective Action Guides (PAGs) (Reference 15) beyond the exclusion area boundary.

3.3 Evaluation

The NRC staff reviewed the changes from the current FCS PDEP to the proposed IOEP and EAL scheme, including the licensee's evaluation of the changes, to verify that the proposed IOEP and EAL scheme continue to meet the standards contained in 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50, as exempted, for the long-term defueled conditions at FCS. The NRC staff also performed a review to ensure that the proposed IOEP would be consistent with the requirements of 10 CFR 72.32(a) for an ISFSI not located on the site of an operating nuclear power reactor. Although the requirements of 10 CFR 72.32(a) do not apply to a 10 CFR Part 50 licensee, such as FCS, the NRC examined these regulations to promote consistency in the emergency planning requirements between specifically licensed (Part 72) and generally licensed (Part 50) ISFSIs. These requirements, and their applicability to facilities licensed under 10 CFR Part 72, are further described in SFST-ISG-16.

3.3.1 *Elimination of SFP-Related Initiation Conditions and EALS*

After all fuel is removed from the SFP, there will no longer be any potential for the accidents previously described in the PDEP associated to SFP operation that would increase risk to the health and safety of the public. These accidents included events specifically related to the storage of the spent fuel in the SFP. OPPD provided that the off-normal events and accidents addressed in the IOEP are related to the dry cask storage of spent nuclear fuel within the onsite ISFSI and include only the off-normal, accident, natural phenomena, and hypothetical events and consequences presented in the Updated Final Safety Analysis Report, NUH-003, "Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel" (Reference 16), for the AREVA TN Americas. After the transfer of the spent fuel from the SFP to dry cask storage within the onsite ISFSI, the spent fuel storage and handling systems associated with the SFP will be removed from operation. Therefore, accident conditions associated with the SFP are no longer applicable.

The ICs and EALs associated with the emergency classification levels in the current PDEP are based on Appendix C, "Permanently Defueled Station ICs/EALs," to NEI 99-01, Revision 6, which addresses a nuclear power reactor that has permanently ceased operations and transferred spent fuel from the reactor vessel to the SFP (permanently defueled). After all spent fuel has been removed from the SFP and placed in dry cask storage within the ISFSI, the ICs and EALs in Appendix C to NEI 99-01, which are associated with the SFP at a decommissioning facility, are no longer required. Additionally, certain ICs and EALs, whose primary function is not associated with the SFP, are no longer required when administrative controls are established to limit source term accumulation and the offsite consequences of uncontrolled effluent releases.

Examples of administrative controls for radiological source term accumulation limits and methods to control the accidental dispersal of the radiological source are:

- Limits on radioactive materials collected on filter media and resins (dose rate limit);
- Limits on surface or fixed contamination on work areas that may create airborne radioactive material (activity limits), and
- Limits on dispersal mechanisms that may cause a fire (e.g., limits on combustible material loading, use of a fire watch to preclude fires, etc.) or placement of a berm around a radioactive liquid storage tank.

Other ICs proposed for deletion include those associated with the SFP mitigative strategies contained in certain FCS license conditions, as well as response procedures for potential or actual aircraft attacks. The NRC staff has previously maintained EALs for potential or actual aircraft threats for facilities transitioning into decommissioning with spent fuel stored in an SFP, as well as maintaining the mitigative strategies license conditions. These will be eliminated after spent fuel is removed from the SFP and is in dry cask storage within the onsite ISFSI.

The ICs listed in Table 1, below, are being deleted, either partially or in their entirety as indicated, from the EAL scheme for FCS, since they are either associated only with SFP operation or for which administrative controls to limit possible effluent releases have been established. The ICs and EALs being deleted include all ICs associated with the categories of abnormal radioactivity release and system malfunction, as these two categories apply only to SFP operation.

Table 1: Emergency Plan Initiating Conditions Being Deleted

ALERT	UNUSUAL EVENT
PD-RA1 Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mRem TEDE or 50 mRem thyroid CDE. ⁽¹⁾	PD-RU1 Release of gaseous or liquid radioactivity greater than 2 times the ODCM limits for 60 minutes or longer. ⁽¹⁾
PD-RA2 UNPLANNED rise in facility radiation levels that impedes facility access required to maintain spent fuel integrity. ⁽¹⁾	PD-RU2 UNPLANNED rise in facility radiation levels. ⁽¹⁾
	PD-HU2 Hazardous event affecting SAFETY SYSTEM equipment necessary for spent fuel cooling. ⁽¹⁾

ALERT	UNUSUAL EVENT
<p>PD-HA1 HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes. [HOSTILE ACTION is occurring or has occurred.] ⁽²⁾</p> <p>1. A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by security supervision. [A HOSTILE ACTION is occurring or has occurred as reported by the security force.]</p> <p>2. A validated notification from NRC of an aircraft attack threat within 30 minutes of the site.</p>	<p>PD-SU1 UNPLANNED spent fuel pool temperature rise. ⁽¹⁾</p> <p>PD-HU1 Confirmed SECURITY condition or threat. ⁽²⁾</p> <ol style="list-style-type: none"> 1. A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by [the security supervision force and impacting the ISFSI]. 2. Notification of a credible security threat directed at the site [ISFSI]. 3. A validated notification from the NRC providing information of an aircraft threat.
	<p>E-HU1: Damage to a loaded cask CONFINEMENT BOUNDARY. ⁽²⁾</p> <p>1. Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on contact [abnormal] radiation reading</p> <ul style="list-style-type: none"> • ≥ 1600 mrem/hr (gamma + neutron) at the front bird screen of the Horizontal Storage Module (HSM) [≥ 800 mrem/hr (gamma + neutron) at the front bird screen of the Horizontal Storage Module (HSM)] <p>OR</p> <ul style="list-style-type: none"> • ≥ 400 mRem/hr (gamma + neutron) on the outside HSM door [≥ 20 mRem/hr (gamma + neutron) on the outside HSM door] <p>OR</p> <ul style="list-style-type: none"> • ≥ 16 mRem/hr (gamma + neutron) on the End Shield Wall Exterior [≥ 10 mRem/hr (gamma + neutron) on the End Shield Wall Exterior] <p>NOTE: Radiation readings are taken at the locations prescribed by the Technical Specifications for the Standardized NUHOMS Horizontal Storage System (Amendment Number 15 to CoC 1004).</p>

⁽¹⁾ Indicates the IC and the associated EALs are being deleted in their entirety.

⁽²⁾ Indicates only the portion of the IC or EAL shown in strikethrough text is being deleted. Text included with brackets [] will be added in the proposed ISFSI EAL Scheme.

The existing ICs and EALs not listed in Table 1 above are being retained, since they remain appropriate to address an event related to an ISFSI only facility (i.e., no fuel stored in the SFP).

The ICs listed in Table 2 are to be retained.

Table 2: ISFSI Emergency Plan Initiating Conditions

UNUSUAL EVENT
SECURITY
PD-HU1 Confirmed SECURITY CONDITION, or threat, at the independent spent fuel storage installation (ISFSI).
Other Conditions
PD-HU3 Judgment
Independent Spent Fuel Storage Installation (ISFSI)
E-HU1 Damage to a loaded cask CONFINEMENT BOUNDARY.
ALERT
SECURITY
PD-HA1 HOSTILE ACTION is occurring or has occurred.
Other Conditions
PD-HA3 Judgment

The most severe beyond-design-basis accident postulated for FCS with spent fuel stored within the SFP involved a highly unlikely sequence of events that causes heat up of the spent fuel, postulated to occur without heat transfer, such that the zirconium alloy fuel cladding reaches ignition temperature. Because this limiting, beyond-design-basis scenario is no longer possible due to the transfer of spent fuel from the SFP to dry cask storage in the onsite ISFSI, OPPD's assessment focused on the following design-basis accidents associated with the performance of decommissioning activities with all irradiated fuel stored in the FCS ISFSI: (1) cask drop event (fuel related event); (2) radioactive material handling accident (non-fuel related event), and (3) accidents initiated by external events.

As discussed in the December 11, 2017 exemption from certain emergency planning requirements for FCS, an analysis of the potential radiological impact of a design-basis accident at FCS in a permanently defueled condition indicated that any releases beyond the exclusion area boundary were below the EPA Early Phase PAGs. The basis for these exemptions has not changed and remains in effect for the proposed emergency plan changes.

For design-basis accidents (1) and (2) cited in the paragraph above, the results of the assessment indicate that the projected radiological doses at the exclusion area boundary continue to be less than the EPA Early Phase PAGs. The effects of accidents initiated by external events, (3) cited above, such as fires, flood, wind (including tornadoes), earthquakes, lightning, and physical security breaches on the FCS ISFSI that could affect the confinement boundary of the ISFSI, remain unchanged from the effects that were considered under the PDEP. The NRC staff examined the assumptions used in the licensee's analyses and verified that inputs were more conservative than those used in the approved PDEP, and therefore, determined that the associated accident analyses are sufficient to conclude that any releases beyond the exclusion area boundary will be below EPA Early Phase PAGs.

Because of the very low risk of consequences to public health and safety resulting from the postulated accidents related to the FCS ISFSI, no potential emergencies continue to be

classified no higher than the Alert level in accordance with the requirements of Section IV.C.1 to Appendix E of 10 CFR Part 50, as exempted. Classification of emergencies at no higher than an Alert level also maintains consistency with the regulations in 10 CFR 72.32(a)(3), "Classification of accidents."

Based on the NRC staff's review of the proposed IOEP and associated EAL scheme, as described above, the NRC staff concludes that planning standard 10 CFR 50.47(b)(4), as exempted, pertaining to a standard emergency classification and action level scheme, is addressed in acceptable manner in the IOEP, considering the permanently shutdown and defueled status of the facility and the proposed transfer of all remaining spent fuel from the SFP to dry cask storage within the ISFSI by Year 2020.

3.3.2 *Emergency Response Organization Revision*

The existing PDEP provides for two (2) ERO augmented positions – a Technical Coordinator and a Radiation Protection Coordinator. The proposed IOEP would replace these positions with a Resource Manager and an individual trained in radiological monitoring and assessment. The Resource Manager will assist in assessing the event and obtaining needed resources, including public information interface. The Resource Manager will be in contact with the Emergency Director within two hours of declaration of an Unusual Event or an Alert classification level. The Resource Manager does not need to physically report to FCS to perform their responsibilities. In addition, OPPD proposes that, for a declared emergency involving radiological consequences, a minimum of one person trained in radiological monitoring and assessment will report to the FCS ISFSI within four hours of the emergency declaration.

In its evaluation of the proposed changes to the ERO, the NRC staff considered the accident analysis referenced in Section 3.3.1 above, related to the deletion of EALs, either partially or in their entirety, as indicated, as they relate to SFP operation. Specifically, the NRC staff considered the postulated accidents that could occur with all the spent fuel moved into dry cask storage within the onsite ISFSI, which pose a very low risk to public health and safety. The NRC staff notes that OPPD also continues to commit to maintain the appropriate level of augmented response to an emergency, to include an event involving radiological consequences.

In the Statement of Considerations for the Final Rule for Emergency Planning Licensing Requirements for Independent Spent Fuel Storage Facilities and Monitored Retrievable Storage Facilities (MRS) (60 FR 32430; June 22, 1995), the Commission stated, in part:

For there to be a significant environmental impact resulting from an accident involving the dry storage of spent nuclear fuel, a significant amount of the radioactive material contained within a cask must escape its packaging and enter the biosphere. There are two primary factors that protect the public health and safety from this event. The first is the design requirements for the cask that are imposed by regulation.

These general design criteria place an upper bound on the energy a cask can absorb before the fuel is damaged. No credible dynamic events have been identified that could impart such significant amounts of energy to a storage cask after that cask is placed at the ISFSI.

Additionally, there is a second factor which does not rely upon the cask itself but considers the age of the spent fuel and the lack of dispersal mechanisms. There exists no significant dispersal mechanism for the radioactive material contained within a storage cask.

Based on the design limitations, the majority of spent fuel is cooled greater than 5 years. At this age, spent fuel has a heat generation rate that is too low to cause significant particulate dispersal in the unlikely event of a cask confinement boundary failure.

Although the FCS spent fuel analysis has not been able to identify any design-basis accident that would result in a failure of the confinement barrier for the dry storage casks or the irradiated fuel itself, the IOEP nonetheless requires augmentation of one person trained in radiological monitoring and assessment, who will report to the station within four hours of the emergency declaration for an event involving radiological consequences.

The proposed IOEP also provides that additional personnel resources may be directed to report to FCS to provide additional support, as needed, to assess radiological conditions, support maintenance and repair activities, develop and implement corrective action plans, and assist with recovery actions. The augmentation personnel are available from FCS staff, OPPD, and from various contractors.

Based on the NRC staff's review of the FCS IOEP, as described above, the NRC staff concludes that planning standards 10 CFR 50.47(b)(1) and (b)(2), and the requirements of Section IV.A of Appendix E to 10 CFR Part 50, as exempted, pertaining to timely augmentation of response capabilities and coping with radiological emergencies, are addressed in an acceptable manner in the FCS IOEP, considering the permanently shutdown and defueled status of the facility, and the proposed transfer of all remaining spent fuel from the SFP to dry cask storage within the onsite ISFSI by Year 2020.

3.3.3 *Replacement of the "Shift Manager" title with the "ISFSI Shift Supervisor"*

In Section 6.1, "On-Shift Positions," of the IOEP, OPPD has reassigned the following Emergency Director responsibilities from the Shift Manager to the ISFSI Shift Supervisor:

- Notification of the emergency classification to the NRC and the State of Nebraska;
- Management of available station resources;
- Initiation of mitigative, corrective, and onsite protective actions;
- Decision to call for local law enforcement, fire/rescue, or ambulance assistance;
- Augmentation of the emergency staff, as deemed necessary;
- Coordination of security activities;
- Termination of the emergency condition when appropriate;
- Performance of initial radiological assessment;
- Maintaining a record of event activities, and
- Suspending security measures.

Section 19.1, "Emergency Response Personnel Training," of the IOEP provides the requirements for emergency preparedness training and identifies the level and the depth to which individuals are to be trained. The ISFSI Shift Supervisor/Emergency Directors and Resource Managers shall have training conducted on an annual basis such that proficiency is maintained on the topics listed below:

- EAL classification,
- Offsite notification procedures,
- ERO activation,
- Dose rate meter operation,
- Radioactive release assessment,
- Emergency exposure control,
- Protective actions for onsite personnel,
- ISFSI design basis accidents, and
- Review of applicable drill and exercise-identified deficiencies and human performance concerns.

The NRC staff's evaluation verified the retitled position of ISFSI Shift Supervisor is on-shift at the FCS site 24-hours a day / 7 days a week and serves as the senior management position during off-hours. This position assumes overall command and control of the event response as the Emergency Director and is responsible for monitoring conditions and approving all onsite activities. The IOEP clearly identifies non-delegable responsibilities, along with other designated tasks, for the ISFSI Shift Supervisor. The NRC staff considers this retitling activity to be an administrative change that will not impact the timing or performance of existing emergency response duties.

Based on the NRC staff's review of the IOEP, as described above, the NRC staff concludes that planning standard 10 CFR 50.47(b)(2), pertaining to the adequate staffing to provide initial facility accident response, is addressed in an acceptable manner in the IOEP, considering the permanently shutdown and defueled status of the facility, and the proposed transfer of all remaining spent fuel from the SFP to dry cask storage within the onsite ISFSI by Year 2020.

3.3.4 Removal of emergency notification to the State of Iowa following an emergency declaration

As part of its supplemental letter dated November 20, 2019, OPPD provided a letter from the Director, Iowa Department of Homeland Security and Emergency Management formally requesting to be removed from any planning activities or notifications for radiological emergencies associated with FCS and therefore requested to be excluded from the FCS IOEP when it is submitted to the NRC for approval. In its letter, the Director stated:

In 2018, OPPD submitted a request to the Nuclear Regulatory Commission (NRC) for approval of a partial site release which will remove all property located in the State of Iowa from the FCS license.

By letter dated April 10, 2019 (Reference 17), the NRC granted approval of a partial site release to OPPD for the FCS, Unit 1. This removed all property located in the State of Iowa from the FCS exclusion area, thereby supporting the need to notify the State of Iowa following the declaration of an emergency classification. As such, the NRC staff concludes that planning

standard 10 CFR 50.47(b)(5), pertaining to the notification of offsite response organizations, will continue to be met.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding, which was published in the *Federal Register* on May 7, 2019 (84 FR 19964). Accordingly, the amendment meets the eligibility criteria for categorical exclusions set forth in 10 CFR 51.22(c)(9) and 10 CFR 51.22(c)(10)(ii). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Nebraska State official was notified of the proposed issuance of the amendment on December 11, 2019. The State official had no comments.

6.0 CONCLUSION

Based on review of the proposed IOEP and associated EAL scheme, the NRC staff finds that the proposed changes would continue to meet the applicable planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50, as exempted. The NRC staff finds continued reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the FCS facility. In addition, the NRC staff concludes that the FCS IOEP will be consistent with the emergency planning requirements in 10 CFR Part 72 for an ISFSI not located on the site of an operating reactor. Therefore, the NRC staff concludes that the licensee's proposed IOEP and associated EAL scheme in its letter dated February 28, 2019, as supplemented by letter dated November 20, 2019, are acceptable.

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

7.0 REFERENCES

1. Letter from Omaha Public Power District to U.S. Nuclear Regulatory Commission, Docket No. 50-285, "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated November 13, 2016 (ADAMS Accession No. ML16319A254).

2. Letter from Omaha Public Power District to U.S. Nuclear Regulatory Commission, Docket No. 50-285, "License Amendment Request (LAR) 19-01: Independent Spent Fuel Storage Installation (ISFSI) Emergency Plan and Emergency Action Level Scheme," dated February 28, 2019 (ADAMS Accession No. ML19064A758).
3. Letter from Omaha Public Power District to U.S. Nuclear Regulatory Commission, Docket No. 50-285, "Response to Request for Additional Information, Fort Calhoun Station, Unit No. 1 - Request for Additional Information, OPPD Fort Calhoun License Amendment for ISFSI-only EP and EAL Scheme," dated November 20, 2019 (ADAMS Accession No. ML19325E256).
4. Letter from U.S. Nuclear Regulatory Commission to Omaha Public Power District, Docket No. 50-285, "Fort Calhoun Station, Unit No. 1, Exemptions from Certain Emergency Planning Requirements and Related Safety Evaluation," dated December 11, 2017 (ADAMS Accession No. ML17263B198).
5. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1, Rev.1, dated November 1980 (ADAMS Accession No. ML040420012).
6. NSIR/DRP-ISG-2, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants," dated May 11, 2015 (ADAMS Accession No. ML14106A057).
7. SFST-ISG-16, "Emergency Planning," dated June 14, 2000 (ADAMS Accession No. ML003724570).
8. NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated November 2012 (ADAMS Accession No. ML12326A805).
9. Letter from U.S. Nuclear Regulatory Commission to NEI "Technical Evaluation for the Endorsement of NEI 99-01, Revision 6," dated March 28, 2013 (ADAMS Accession No. ML12346A463).
10. Letter from Omaha Public Power District to U.S. Nuclear Regulatory Commission, Docket No. 50-285, "Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E, dated December 16, 2016 (ADAMS Accession No. ML16356A578).
11. Letter from Omaha Public Power District to U.S. Nuclear Regulatory Commission, Docket No. 50-285, "Supplemental Information Needed for Acceptance of Requested Licensing Action RE: Fort Calhoun Station Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E," dated February 10, 2017, (ADAMS Accession No. ML17041A443).
12. Letter from Omaha Public Power District to U.S. Nuclear Regulatory Commission, Docket No. 50-285, "Response to Request for Additional Information, Fort Calhoun Station, Unit No.1 -Final Request for Additional Information Concerning Exemption from the Requirements of 10 CFR 50.47 and Appendix E," dated April 14, 2017 (ADAMS Accession No. ML17104A191).

13. Letter from Omaha Public Power District to U.S. Nuclear Regulatory Commission, Docket No. 50-285, "Response to Request for Additional Information, Fort Calhoun Station, Unit No. 1 - Request for Additional Information RE: Defueled Emergency Plan Exemption Request," dated April 20, 2017(ADAMS Accession No. ML17111A857).
14. Letter from U.S. Nuclear Regulatory Commission to Omaha Public Power District, Docket No. 50-285, "Fort Calhoun Station, Unit 1- Issuance of Amendment RE: Revise Emergency Plan to the Permanently Defueled Emergency Plan and Permanently Defueled Emergency Action Level Scheme," dated December 12, 2017 (ADAMS Accession No. ML17276B286).
15. U.S. Environmental Protection Agency PAG Manual, "Protective Action Guides and Planning Guidance for Radiological Incidents," dated January 2017, (ADAMS Accession No. ML17044A073).
16. NUH-003, "Updated Final Safety Analysis Report, Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel," Revision 17, dated March 26, 2018 (ADAMS Accession No. ML18079A005).
17. Letter from U.S. Nuclear Regulatory Commission to Omaha Public Power District, Docket No. 50-285, "Fort Calhoun Station, Unit No. 1 – Approval of Partial Site Release Phase 1 and Phase 2," dated April 10, 2018 (ADAMS Accession No. ML19074A301).

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