



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

April 10, 2019

Ms. Mary J. Fisher
Vice President – Energy Production
and Nuclear Decommissioning
Omaha Public Power District
444 South 16th Street Mall
Omaha, NE 68102-2247

SUBJECT: FORT CALHOUN STATION, UNIT 1 – APPROVAL OF PARTIAL SITE RELEASE
PHASE 1 AND PHASE 2 (EPID# L-2018-DSR-0000)

Dear Ms. Fisher:

By letters to the U.S. Nuclear Regulatory Commission (NRC) dated June 29, 2018 and November 12, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML18215A187 and ML18316A036, respectively), Omaha Public Power District (OPPD or the licensee) submitted requests to the NRC for approval of a partial site release at the Fort Calhoun Station, Unit 1 (FCS). The proposed action would remove and release portions of the site that are licensee owned, or otherwise controlled, and have been classified as radiologically non-impacted, from FCS's License No. DPR-40, which was issued pursuant to Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the Code of *Federal Regulations* (10 CFR). The proposed action would release approximately 120 of the 660 acres that currently comprise the owner-controlled area (OCA) of the FCS site (referred to in this document as the "northwest property") and 475 acres of land controlled by easements that formed part of the exclusion area for plant during operations (referred to in this document as the "north and east easement area").

Specifically, Section 50.83, "Release of part of a power reactor facility or site for unrestricted use," of 10 CFR requires written approval from the NRC prior to release for unrestricted use of any part of a site at a nuclear power plant before receiving approval of a license termination plan. Under the provisions of 10 CFR 50.83, the NRC is approving the request. For the release of non-impacted areas under the provisions of 10 CFR 50.83, a license amendment is not required.

The NRC staff reviewed OPPD's request documentation to determine if all of the requirements of 10 CFR 50.83 were addressed. The staff's analysis appears below.

§ 50.83(a) *Prior written NRC approval is required to release part of a facility or site for unrestricted use at any time before receiving approval of a license termination plan. Section 50.75 specifies recordkeeping requirements associated with partial release. Nuclear power reactor licensees seeking NRC approval shall--*

(1) Evaluate the effect of releasing the property to ensure that--

(i) The dose to individual members of the public does not exceed the limits and standards of 10 CFR Part 20, Subpart D;

The licensee's evaluation shows that the dose to individual members of the public does not exceed the limits and standards of 10 CFR Part 20, Subpart D, because OPPD controls and monitors effluents to ensure radioactivity released to the environment is maintained As Low As Reasonably Achievable (ALARA) and does not exceed federal release limit criteria. Effluent controls include operation of radiation monitoring systems as well as an offsite environmental analysis program. The release of the northwest property and the north and east easement area does not change any controls used to comply with dose limits for individual members of the public. A review of the FCS Annual Effluent Reports (latest report at ADAMS Accession No. ML18106A037) show that the readings for the doses to members of the public from site operations are well below the NRC dose limits.

The NRC verified that the areas to be released have not been radiologically impacted by licensed site activities, as described in the report entitled: "Confirmatory Survey Summary and Results for the Non-Impacted Land Areas Associated with the Fort Calhoun Nuclear Generating Station Blair, Nebraska" that was prepared for the NRC by the Oak Ridge Institute for Science and Education (ORISE), dated February 27, 2019, (ADAMS Accession No. ML19065A256). The ORISE confirmatory survey, performed November 27-29, 2018, included surface gamma scanning and collection of randomly selected volumetric soil samples. No elevated direct radiation was identified during surface gamma scanning. Radionuclides that were identified in soil samples were attributable to natural sources and not site operations. ORISE did not identify anomalies that would prevent the classification subject areas as non-impacted.

(ii) There is no reduction in the effectiveness of emergency planning or physical security;

The licensee's Emergency Planning Department reviewed the release under the requirements of 10 CFR 50.54(q) to ensure that changes to control of the land areas requested to be released do not reduce the effectiveness of the Emergency Plan and that the plan continues to meet the Emergency Planning Preparedness requirements of appendix E of 10 CFR Part 50 and the emergency planning standards of § 50.47(b). Likewise, the Security Plan was reviewed under the 10 CFR 50.54(p) process for changes to ensure that they do not decrease the safeguards effectiveness of the plan. The evaluations concluded the release of the subject property has no adverse effect on either plan. Actions are assigned to Emergency Planning Department to incorporate any necessary changes in the exclusion area boundary into the Emergency Plan upon approval.

(iii) Effluent releases remain within license conditions;

Effluent releases remain within license conditions because the FCS programs to monitor and measure effluent releases within license conditions will remain in effect and the release of the subject properties does not have an impact on these programs. Effluent monitoring conditions will remain in effect in accordance with license conditions. Environmental dose monitoring locations will not change as a result of this proposed land release. Therefore, the effluent releases from FCS will remain in accordance with license conditions.

(iv) The environmental monitoring program and offsite dose calculation manual are revised to account for the changes;

The licensee states that the environmental monitoring program and offsite dose calculation manual (ODCM) are revised to account for the changes to the site boundary due to the release of the subject properties. Changes to the site boundary or a reduced land area have the potential to affect concentrations in offsite dose pathways. The FCS ODCM has been evaluated and updated to address reduced distance to the affected site boundary or reduced land area and potential land use in conjunction with implementation of the partial site release requests. Occupancy factors remain unchanged with the subject land release.

There are no expected changes to the external appearance of the plant; changes to waste processing; changes in land or water usage; changes in water or air quality; changes in radiological impact; changes to historical or archeological areas. The current land use of the subject properties is farming of row crops. This use can continue after the release approval.

(v) The siting criteria of 10 CFR Part 100 continue to be met;

The purpose of 10 CFR Part 100 is to establish approval requirements for proposed sites for stationary power and testing reactors subject to 10 CFR Part 50. Section 50.83(a)(1)(v) requires licensees to evaluate the effect of releasing property to ensure continued compliance with the Part 100 siting criteria that were used to license the plant. As described in 10 CFR 100.1(c), the primary siting factors that determine public health and safety are those that consider the reactor design, construction and operation. Siting factors and criteria are important in assuring that radiological doses from normal operation and postulated accidents will be acceptably low, that natural phenomena and potential man-made hazards will be appropriately accounted for in the design of the plant, that site characteristics are such that adequate security measures to protect the plant can be developed, and that physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans are identified.

The Commission explains in 10 CFR 100.10 that the factors considered in the evaluation of sites include those relating both to the proposed reactor design and the characteristics peculiar to the site such that their design, construction and operation provide an extremely low probability for accidents that could result in release of significant quantities of radioactive fission products. In addition, the site location and the engineered features included as safeguards against the hazardous consequences of an accident, should one occur, should insure a low risk of public exposure. The siting factors in § 100.10, "Factors to be considered when evaluating sites," and § 100.11, "Determination of exclusion area, low population zone, and population center distance," are considered in determining the acceptability of a site for a power or test reactor.

The factors in § 100.10 include: the characteristics of reactor design and proposed operation related to operational power levels and nature of contained radioactive materials; the use of engineering standards in the reactor design; features having significant bearing on the probability or consequences of accidental release of radioactive materials; and the safety features and barriers that must be breached as a result of an accident before a release of radioactive material to the environment can occur.

The licensee stated that the siting criteria for 10 CFR Part 100 continue to be met because release of the subject properties has been reviewed with respect to the siting criteria in 10 CFR Part 100 and it has been determined that the requirements are either not impacted or are not applicable. The radiological Exclusion Area Boundary at FCS is being updated to approximately 464 meters per engineering calculations. The dose at that distance from the Auxiliary Building effluent stack is well below the 10 CFR Part 100 criteria of 25 rem in two hours or 300 rem to the thyroid in that same time period. The member of the public that is analyzed to receive the highest dose is postulated to receive 1 mrem total effective dose equivalent from an accident or event analysis. The licensee states that FCS will continue to maintain the ability to remove members of the public from the exclusion area in the case of radiological emergency.

(vi) All other applicable statutory and regulatory requirements continue to be met.

The licensee states that all other applicable statutory and regulatory requirements continue to be met, that there are no significant changes to the FCS policies and procedures, and that statutory and regulatory requirements continued to be met as a result of this early release of the subject properties.

The staff reviewed the requirements of the conditions, technical specifications and commitments in the license and the applicable regulations in 10 CFR Parts 20, 30, and 50 for any potential change in the ability of the licensee to meet all the other applicable statutory and regulatory requirements upon release of the requested parts of the site from the license. The staff's review determined that those requirements will continue to be met because the licensee's ability to meet those requirements is unchanged by the approval of the release of this non-impacted area.

(2) Perform a historical site assessment of the part of the facility or site to be released;

A Historical Site Assessment (HSA) investigation is designed to obtain sufficient information to provide initial classification of site land areas and structures as impacted or non-impacted. Impacted areas have a potential for contamination (based on historical data) or contain known contamination (based on preliminary radiological surveillance). The NRC's NUREG-1575, "Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM)" (ADAMS Accession No. ML082470583), section 3.0, defines non-impacted areas as those areas where there is no reasonable possibility of residual contamination.

According to the licensee's submittals requesting partial site release, an HSA for all areas outside of operational structures was performed after FCS was permanently taken offline for decommissioning. Historical information, including any records important to the safe and effective decommissioning of the facility (10 CFR 50.75(g) files), employee interviews, radiological incident reports, pre-operational survey data, spill reports, special surveys, operational survey records, and Annual Radiological Operating Reports (which include the sampling of air, groundwater, milk, fish, and surface vegetation) were compiled and reviewed. The HSA focused on historical events and routine operational processes that could have resulted in contamination of onsite buildings outside of the Protected Area (PA); surface and subsurface soils within the PA; as well as open land areas, subsurface soils outside of the PA, but within the OCA. The information compiled by the HSA was used to establish initial area survey unit classification of the northwest property. The scope of the HSA included potential contamination from radioactive materials, hazardous materials, and environmental contaminants.

Based upon the information compiled in the HSA, the three open land survey units of the northwest property received an initial classification as "non-impacted." These outlying areas of the OCA have no impact from site operations based upon the location(s) of licensed operation, site use, topography, site discharge locations and other site physical characteristics. These areas are not required to be surveyed for demonstrating compliance beyond any characterization surveys performed to provide a basis for the classification, which the NRC has determined is adequately justified per the requirements in § 50.83(c)(2). The 120-acre northwest property has limited access for personnel or vehicle transit due to controlled access and use of the parcel for agricultural purposes.

As the HSA was focused on the OCA and the north and east easement area is outside of the OCA, the licensee performed an Environmental Site Assessment. This assessment included a review of records, historical disposition, and discussion with the land owners. The purpose of the review was to determine any environmental impacts due to FCS's operations on the subject land. FCS's connection to the land has always been that of an easement. No operational activities were ever performed on the subject land. Therefore, the Environmental Site Assessment determined there were no adverse environmental impacts to the subject property due to FCS operations.

Based on the results of the HSA, which included a review of the operating history of the facility and any historical incidents, and the Environmental Site Assessment, as well as subsequent characterization surveys, the subject open land areas in the northwest property of the OCA and the north and east easement area were deemed not impacted by licensed activities or materials. This was confirmed by NRC in the report "Confirmatory Survey Summary and Results for the Non-Impacted Land Areas Associated with the Fort Calhoun Nuclear Generating Station Blair, Nebraska" that was prepared for the NRC by the Oak Ridge Institute for Science and Education (ORISE), dated February 27, 2019, (ADAMS Accession No. ML19065A256). Therefore, it was determined that the non-impacted classification for the subject properties is appropriate.

(3) Perform surveys adequate to demonstrate compliance with the radiological criteria for unrestricted use specified in 10 CFR 20.1402 for impacted areas.

This requirement is not applicable because the area is being released as a non-impacted area.

§ 50.83(b) For release of non-impacted areas, the licensee may submit a written request for NRC approval of the release if a license amendment is not otherwise required. The request submittal must include--

(1) The results of the evaluations performed in accordance with paragraphs (a)(1) and (a)(2) of this section;

The results of the evaluations performed by the licensee are described above.

(2) A description of the part of the facility or site to be released;

OPPD requested the release of the two land areas by letters dated June 29, 2018 and November 12, 2018. The properties that are subject to these release requests are an approximately 120-acre parcel of land, owned by the licensee, that is on the northwest portion (the northwest property) of the OCA, and an approximately 475-acre area to the north and east of the owner-controlled property (the "north and east easement area") that is not owned by the

licensee but are under easements with the licensee to prevent occupation of the property as part of the exclusion zone of the plant while it was still operating.

The entire licensee-controlled site is approximately 660 acres; 565 acres of this area is on the alluvial flood plain of the Missouri River, and the remainder is part of the bluff system on the southwest side of the river. The closest residence is 0.6 miles (~965 meters) from the center of FCS's containment building.

Maps of the northwest property are included in the licensee's Phase 1 partial site release request submittal dated June 29, 2018. The 120-acre parcel of land that is subject to this request was sub-divided into three survey units, which the licensee has characterized as non-impacted. The northwest property is uninhabited, undeveloped land used for farming that, according to the licensee, has not been negatively impacted by FCS operations or subsequent decommissioning activities.

Maps of the north and east easement area are included in the licensee's Phase 2 partial site release request submittal dated November 12, 2018. The north and east easement area was an exclusion area of 475 acres north and east of the OCA primarily on the opposite bank of the Missouri River directly opposite the plant buildings. This additional exclusion area is provided by means of perpetual easements, which allows OPPD to restrict or prohibit access should evacuation be necessary. More specifically on October 28, 1969, and on October 24, 1973, the owners of property primarily located across the Missouri River from OPPD's Fort Calhoun facility executed easements in perpetuity to OPPD. The north and east easement area is a parcel of land that is uninhabited and undeveloped land that has been determined by the licensee to not have been negatively impacted by FCS operations or subsequent decommissioning activities. It contains two open land survey units.

Non-impacted areas have no reasonable potential for residual radiological contamination because historical information indicates there was no known impact from site operations. The non-impacted areas include the outlying open land areas of the site, as well as contiguous areas and facilities that have not been impacted by site operations based upon the location(s) of licensed operations, site use, topography, site discharge locations, and other site physical characteristics.

(3) The schedule for release of the property;

In the submittal for release of the northwest property, dated June 29, 2018, the licensee stated that they intend to begin undertaking activities associated with the release of the subject property from the FCS Part 50 license in April 2019. Therefore, OPPD requested that the NRC approve the acceptability of the release of the subject property from Part 50 License by March 29, 2019.

In the submittal for release of the north and east easement areas dated November 12, 2018, the licensee requested NRC approval of the acceptability of the release of the property from the FCS Part 50 License by May 31, 2019.

(4) The results of the evaluations performed in accordance with § 50.59;

For non-impacted areas, 10 CFR 50.83(b)(4) requires that the licensee submit the results of the evaluation performed in accordance with 10 CFR 50.59, the criteria for evaluating changes, tests, and experiments. The licensee's assessment of the release of the northwest property

indicates that the release of approximately 120 acres of non-impacted land does not involve any property that is actively being used by the plant for routine or decommissioning operations or that is needed for the site's emergency plan.

The 10 CFR 50.59 reviews for both the northwest property and the north and east easement area assessed the impact of the change in the site boundary on offsite dose calculation and effluent releases and concluded that the change:

- Does not adversely affect any design function as described in the FCS Defueled Safety Analysis Report (DSAR);
- Does not adversely affect how a design function as described in the DSAR is performed or controlled;
- Does not revise or replace an evaluation method used to establish design basis of safety analysis, and;
- Does not involve a test or experiment not described in the DSAR.

The NRC staff reviewed this assessment and agrees that the areas to be released are not used to support the licensing basis of FCS.

(5) A discussion that provides the reasons for concluding that the environmental impacts associated with the licensee's proposed release of the property will be bounded by appropriate previously issued environmental impact statements.

Under 10 CFR 50.83(b)(5), a request for NRC approval of a release of non-impacted areas must include the reasons for concluding that the environmental impacts associated with the proposed release of property will be bounded by appropriate previously issued Environmental Impact Statements.

OPPD evaluated the environmental impacts associated with the proposed release of the subject land areas and considered those impacts in light of the appropriate previously issued Environmental Impact Statements for the site. The evaluation did not identify any significant new environmental impacts or significant changes from the environmental impacts previously assessed by the NRC. In particular, the evaluation found that:

- The land transfer will have no more than a negligible increase in offsite dose consequences and no change in effluent releases.
- The OPPD radiological monitoring program will account for the revised site area boundary, and no increases in effects are anticipated.

Accordingly, OPPD concluded that the environmental impacts associated with the proposed release of the subject property are bounded by the NRC's previous reviews of the FCS facility.

The NRC's review of the partial site release request did not identify any environmental concerns associated with the release of the subject properties and agrees that the environmental impacts associated with the plant will not change as a result of the release of these properties. Therefore, the environmental impacts associated with the proposed release of the property are bounded by the appropriate previously issued environmental impact statements (i.e., NUREG-1437, Supplement 12, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants re: Fort Calhoun Station, Unit 1, Final Report." (ADAMS Accession No. ML032230075) and NUREG-0586, Supplement 1, "Generic Environmental Impact

Statement on Decommissioning of Nuclear Facilities,” November 2002, Volumes 1 and 2 ADAMS Accession Nos. ML023470327 and ML023500288, respectively) (Decommissioning GEIS). Based on the above, the NRC determined that preparation of an Environmental Assessment was not required.

§ 50.83(c) After receiving an approval request from the licensee for the release of a non-impacted area, the NRC shall--

(1) Determine whether the licensee has adequately evaluated the effect of releasing the property as required by paragraph (a)(1) of this section;

That determination is being made in this approval evaluation.

(2) Determine whether the licensee's classification of any release areas as non-impacted is adequately justified;

The NRC reviewed the licensee's submittal and performed independent surveys to verify the licensee's conclusions about the classification of the proposed release areas as non-impacted. The NRC verified the proposed release areas as non-impacted during the site survey of November 27-29, 2018.

(3) Upon determining that the licensee's submittal is adequate, inform the licensee in writing that the release is approved.

This letter satisfies this requirement.

§ 50.83(f) The NRC shall notice receipt of the release approval request or license amendment application and make the approval request or license amendment application available for public comment. Before acting on an approval request or license amendment application submitted in accordance with this section, the NRC shall conduct a public meeting in the vicinity of the licensee's facility for the purpose of obtaining public comments on the proposed release of part of the facility or site. The NRC shall publish a document in the Federal Register and in a forum, such as local newspapers, which is readily accessible to individuals in the vicinity of the site, announcing the date, time, and location of the meeting, along with a brief description of the purpose of the meeting.

A public meeting to obtain comments on the release approval request was announced on the NRC public meeting Website on November 15, 2018 (ADAMS Accession No. ML18319A273). A notice of the release approval request, the public meeting, and a request for comment was also published in the Omaha World Herald, Omaha, NE on November 21, 2019, the Washington County Enterprise-Leader, Blair, NE on November 23, 2019, and the Missouri Valley Times News, Missouri Valley, IA on November 28, 2019. The NRC staff published a notice of the receipt of the release approval request, and request for comment, in the *Federal Register* on November 26, 2018 (83 *FR* 60508). The NRC staff conducted the public meeting in Omaha, NE on November 28, 2018.

A summary of the meeting is available in ADAMS at Accession No. ML19071A030. The OPPD and NRC meeting slides are in ADAMS at Accession Nos. ML19070A246 and ML19070A307 respectively. The meeting transcript is in ADAMS at Accession No. ML19003A117.

No comments were made on the Federal Rulemaking Website, by mail, or by e-mail. All questions asked at the meeting were answered in the meeting and the questions and answers are summarized in the meeting summary.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

If you have any questions regarding this matter, please contact me by telephone at 301-415-6634, or e-mail at Jack.Parrott@nrc.gov.

Sincerely,

/RA/

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Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery
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Office of Nuclear Material Safety
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Docket No.: 50-285, 72-054

License No. DPR-40

cc: ListServ

SUBJECT: FORT CALHOUN STATION, UNIT 1 – APPROVAL OF PARTIAL SITE RELEASE
PHASE 1 AND PHASE 2 (EPID# L-2018-DSR-0000) **DATE: April 10, 2019**

DISTRIBUTION: J. Katanic, RIV

ADAMS Accession Number: ML19074A301

***via e-mail**

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