



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR MATERIAL

SAFETY AND SAFEGUARDS

RELATED TO TRANSFER OF LICENSED AUTHORITY FROM DUKE ENERGY FLORIDA,

LLC TO ADP CR3, LLC FOR FACILITY OPERATING LICENSE NO. DPR-72 AND ITS

GENERALLY LICENSED INDEPENDENT SPENT FUEL STORAGE INSTALLATION

AND

TRANSFER OF OWNERSHIP FROM DUKE ENERGY FLORIDA, LLC TO ADP SF1, LLC FOR

THE GENERALLY LICENSED INDEPENDENT SPENT FUEL STORAGE INSTALLATION AND

THE STORED MATERIAL

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT

DOCKET NOS. 50-302 AND 72-1035

1.0 INTRODUCTION

By application dated June 14, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML19170A194 and ML19170A195), including proprietary financial information provided as Enclosure 1P, "Decommissioning Services Agreement," and Enclosure 2P, "Form of Support Agreements," as supplemented by letters dated January 17, 2020 (ADAMS Accession No. ML20017A216), and March 5, 2020 (ADAMS Accession No. ML20065K737), Duke Energy Florida, LLC (DEF), on behalf of itself and ADP CR3, LLC (ADP CR3) (collectively, the Applicants), requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) consent to the transfer to ADP CR3 of DEF's licensed authority under Facility Operating License No. DPR-72 for the Crystal River Unit 3 Nuclear Generating Plant (CR-3) and the general license for the CR-3 Independent Spent Fuel Storage Installation (ISFSI) (collectively, the licenses) to possess, maintain, and decommission CR-3 and its ISFSI (collectively, the CR-3 facility). Specifically, this request was submitted to the NRC for approval pursuant to Section 184, "Inalienability of Licenses," of the Atomic Energy Act of 1954, as amended (AEA), and Sections 50.80, "Transfer of licenses," and 72.50, "Transfer of license," of Title 10 of the *Code of Federal Regulations* (10 CFR). The Applicants also requested that the NRC approve a conforming amendment to the CR-3 license to reflect the proposed transfer pursuant to 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit."

Upon approval and consummation of the proposed transfer, ADP CR3 would assume control of, and managerial responsibility for, all licensed activities, including decommissioning of the CR-3 facility and its associated buildings and structures. ADP CR3 would be licensed to possess, maintain, and decommission the CR-3 facility. Following the proposed transfer, DEF would continue to own the CR-3 facility, as well as its associated assets and real estate (including its nuclear decommissioning trust (NDT)), except for the ISFSI, the spent nuclear fuel, the high-level radioactive waste, the greater than Class C (GTCC) waste, and the associated storage canisters, which would be owned, but not possessed, by ADP SF1, LLC (ADP SF1), an affiliate of ADP CR3. In addition to maintaining the existing NDT, DEF would also be responsible for directing the trustee of the NDT to disburse funds to pay for the costs of decommissioning as work is completed. The Applicants have also agreed that ADP SF1 would enter into a Purchase and Sale Agreement with DEF, pursuant to which ADP SF1 would acquire the ISFSI, its associated equipment, and title to the spent nuclear fuel, the high-level radioactive waste, and the GTCC waste at the CR-3 facility. DEF would also assign to ADP SF1 its Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (Standard Contract) with the U.S. Department of Energy (DOE). ADP SF1 would own, but not possess, the spent nuclear fuel and waste pursuant to the general license, while ADP CR3 would possess the spent nuclear fuel and waste under the licenses. ADP SF1 would also enter into an operating agreement with ADP CR3, under which ADP SF1 would pay ADP CR3 for all costs of operating, maintaining, and decommissioning the ISFSI, and for ultimately removing all material owned by ADP SF1 from the CR-3 site.

Notice of NRC consideration of the application was published in the *Federal Register* (FR) on October 11, 2019 (84 FR 54932) and included an opportunity to comment, request a hearing, and petition for leave to intervene. The supplemental letters dated January 17, 2020, and March 5, 2020, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's no significant hazards consideration determination.

2.0 BACKGROUND

CR-3 was a single unit pressurized water reactor (PWR) electric generating facility with a rated thermal power of 2,609 megawatts thermal. The facility was part of the larger Crystal River Energy Complex, located on the Gulf of Mexico in Citrus County, Florida, which consisted of the PWR, other associated plant equipment, and related site facilities, including the generally licensed CR-3 ISFSI. The operating license for CR-3 was issued on January 28, 1977, and commercial operation commenced on March 13, 1977.

By letter dated February 20, 2013 (ADAMS Accession No. ML13056A005), DEF notified the NRC that CR-3 had been permanently shutdown and that all fuel had been permanently removed from the reactor vessel.

By letter dated December 2, 2013, DEF submitted to the NRC the Post-Shutdown Decommissioning Activities Report (PSDAR) for CR-3, including a Site-Specific Decommissioning Cost Estimate (DCE) (ADAMS Accession Nos. ML13340A009 and ML13343A178, respectively). The PSDAR and DCE were submitted in accordance with the requirements of 10 CFR 50.82, "Termination of license," paragraph (a)(4)(i). By letter dated January 15, 2018, DEF certified to the NRC that all of the CR-3 spent fuel had been removed from the spent fuel pool and transferred to the CR-3 ISFSI (ADAMS Accession No. ML18015A006). As described in the PSDAR, DEF selected the SAFSTOR method of

decommissioning CR-3, with plans to complete radiological decommissioning by 2073 and to restore the site by 2074.

License Transfer Application

According to the application, the purpose of the proposed license transfer is to permit the accelerated radiological decommissioning of the non-ISFSI portions of the CR-3 site. ADP CR3 would assume control of, and managerial responsibility for, all licensed activities, including decommissioning of the CR-3 facility (i.e., CR-3 and the CR-3 ISFSI) and its associated buildings and structures. ADP CR3 would be licensed to possess, maintain, and decommission the CR-3 facility.

Under the terms of the proposed transaction, ADP CR3 would begin decommissioning activities promptly after the consummation of the transaction and would plan to complete radiological decommissioning and restoration of the non-ISFSI portions of the CR-3 site by 2027. According to the application, ADP CR3 would draw on the experience of individuals from its parent companies, NorthStar Group Services, Inc. (NorthStar) and Orano Decommissioning Holdings, LLC (Orano), as well as individuals from an affiliate of NorthStar, Waste Control Specialists, LLC (WCS). In addition, ADP CR3 would contract with WCS to take advantage of WCS's waste transportation and disposal experience and knowledge of best practices. WCS is a leader in low-level radioactive waste management, packaging, transportation, and disposal. It operates radioactive and hazardous waste disposal facilities in Texas, and has experience with on-site waste processing, management, packaging, and loading.

NorthStar is a large demolition and asbestos abatement company, and has extensive world-wide experience conducting environmental remediation activities and the decommissioning of large-scale industrial and commercial complexes. NorthStar also has radiological decommissioning experience through involvement with the decommissioning of four research reactors at the Universities of Buffalo, Arizona, Illinois, and Washington, which were licensed by the NRC. In addition, according to the license transfer application, NorthStar has been involved with decommissioning at the DOE Hanford and Savannah River sites and with the deconstruction of nuclear reactor laboratory facilities at several universities and has been awarded a contract to support the decommissioning of ten reactor sites in the United Kingdom. In October 2018, the NRC issued an Order approving the transfer of the Vermont Yankee Nuclear Power Station operating license to NorthStar (ADAMS Accession No. ML18248A096). As part of the review in support of the transfer, NorthStar was confirmed to meet the regulatory, legal, technical, and financial requirements necessary to qualify it as an NRC licensee (ADAMS Accession No. ML18242A639).

Decommissioning Services Agreement and Purchase and Sale Agreement

According to the license transfer application, ADP CR3 proposes to decommission the CR-3 facility pursuant to the terms of a Decommissioning Services Agreement (DSA) between DEF and ADP CR3. In addition, the Applicants have also agreed that ADP SF1 would enter into a Purchase and Sale Agreement (PSA) with DEF to acquire the ISFSI, its associated equipment, and title to the spent nuclear fuel, the high-level radioactive waste, and the GTCC waste at the CR-3 facility.

Copies of the DSA and PSA are provided as proprietary Enclosures 1P and 2P, respectively, to the June 14, 2019, application. Enclosures 1P and 2P contain sensitive unclassified non-safeguards information (proprietary commercial and financial information) that is being withheld

from public disclosure pursuant to 10 CFR 2.390, "Public inspections, exemptions, requests for withholding." Redacted, non-proprietary versions of these documents are provided in Enclosures 1 and 6 to the application.

Revised PSDAR

By letter dated June 26, 2019, in support of the license transfer application, ADP CR3 submitted to the NRC a revised PSDAR for CR-3 (ADAMS Accession No. ML19177A080). By letter dated December 26, 2019, ADP CR3 submitted supplemental information in support of the review of the revised PSDAR (ADAMS Accession No. ML20006E788). The revised PSDAR, as supplemented, updates the information previously described in the original DEF 2013 PSDAR, based on and contingent upon the NRC's approval and the consummation of the license transfer transaction. The revised PSDAR supplements the license transfer application.

3.0 REGULATORY EVALUATION

The proposed transaction described in the license transfer application involves the transfer to ADP CR3 of DEF's licensed authority to possess, maintain, and decommission the CR-3 facility and the transfer to ADP SF1 of DEF's ownership of the generally licensed independent spent fuel storage installation and the stored material and requires prior NRC approval. For such a transaction, the NRC must find that the proposed licensed operator is qualified and that the transaction is otherwise consistent with applicable provisions of law, NRC regulations, and orders issued by the NRC.

The request for approval of the proposed transaction as described above, and as discussed in this safety evaluation (SE), is made pursuant to 10 CFR 50.80(a), which states:

No license for a production or utilization facility (including, but not limited to, permits under this part and part 52 of this chapter, and licenses under parts 50 and 52 of this chapter), or any right thereunder, shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission gives its consent in writing.

In addition, the regulations in 10 CFR 50.80(b) and (c) apply. Section 50.80(b) of 10 CFR states that an application for transfer of a license shall include as much of the information described in 10 CFR 50.33, "Contents of applications; general information," and 10 CFR 50.34, "Contents of applications; technical information," with respect to the identity and technical and financial qualifications of the proposed transferee as would be required by those sections if the application were for an initial license.

Section 50.80(c) of 10 CFR states, in part:

...the Commission will approve an application for the transfer of a license, if the Commission determines: (1) That the proposed transferee is qualified to be the holder of the license; and (2) That transfer of the license is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

In 10 CFR 50.33(a) through (d), the NRC requires applicants to provide information including the name of the applicant, address of the applicant, description of the corporate structure of the

applicant, citizenship of the applicant, and foreign ownership, control, or domination of the applicant, as applicable

In addition, 10 CFR 50.33(f) states, in part:

Except for an electric utility applicant for a license to operate a utilization facility of the type described in § 50.21(b) or § 50.22, [each application shall state] information sufficient to demonstrate to the Commission the financial qualification of the applicant to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought.

Section 50.2, "Definitions," of 10 CFR states, in part, that an electric utility means:

[A]ny entity that generates or distributes electricity and which recovers the cost of this electricity, either directly or indirectly, through rates established by the entity itself or by a separate regulatory authority.

The NRC staff applies the guidance in NUREG-1577, Revision 1, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," dated February 1999 (ADAMS Accession No. ML013330264), to evaluate the financial qualifications of applicants to carry out the activities for which the permit or license is sought.

In addition, 10 CFR 50.33(k)(1) requires that applicants provide the information described in 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," indicating how reasonable assurance will be provided that funds will be available to decommission the facility.

The regulation under 10 CFR 50.75 specifies how a licensee will provide reasonable assurance that funds will be available for the decommissioning process. Specifically, 10 CFR 50.75(b) requires that decommissioning financial assurance be provided in an amount not less than the minimum formula amount in 10 CFR 50.75(c). In 10 CFR 50.75(e), the NRC includes the methods acceptable to the agency for covering this decommissioning financial assurance amount, including using an NDT. Finally, 10 CFR 50.75(f) and (h) provide additional requirements on the reporting and management of NDTs.

In addition, 10 CFR 50.82(a)(8)(i) states that licensees may use NDTs if:

- (A) The withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in § 50.2;
- (B) The expenditure would not reduce the value of the decommissioning trust below an amount necessary to place and maintain the reactor in a safe storage condition if unforeseen conditions or expenses arise; and
- (C) The withdrawals would not inhibit the ability of the licensee to complete funding of any shortfalls in the decommissioning trust needed to ensure the availability of funds to ultimately release the site and terminate the license.

In accordance with 10 CFR 50.2, the term "decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits (1) release of the property for unrestricted use and termination of the license or (2) release of the property under restricted conditions and termination of the license.

Section 50.82(a)(8)(v) of 10 CFR requires power reactor licensees that have permanently ceased operations to provide to the NRC annually, by March 31, a decommissioning financial assurance status report. The report must include additional financial assurance to cover any projected shortfalls.

Section 50.54(bb) of 10 CFR requires, in part, a licensee to submit, for NRC review and preliminary approval, the program by which the licensee intends to manage and provide funding for the management of all spent nuclear fuel at the reactor following permanent cessation of operation of the reactor until title to the spent fuel and possession of the spent fuel is transferred to the DOE for its ultimate disposal in a repository. In addition, 10 CFR 50.82(a)(8)(vii) provides, in part, for the licensee's annual submittal to the NRC of a report on the status of its funding for managing spent fuel. If the funds accumulated do not cover the projected cost, a plan to obtain additional funds to cover the cost must be included.

Section 50.34(b)(6) of 10 CFR requires that applicants provide certain information on facility operation. It requires, in part, that the information includes:

- (i) The applicant's organizational structure, allocations or responsibilities and authorities, and personnel qualification requirements.
- (ii) Managerial and administrative controls to be used to assure safe operation.

Section 50.34(b)(7) of 10 CFR also requires that applicants provide the following information in the final safety analysis report:

The technical qualifications of the applicant to engage in the proposed activities in accordance with the regulations in this chapter.

The NRC staff uses, in part, the following regulatory guidance to evaluate whether the qualifications of licensees would be affected by proposed transfers:

- (1) NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," Chapter 13, "Conduct of Operations," Section 13.1.1, Revision 6, "Management and Technical Support Organization," dated August 2016 (ADAMS Accession No. ML15005A449), which provides guidance for the review of changes to the technical organization or personnel qualifications proposed as a result of an operating license transfer. Specifically, Section I.4, "Reviews of Operating License Transfers," states that the applicant for transfer of an operating license should provide a description of the organization to support plant operations, which should include (1) organizational charts of the corporate-level management and technical support organizations, emphasizing the changes to be made as a result of the transfer, (2) the relationship of the nuclear-oriented parts of the organization to the rest of the corporate organization, and (3) description of the specific provisions which have been made for uninterrupted technical support for operations.
- (2) NUREG-0800, Chapter 13, Sections 13.1.2–13.1.3, Revision 7, "Operating Organization," dated August 2017 (ADAMS Accession No. ML15007A296),

which provides guidance for the review of changes to the operating organization proposed as a result of an operating license transfer.

The purpose of this evaluation is to ensure that the proposed corporate management is involved with, informed of, and dedicated to the safe operation, maintenance, and decommissioning of the facility and that adequate technical and financial resources will be provided to support these activities.

In addressing foreign ownership, control, or domination (FOCD) issues, Section 103d of the AEA provides, in relevant part, that no license may be issued to:

[A]ny corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

The NRC's regulation in 10 CFR 50.38, "Ineligibility of certain applicants," is the regulatory provision that implements the FOCD provisions of the AEA. The NRC staff evaluates license transfer applications in a manner that is consistent with the guidance provided in the NRC "Final Standard Review Plan on Foreign Ownership, Control, or Domination," as published in the *Federal Register* on September 28, 1999, to determine whether the proposed transferee is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government (64 FR 52357-52359). The NRC's position on FOCD, outlined in the SRP, states that "the foreign control prohibition should be given an orientation toward safeguarding the national defense and security." Further, the SRP on FOCD outlines how the effects of foreign ownership may be mitigated through implementation of a "negation action plan" to ensure that any foreign interest is effectively denied control or domination over the licensee.

The NRC staff also reviews information that relates to nuclear onsite property damage insurance requirements under 10 CFR 50.54(w) and the Price-Anderson insurance and indemnity requirements under Section 170 of the AEA and 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements."

With respect to the transfer of control of a license for an ISFSI, 10 CFR 72.50(a) states:

No license or any part included in a license issued under this part for an ISFSI or MRS [Monitored Retrievable Storage Installation] shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission gives its consent in writing.

Section 72.6(b) of 10 CFR states:

A general license is hereby issued to receive title to and own spent fuel, high-level radioactive waste, or reactor-related GTCC waste without regard to quantity. Notwithstanding any other provision of this chapter, a general licensee under this paragraph is not authorized to acquire, deliver, receive, possess, use, or transfer spent fuel, high-level radioactive waste, or reactor-related GTCC waste except as authorized in a specific license.

Section 72.210 of 10 CFR states:

A general license is hereby issued for the storage of spent fuel in an independent spent fuel storage installation at power reactor sites to persons authorized to possess or operate nuclear power reactors under 10 CFR part 50....

Section 72.30 of 10 CFR discusses financial assurance for decommissioning ISFSIs.

Finally, with respect to the requested conforming license amendment, 10 CFR 50.90 states, in part:

Whenever a holder of a license ... desires to amend the license..., application for an amendment must be filed with the Commission ... fully describing the changes desired, and following as far as applicable, the form prescribed for original applications.

Pursuant to 10 CFR 2.1315, where administrative license amendments are necessary to reflect an approved license transfer, such amendments will be included in the order that approves the license transfer.

4.0 FINANCIAL EVALUATION

4.1 Financial Qualifications

As described in this SE, by letter dated February 20, 2013, DEF notified the NRC that CR-3 had been permanently shutdown and that all fuel had been permanently removed from the reactor vessel. Therefore, pursuant to 10 CFR 50.82(a)(2), the CR-3 license no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel.

Following the proposed transfer to ADP CR3 of operating authority for decommissioning, DEF would continue to own CR-3 and the existing NDT and would be responsible to direct the trustee to disburse funds to pay for the costs of decommissioning as work is completed. The Applicants stated that, as the current (and proposed continuing) owner of CR-3, DEF recovers its cost of electricity for CR-3 either directly or indirectly through rates established by the Florida Public Service Commission. The Applicants further stated that, following the proposed transaction, DEF would continue to recover its cost of electricity through the Florida Public Service Commission, including the ability to seek further ratepayer funding for decommissioning. Therefore, DEF is considered an "electric utility," as defined in 10 CFR 50.2. As such, it is presumed to be financially qualified to own and pay for the operation of CR-3, and is exempt from the financial qualifications information requirements associated with reactor operations pursuant to 10 CFR 50.33(f) and in accordance with Section III.1.b of NUREG-1577, Rev. 1.

The proposed transfer of operating authority to ADP CR3 would only involve the operating authority for decommissioning since the CR-3 license no longer authorizes operation. Therefore, ADP CR3 would not conduct the operations contemplated by the financial qualifications provisions of 10 CFR 50.33(f), but rather all of its licensed activities would involve the possession of radioactive material in connection with maintaining the safe condition of the plant, radiological decommissioning of the CR-3 site (including the ISFSI), license termination, and operational responsibilities associated with spent fuel management.

The NRC staff's financial review pursuant to 10 CFR 50.33(f), 10 CFR 50.33(k)(1), 10 CFR 50.75, and 10 CFR 50.82(a), includes an analysis of the projected costs for decommissioning

the CR-3 facility and terminating the license, and spent fuel management until DOE takes title to and possession of the fuel. For a facility in decommissioning, a licensee is required to execute financial plans for spent fuel management under 10 CFR 50.54(bb) and report annually on the status of funding for radiological decommissioning and spent fuel management under 10 CFR 50.82(a)(8)(v) to (vii).

4.2 Decommissioning Financial Assurance

As of April 30, 2019, the CR-3 NDT had a market value of approximately \$731 million. Under the terms of the DSA, DEF will execute the Fourth Amendment to Amended and Restated Nuclear Decommissioning Trust Agreement, to segregate \$540 million into an "IOI Decommissioning Account" dedicated to funding ADP CR3's decommissioning activities necessary to achieve the ISFSI-Only Interim End-State Conditions, as defined in the DSA (partial license termination). According to the application, all remaining assets in the CR-3 NDT will be held in a "Crystal River Reserve Account," within the trust and will remain dedicated to the decommissioning of CR-3. The right to draw on the source of funds described herein, and the *pro forma* projected costs set forth in Enclosure 4 of the application, provide the requisite financial information for the proposed license transfer consistent with 10 CFR 50.33(f). The availability of the funds in the CR-3 NDT satisfies the "prepayment" method of providing financial assurance pursuant to 10 CFR 50.75(e)(1).

As discussed below, the existing NDT funds provide an appropriate basis for the financial qualifications of ADP CR3. ADP CR3 has demonstrated that with conservative NDT investments and based on the estimate of remaining costs expected for decommissioning, the required funding level in the accounts will be sufficient to pay all of the annual expected costs of decommissioning the CR-3 facility. In addition, major decommissioning work will be performed under fixed-price or fixed-unit contracts that are subject to performance bonds to guarantee the performance of the tasks.

Pursuant to 10 CFR 50.2, "Decommission," means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits: (1) release of the property for unrestricted use and termination of the license, or (2) release of the property under restricted conditions and termination of the license. The existing NDT for CR-3 was created in compliance to 10 CFR 50.75 and the funds within the NDT were collected while the facility was operating. As described below, the NRC staff's review of decommissioning financial assurance assesses whether the Applicants have provided information sufficient to demonstrate that there is reasonable assurance that, after the proposed license transfer, funds will be available to cover the costs of the radiological decommissioning of CR-3 and its ISFSI.

As described in DEF's 2013 PSDAR, the current decommissioning plan for CR-3 is for DEF to complete decommissioning within a 60-year period using the SAFSTOR method. The revised PSDAR provided in support of the proposed license transfer reflects ADP CR3's plan to, if the transfer is consummated, complete the decommissioning of the non-ISFSI portions of the CR-3 site as soon as 2026, but no later than the end of 2030 (i.e., use the DECON method). The revised PSDAR includes:

1. A description of the planned, accelerated decommissioning activities along with a schedule for their accomplishment and
2. A site-specific decommissioning cost estimate for the planned, accelerated

decommissioning, including the projected spent fuel management costs, license termination costs, and site restoration costs.

Under the revised PSDAR, as compared to DEF's 2013 PSDAR and 2019 Decommissioning Funding Status Report for CR-3 (ADAMS Accession No. ML19086A046), the proposed change in decommissioning method from SAFSTOR to DECON would result in an overall 47-year acceleration of the site closure, from 2074 to approximately 2026, and a license termination cost reduction in an amount of approximately \$247 million.

In the license transfer application dated June 14, 2019, the Applicants provided financial projections for the duration of the CR-3 decommissioning project using the DECON method, including the amount of decommissioning trust funds in the NDT. They included a cash flow analysis that assumed an NDT balance of approximately \$731 million (as of April 30, 2019), as well as estimated costs for radiological decommissioning and site restoration (totaling approximately \$540 million) and spent fuel management, all to be funded using the NDT. The NRC staff's analysis determined that the amount of funds available in the NDT is sufficient to cover the entirety of estimated decommissioning costs.

On March 28, 2014, pursuant to 10 CFR 50.12, "Specific exemptions," DEF requested an exemption from 10 CFR 50.82(a)(8)(i)(A) to allow the use of a portion of the funds from the CR-3 NDT for spent fuel management activities and site restoration activities (ADAMS Accession No. ML14098A037). Additionally, DEF requested an exemption from 10 CFR 50.75(h)(2) for all CR-3 NDT disbursements for spent fuel management and site restoration costs to be made without prior notice, similar to withdrawals in accordance with 10 CFR 50.82(a)(8). The NRC staff's analysis of this exemption request was performed separately from this SE and, on January 26, 2015, the staff approved the exemption request (ADAMS Accession No. ML14247A545). If the proposed license transfer were granted and consummated, these exemptions would remain in place as DEF would continue to be the owner licensee for CR-3. In its review of the exemption request, the staff concluded that reasonable assurance exists that adequate funds will be available in the NDT to complete radiological decommissioning, spent fuel management, and site restoration activities within the scope of the exemption request. The staff's findings from its evaluation of the exemption request were considered as part of its analysis of the proposed license transfer and support the staff's conclusion that the Applicants' use of the NDT for activities associated with spent fuel management and site restoration will not negatively impact the availability of funding for radiological decommissioning.

In addition to the NDT funds, according to the application and under Section 3.15 of the DSA, ADP SF1 will establish an "ISFSI Decommissioning Trust" for the purpose of holding funds to decommission the ISFSI. At the time of the license transfer, ADP CR3 and ADP SF1 will be required to provide financial assurance to decommission the ISFSI using one of the methods set forth in 10 CFR 72.30(e). The application further states that ADP SF1 may propose to deposit \$3.95 million into the trust, which, at a two percent real rate of return, would be projected to grow to \$5.4 million by the year 2037, when the ISFSI is expected to be decommissioned. The application also provides that ADP CR3 will have access to other financial assurance provided by its parent companies, NorthStar and Orano. Specifically, NorthStar will enter into a financial Support Agreement in the amount of \$105 million, and Orano will enter into a financial Support Agreement in the amount of \$35 million. According to the application, these agreements will provide an additional \$140 million if needed for ADP CR3 to meet its obligations, so that CR-3 is maintained and decommissioned in compliance with NRC requirements. Lastly, according to the application and under Section 3.14 of the DSA, ADP CR3 will establish a "Provisional Trust,"

which will be initially funded with \$20 million. ADP CR3 will retain six percent of each invoice for decommissioning services performed and paid from the NDT and deposit those amounts into the Provisional Trust. This retainage will continue until the Provisional Trust contains \$50 million to provide additional financial assurance of ADP CR3's performance and will not be released until the NRC approves partial license termination.

The NRC staff reviewed the information provided in the application, including the additional funding mechanisms of the ISFSI Decommissioning Trust, the financial Support Agreements, and the Provisional Trust. Based on this review, the staff's independent cash flow analysis in Attachment 1 to this SE, and the imposition of the following license conditions, the staff finds that the Applicants have provided information sufficient to demonstrate that there is reasonable assurance that, after the proposed license transfer, funds will be available to cover the costs of the radiological decommissioning of CR-3 and its ISFSI. Therefore, the staff concludes that the proposed license transfer satisfies 10 CFR 50.80 with respect to decommissioning financial assurance.

1. The financial Support Agreement between NorthStar Group Services, Inc. and ADP CR3 and ADP SF1 in the amount of \$105 million, and the financial Support Agreement between Orano USA LLC and ADP CR3 and ADP SF1 in the amount of \$35 million, to assure the ability of ADP CR3 and ADP SF1 to pay the expenses of: (i) maintaining and decommissioning the CR-3 facility and ISFSI safely; (ii) protecting the public health and safety; and (iii) meeting NRC requirements, are effective. These Support Agreements may not be voided, canceled, or modified without the prior written consent of the NRC staff. The Director of the Office of Nuclear Material Safety and Safeguards shall be informed, in writing, no later than 10 working days after any funds are provided under the terms of the Support Agreements.
2. ADP CR3 shall establish a Provisional Trust consistent with Section 3.14 of the "Decommissioning Services Agreement by and between Duke Energy Florida, LLC, as Company and ADP CR3, LLC, as Contractor and ADP SF1, LLC, as Buyer Dated as of May 29, 2019" (DSA). The Provisional Trust will be initially funded with \$20 million. ADP CR3 will retain six percent of each invoice for decommissioning services performed and paid from the nuclear decommissioning trust and deposit those amounts into the Provisional Trust to fund and maintain the Provisional Trust at \$50 million until the ISFSI-Only Interim End-State Conditions, as defined in the DSA, are achieved.
3. ADP CR3 shall provide financial assurance in a form and in an amount meeting the requirements of 10 CFR 72.30(e) to the ISFSI Decommissioning Trust established under Section 3.15 of the DSA. The ISFSI Decommissioning Trust shall be established to hold the financial assurance until the End-State Conditions, as defined in the DSA, are achieved.

4.3 Spent Fuel Management Financial Assurance

After the closing of the proposed transaction, ADP SF1 would be a general licensee under 10 CFR 72.6, retaining ownership of and title to all spent nuclear fuel and all rights and obligations under the Standard Contract. The NDT would be retained by DEF. In addition, ADP CR3 would be a general licensee under 10 CFR 72.210, and would be responsible for operating, maintaining, and decommissioning the CR-3 ISFSI. According to the application and

the revised PSDAR, operating and maintaining the ISFSI (i.e., spent fuel management) will cost approximately \$71.1 million from 2020-2027 and \$213.9 from 2027-2037, for a total of approximately \$285.02 million.

In their license transfer application dated June 14, 2019, the Applicants provided their funding plan for spent fuel management costs, which involves using excess NDT funds, with additional assurance provided by DOE reimbursements, financial Support Agreements totaling \$140 million, and a Provisional Trust with an initial funding of \$20 million and an ultimate funding of \$50 million. The NRC staff's review of the Applicants' funding plan for spent fuel management costs is discussed below.

In analyzing the Applicants' proposed use of excess NDT funds to cover spent fuel management costs, the NRC staff considered its findings from its evaluation of the 2014 exemption request, discussed above, as well as its independent cash flow analysis. The staff determined that the Applicants' use of the NDT for spent fuel management costs will not negatively impact the availability of funding for radiological decommissioning. Additionally, the excess NDT funds will be sufficient to cover the costs associated with spent fuel management.

Moreover, the financial Support Agreements and Provisional Trust discussed above will provide the funds necessary to pay ADP CR3 in advance of ADP SF1 recovering spent fuel management costs under the Standard Contract from the DOE through litigation or under a settlement, or to pay for ADP CR3's costs that are not recoverable from the DOE.

The Applicants also committed to having a performance bond in place to cover annual spent fuel management costs in the event that a settlement agreement with the DOE is not entered into. The bond will be renewed annually until a settlement is reached. As assurance regarding the Applicants' reliance on a future DOE settlement agreement, the NRC staff imposes the following license condition:

ADP CR3 must ensure that a performance bond is obtained if a settlement agreement with the U.S. Department of Energy (DOE) on DOE reimbursements for spent fuel management expenses is not entered into by January 1, 2025. The performance bond will be effective January 1, 2025, initially in an amount equal to one year's worth of spent fuel management expenses. ADP CR3 will thereafter ensure that a performance bond is maintained for subsequent years, in the amount of the applicable estimated annual expense, until a settlement agreement with the DOE is entered into.

The NRC staff finds that the assumption of DOE reimbursement is a reasonable source of additional funding. In recent years, the DOE reimbursements have become more consistent and predictable despite the longevity of the litigation process and complexity of the DOE standard settlement agreements. Moreover, as further assurance of their reliance on a future DOE settlement agreement, the Applicants agreed to a license condition to obtain a performance bond to cover spent fuel management costs if a settlement agreement has not been reached in the timeframe anticipated. Therefore, the NRC staff concludes that DOE reimbursements, as proposed by the Applicants, provide a reasonable source of funds, in addition to the other sources of funds discussed above, to cover spent fuel management costs.

Based on its review, in consideration of the above analysis and the license conditions, the NRC staff finds that the Applicants have provided information sufficient to demonstrate that there is reasonable assurance that, after the proposed license transfer, funds will be available to cover

the costs of spent fuel management in accordance with the requirements of 10 CFR 50.33(f) and 10 CFR 50.54(bb). Therefore, the staff concludes that the proposed license transfer satisfies 10 CFR 50.80 with respect to spent fuel management financial assurance.

4.4 Financial Evaluation Conclusion

As described above, the NRC staff evaluated the Applicants' financial qualifications, including decommissioning financial assurance and spent fuel management financial assurance. Based on this evaluation and an independent cash flow analysis, the staff determined that there is reasonable assurance that the funds in the NDT will be sufficient to cover the costs of the radiological decommissioning of CR-3 and its ISFSI, spent fuel management, and site restoration. Additional assurance of adequate funds is provided by the license conditions requiring an ISFSI Decommissioning Trust, financial Support Agreements, a Provisional Trust, and a performance bond or settlement agreement with the DOE. Therefore, the staff concludes that DEF and ADP CR3 are financially qualified to hold the CR-3 license, as proposed.

5.0 STANDARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH-LEVEL RADIOACTIVE WASTE

Upon closing, ADP SF1 will hold title to the spent nuclear fuel at CR-3 and will maintain the associated Standard Contract, Standard Contract No. DE-CR01-83NE44382, including all rights and obligations under that contract. The Standard Contract was entered into by the predecessor to DEF, Florida Power Corporation, and the United States of America, represented by the DOE, to govern the disposal of spent nuclear fuel generated at CR-3. ADP CR3 will have the authority for the possession, maintenance, and decommissioning of the CR-3 facility, which includes spent fuel management and the maintenance and security of the ISFSI.

6.0 ANTITRUST CONSIDERATION

The AEA does not require or authorize antitrust reviews of post-operating license transfer applications (*Kansas Gas and Electric Co., et al.* (Wolf Creek Generating Station, Unit 1), CLI-99-19, 49 NRC 441 (1999)). The application post-dates the issuance of the operating license for the unit under consideration in this SE and, therefore, no antitrust review is required or authorized. Additionally, the subject license does not contain any antitrust conditions; therefore, there are no antitrust issues to be considered in connection with the conforming license amendment.

7.0 FOREIGN OWNERSHIP, CONTROL, OR DOMINATION

The application states that ADP CR3 is a wholly owned subsidiary of Accelerated Decommissioning Partners, LLC (ADP), which is 75% owned and controlled by NorthStar. According the application, NorthStar is not now, and will not in the future become, owned, controlled, or dominated by any alien, foreign corporation, or foreign government as contemplated in the foreign ownership, control, or domination (FOCD) requirements and the NRC's guidance concerning the implementation thereof. NorthStar is a Delaware corporation that is owned and controlled by NorthStar Group Holdings, LLC (Holdings), which is owned and controlled by the J.F. Lehman private equity funds. Ultimately, control is exercised by four U.S. citizens, who are the managing members of JFL GP Investors IV, LLC. Each of the funds has multiple limited partnership investors, who are passive investors. While these passive investors may include foreign investors, NorthStar is not aware of any that hold more than 5% of the indirect ownership interests of NorthStar. In addition, the passive investors are not able to

exercise control over the private equity funds or NorthStar. The other 25% interest in ADP is owned and controlled by Orano, whose parent company is owned by Orano SA, a French Société Anonyme,¹ which is majority owned by the French State. Although Orano is ultimately majority owned by a foreign state, Orano only owns 25% of ADP, and it is not able to exercise control over ADP.

When ADP was formed, NorthStar and Orano included FOCD negation measures in Section 11.4 of the Limited Liability Agreement of ADP, LLC. The terms of Section 11.4 ensure that NorthStar has exclusive authority to decide matters relating to nuclear safety or security, and the ability to appoint any Chief Executive Officer or Chief Nuclear Officer. These measures ensure U.S. control of ADP for purposes of FOCD compliance, and fully negate any potential for FOCD over the licenses. In addition, ADP CR3 has developed a Negation Action Plan addressing FOCD.

The NRC staff reviewed the information provided in the application and the proposed Negation Action Plan measures provided in the supplemental letter dated January 17, 2020. Based on this review and with the imposition of the following license condition, the staff has reasonable assurance that the licensee will not be foreign owned, controlled, or dominated:

ADP CR3 must ensure that:

The NorthStar Group Services, Inc. (NorthStar) Member Representative of Accelerated Decommissioning Partners, LLC (ADP) (NorthStar Member Representative) has the responsibility and exclusive authority to ensure and shall ensure that the business and activities of ADP CR3 and ADP SF1 with respect to the CR3 license is at all times conducted in a manner consistent with the public health and safety, and common defense and security of the United States.

The NorthStar Member Representative, and any Chief Executive Officer (CEO) or Chief Nuclear Officer (CNO) of ADP or ADP CR3 appointed by NorthStar to serve in such office, shall be a U.S. citizen.

The licensees shall not approve or take any action involving matters necessary to ensure U.S. control without the approval of NorthStar. This includes any matters relating to nuclear safety, security, or reliability, the appointment of any CEO and CNO, and any successor thereof, or any other issue reasonably determined by NorthStar in its prudent exercise of discretion.

Changes to the ADP CR-3, LLC Negation Action Plan may only be made upon recommendation of ADP CR3's CEO and approval by NorthStar. Any proposed change resulting in a decrease in the effectiveness of the plan will not be implemented without prior NRC approval. ADP CR3 will provide the NRC with 30 days prior written notice before the implementation of any material changes to the negation measures in the Limited Liability Agreement of Accelerated Decommissioning Partners, LLC dated February 7, 2017 (ADP LLC Agreement).

If at any time NorthStar is not required to have exclusive authority to approve any of the actions in Section 11.4(a) of the ADP LLC Agreement, any amendments to Section

¹ A Société Anonyme is a public limited company similar to a corporation under U.S. law.

11.4(a) must comply with applicable law, including FOCD requirements, and must be approved by the NRC.

8.0 NUCLEAR INSURANCE AND INDEMNITY

Pursuant to the requirements of the Price-Anderson Act (Section 170 of the AEA) and the NRC's implementing regulations in 10 CFR Part 140, the current indemnity agreement must be modified to reflect that, after the proposed license transfer takes effect, DEF (licensed owner) and ADP CR3 (licensed operator for decommissioning) will be the sole licensees for CR-3 for the purposes of decommissioning the site. Consistent with NRC practice, the NRC staff will require DEF and ADP CR3 to provide evidence that they have obtained the appropriate amount of insurance pursuant to 10 CFR 140.11(a)(4) and 10 CFR 50.54(w), and that the insurance is effective concurrent with the date of the license transfer and amended indemnity agreement. Because the issuance of the amended license is directly tied to completion of the proposed license transfer, the Order approving the transfer will be conditioned as follows:

Prior to the closing of the license transfer, DEF and ADP CR3 shall provide the Director of the NRC's Office of Nuclear Material Safety and Safeguards satisfactory documentary evidence that they have obtained the appropriate amount of insurance required of a licensee under 10 CFR 140.11(a)(4) and 10 CFR 50.54(w), consistent with the exemptions issued for CR-3 on April 27, 2015, and March 31, 2016.

Based on the above, the NRC staff concludes that the proposed license transfer, as conditioned, satisfies the nuclear insurance and indemnity requirements of 10 CFR Part 140 and 10 CFR Part 50.

9.0 TECHNICAL QUALIFICATIONS EVALUATION

With the completion of the proposed transfer actions, ADP CR3 would assume responsibility for and control over the CR-3 facility. ADP CR3 is a wholly owned subsidiary of ADP, which is a joint venture of NorthStar (75%) and Orano (25%). Orano is owned by Orano USA LLC, which was formerly AREVA Nuclear Materials, LLC. NorthStar and Orano formed ADP to decommission commercial nuclear reactors, to acquire control of reactor sites, and to execute prompt decommissioning. ADP CR3 would draw on the experience of individuals from its parent companies, NorthStar and Orano, as well as an affiliate of NorthStar, WCS. Additionally, ADP CR3 intends to staff technical support positions that are important to the safe storage of fuel and conduct of radiological protection with key members of the existing CR-3 staff who are already trained and qualified and would fill positions with responsibilities analogous to their pre-license transfer responsibilities. According to the Applicants, the organizational staffing levels after the transfer would be comparable to the expected evolution of the existing SAFSTOR organization and would be aligned with that appropriate for a decommissioning plant with all fuel in dry storage and dormant former power block buildings, while ensuring that sufficient qualified resources are available to fully meet the requirements of the licenses and applicable NRC regulations.

NorthStar has more than 30 years of experience as a general decommissioning contractor on commercial and industrial projects while performing decontamination and decommissioning work, including on asbestos projects. NorthStar has worked on the decommissioning at the DOE Hanford and Savannah River sites, as well as on the decommissioning of the research reactors at the Universities of Buffalo, Arizona, Illinois, and Washington. Orano has more than

twenty years of experience in radiological work, including overseeing spent nuclear fuel, the segmentation of reactor pressure vessels and internals, radioactive waste management, nuclear materials transportation, and other decommissioning work in the United States, France, Canada, the United Kingdom, Germany, and Japan. Orano and its affiliates have specific PWR experience including reactor pressure vessels and internals segmentation and packaging at the Yankee Rowe, Maine Yankee, and Connecticut Yankee nuclear power plants. WCS is a treatment, storage, and disposal company dealing in radioactive, hazardous, and mixed wastes. WCS is licensed to treat, store, and dispose of Class A, B, and C low level radioactive waste.

The Applicants stated that ADP CR3 employees and contractors would not be employed without being qualified for their positions in accordance with the applicable Quality Assurance Program and regulatory requirements, including the guidance in NRC Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants" (ADAMS Accession No. ML19101A395). ADP CR3 would also adopt the existing Quality Assurance (QA), emergency preparedness, radiological protection, security, and training procedures and establish these functions using parent company personnel and existing incumbent personnel, as well as qualified contractors. DEF would transfer to ADP CR3 control over the assets related to CR-3 that will be needed to maintain the CR-3 facility and the site in accordance with NRC requirements. These assets include, in addition to the structures and equipment, the necessary books, records, safety and maintenance manuals, and engineering construction documents.

The Applicants provided an organization chart showing the planned project organization. Resumes for key management personnel were also provided. The Applicants plan to establish an organization responsible for radiological safety, industrial health and safety, fuel storage, regulatory affairs, quality assurance, licensing, environmental issues, reactor pressure vessel segmentation, large component removal, decontamination and decommissioning, engineering and operations, and waste operations. This organization would provide a nuclear management team with control over the decontamination and decommissioning operations. An ISFSI Manager would be responsible for maintaining a trained and qualified staff to support the safe and secure storage of fuel, as well as the performance of required ISFSI maintenance and surveillance activities. The individual filling this position would be required to have extensive knowledge of ISFSI-related 10 CFR Parts 50 and 72 license requirements, Site Emergency Plan, Security Plan, and QA program requirements and related administrative controls. The ISFSI Manager would be required to have, at a minimum, a bachelor's degree in Engineering or Science or Equivalent, and 10 years of power plant experience of which a minimum of 3 years shall be related to nuclear power plant experience. The Operations Manager, the Facility Maintenance Coordinator, the Technical Specialist, the Licensing Manager, the Radiation Protection Manager, and the Security Manager would report to the ISFSI Manager and would fulfill the functional responsibilities performed by existing CR-3 staff in comparable positions in the SAFSTOR organization. The individual filling the Radiation Protection Manager position would be required to have education, training, and experience consistent with ANSI/ANS-3.1-2014, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants," Section 4.3.3, "Radiation Protection," middle level manager and radiation protection manager.

Based on its review, the NRC staff determined that the Applicants have described a project organization that will provide the requisite experience and expertise for the decommissioning of the CR-3 facility, the maintenance of the CR-3 ISFSI, and compliance with the requirements of the licenses and the Commission's regulations. Therefore, the NRC staff finds that, after the proposed transfer of licensed authority from DEF to ADP CR3, ADP CR3 will (1) have an acceptable corporate organization, (2) retain an acceptable onsite organization, and (3) have adequate resources to support the safe maintenance and decommissioning of the CR-3 facility.

The Applicants' submittal adequately addresses the relevant requirements of 10 CFR 50.34(b) and 10 CFR 50.80. Accordingly, the staff concludes that ADP CR3 would be technically qualified to hold CR-3 Facility Operating License No. DPR-72 and the associated general license for the CR-3 ISFSI.

10.0 SUMMARY

Based on its review of the information provided in the license transfer application, as supplemented, its independent analysis, and the conditions described herein, the NRC staff finds that DEF, with respect to being the licensed owner of CR-3, and ADP CR3, with respect to being the licensed operator of the CR-3 facility, have satisfied the NRC's financial qualifications; decommissioning funding assurance; antitrust; foreign ownership, control, or domination; nuclear insurance and indemnity; and technical qualifications requirements. Therefore, the staff concludes that: (1) the proposed transferee is qualified to be the holder of the licenses and (2) the transfer of the licenses is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

11.0 CONFORMING AMENDMENT

The Applicants requested a conforming amendment to Facility Operating License No. DPR-72 for CR-3. No physical or operational changes to the CR-3 facility were requested. The proposed conforming amendment reflects the license transfer action. For example, the proposed changes to the license include adding "ADP CR3, LLC" as a licensee name and delineating the possession of the CR-3 facility by ADP CR3, the ownership of CR-3 by DEF, and the ownership of the spent fuel and GTCC in the CR-3 ISFSI by ADP SF1, LLC. The Applicants also requested editorial changes such as deleting obsolete or unnecessary text.

The NRC staff reviewed the proposed changes to the license and determined that they involve no safety questions, are administrative in nature, and are necessary to reflect the approved license transfer. Accordingly, the staff concludes that the proposed conforming amendment is acceptable. The amendment shall be issued and made effective at the time of the completion of the proposed transaction.

12.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC staff notified the Florida State official, Cindy Becker, Chief, Bureau of Radiation Control, Florida Department of Health, of the proposed license transfer and issuance of the conforming amendment on March 6, 2020. The State official had comments.

13.0 ENVIRONMENTAL CONSIDERATION AND NO SIGNIFICANT HAZARDS CONSIDERATION

The subject application is for approval of a transfer of licenses issued by the NRC and for approval of an associated amendment of licenses required to reflect the approval of the transfer. Accordingly, the actions involved meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(21). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the approval of the license transfer application and conforming license amendment.

As provided in 10 CFR 2.1315, unless otherwise determined by the Commission with regard to

a specific application, the Commission has determined that any amendment to the license of a utilization facility or to the license of an ISFSI, which does no more than conform the license to reflect the transfer action involves no significant hazards consideration. No contrary determination has been made by the Commission with regard to this specific application.

14.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) the proposed transferee is qualified to be the holder of the licenses and (2) transfer of the licenses is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is 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.

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Date: April 1, 2020

Attachment 1

Cash Flow Analysis
Crystal River Unit 3 Nuclear Generating Plant
Nuclear Decommissioning Trust
(millions of 2019\$)

Year	Beginning-of-Year NDT Balance	License Termination and Site Restoration Cost	Spent Fuel Management Cost	Total Cost	NDT Earnings (2% real rate of return)	End-of-Year NDT Balance
2020	\$731,000	\$39,254	\$7,820	\$47,074	\$13,679	\$697,605
2021	\$697,605	\$108,356	\$7,976	\$116,332	\$11,625	\$592,898
2022	\$592,898	\$128,620	\$19,770	\$148,390	\$8,890	\$453,398
2023	\$453,398	\$70,909	\$9,617	\$80,526	\$7,457	\$380,330
2024	\$380,330	\$116,880	\$8,464	\$125,344	\$5,100	\$260,085
2025	\$260,085	\$41,474	\$8,634	\$50,108	\$4,200	\$214,177
2026	\$214,177	\$34,507	\$8,806	\$43,313	\$3,417	\$174,281
2027	\$174,281	\$0	\$19,448	\$19,448	\$3,097	\$157,930
2028	\$157,930	\$0	\$19,448	\$19,448	\$2,770	\$141,251
2029	\$141,251	\$0	\$19,448	\$19,448	\$2,436	\$124,239
2030	\$124,239	\$0	\$19,448	\$19,448	\$2,096	\$106,887
2031	\$106,887	\$0	\$19,448	\$19,448	\$1,749	\$89,188
2032	\$89,188	\$0	\$19,448	\$19,448	\$1,395	\$71,135
2033	\$71,135	\$0	\$19,448	\$19,448	\$1,034	\$52,721
2034	\$52,721	\$0	\$19,448	\$19,448	\$665	\$33,938
2035	\$33,938	\$0	\$19,448	\$19,448	\$290	\$14,780
2036	\$52,721	\$0	\$19,448	\$19,448	\$665	\$33,938
2037	\$33,938	\$0	\$19,449	\$19,449	\$290	\$14,779
	Totals:	\$540,000	\$285,016	\$825,016		

Notes:

1. The 2020 beginning-of-year NDT balance is the fully funded balance as of April 30, 2019. It does not include additional financial assurance as stated in the application or DSA (i.e., financial Support Agreements, Provisional Trust, or ISFSI Decommissioning Trust).
2. Assumes no credit for DOE reimbursements of spent fuel management costs.
3. ISFSI decommissioning costs are included in the Spent Fuel Management Cost column of the above cash flow analysis.