



Carbon Free Power Project Application for Limited Work Authorization

Enclosure 4 - Site Redress Plan

Revision 0
July 2023

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Enclosure 4 – Site Redress Plan

1.0 Introduction

1.1 Purpose

This enclosure provides CFPP LLC's plan for redress of Carbon Free Power Project (CFPP) site activities performed under the requested CFPP limited work authorization (LWA) as required by 10 CFR 2.101(a)(9) and 10 CFR 50.10(d)(3)(iii). The CFPP site redress plan would be implemented pursuant to 10 CFR 50.10(g) and 10 CFR 52.91(b) if limited work activities are terminated or the LWA is revoked by the Nuclear Regulatory Commission (NRC), or upon effectiveness of the Commission's final decision denying the associated combined license (COL) application, as applicable.

The purpose of site redress is to reverse, mitigate, or stabilize environmental impacts incurred during the conduct of limited work activities. The CFPP site redress plan has been developed to provide reasonable assurance that redress carried out under the plan would result in the return of the site to an environmentally stable and aesthetically acceptable condition, in a manner consistent with applicable federal, state, and local requirements.

1.2 Site Description and Site Ownership/Control

A description of the CFPP site is provided in Section 2.1 of the LWA application associated with this Enclosure 4 (i.e., the CFPP LWA application), and in Sections 1.1 and 2.1 of the LWA environmental report that is provided as Enclosure 3 of the CFPP LWA application.

As described in Section 2.2 of the CFPP LWA application, CFPP LLC's occupancy and uses of the CFPP site are subject to a U.S. Department of Energy (DOE) use permit (i.e., "CFPP use permit") and associated memorandum of agreement (MOA) (Reference 4-1 and Reference 4-2, respectively). The CFPP use permit includes provisions requiring CFPP LLC, as the permit holder, to restore the CFPP site "to its substantially original condition" in the event that CFPP site construction activities begin and subsequently are abandoned prior to operations. As such, the DOE has granted CFPP LLC sufficient rights to perform the activities described in this site redress plan, subject to the terms and conditions specified in the CFPP use permit and MOA, as amended. The CFPP use permit provisions related to site redress are described further in Section 2.1.

1.3 Limited Work Authorization Activities

The CFPP site redress plan provided herein covers the full extent of the construction activities for which NRC approval is sought under the CFPP LWA application (i.e., "LWA activities"). The LWA activities are described in Section 3.2.1 and Section 4 of the CFPP LWA application, and are summarized as follows:

- remediation of soft or fractured rock in the subgrade underlying the Reactor Building (RXB) and Radioactive Waste Building (RWB) excavations
- installation of RXB mud mat including reinforcing wire mesh and vapor barrier
- installation of RXB permanent basemat components up to but not including concrete placement

The above CFPP LWA activities would take place within the areas of the RXB and RWB deep excavations. The CFPP plan for redress of these LWA activities is described in Section 2.2 below.

2.0 Site Redress Plan

2.1 Site Redress Plan Objectives and Considerations

This section provides an overview of the primary objectives and factors considered in developing the CFPP site redress plan. The overarching objective of the CFPP site redress plan is to provide reasonable assurance that redress carried out under the plan would: (1) result in the return of the site to an environmentally stable and aesthetically acceptable condition; and (2) be performed in a manner consistent with applicable federal, state, county, and local requirements. This objective furthers the purpose of site redress as contemplated by 10 CFR 50.10(d)(3)(iii) - to reverse, mitigate, or stabilize environmental impacts incurred during the conduct of limited work activities.

As detailed in Section 2.2 below, CFPP site redress activities are implemented commensurate with the extent of site modification resulting from LWA construction and associated preconstruction activities authorized by the DOE. Redress planning reflects appropriate consideration for applicable land use or zoning requirements of local, state, and federal agencies, and possible future use scenarios.

A primary CFPP site redress consideration arises due to the CFPP site being situated on Idaho National Laboratory (INL) site land that is owned by the DOE (Section 1.2 above). As such, CFPP LLC's occupancy and uses of the CFPP site are subject to specific terms and provisions stipulated in the most recent amendment to CFPP Use Permit No. DE-NE700065 (Reference 4-1) and associated Memorandum of Agreement (MOA) DE-NE700124 (Reference 4-2). The CFPP use permit includes provisions requiring CFPP LLC, as the permit holder, to restore the CFPP site to its "substantially original condition" in the event that CFPP site construction activities begin and subsequently are abandoned prior to operations.

Site restoration under the CFPP use permit provisions includes: (1) removal of improvements (e.g., structures, facilities, roads, etc.) and wastes or materials not owned by DOE, which were not originally present on the CFPP site; and (2) revegetation of impacted site areas with native flora. Under the provisions of the current CFPP use permit, proposed restoration approaches resulting in the post-restoration site condition differing in material respects from its baseline condition requires prior DOE approval in the form of an amendment to the CFPP use permit.

The CFPP use permit restoration provisions govern not only the LWA construction activities, but also preparatory site activities (i.e., preconstruction) that are prerequisite to or may be conducted in parallel with the LWA activities. Thus if CFPP site redress were to be employed, detailed redress planning would necessitate coordination between the NRC and DOE regulatory approval processes to ensure an integrated plan covering redress of the entire CFPP site.

In addition to the above considerations, detailed CFPP redress planning takes into consideration appropriate factors such as:

- potential environmental contamination that either pre-dates or is a result of site preparation and LWA activities
- potential liabilities associated with facilities or structures remaining following completion of the redress activities
- topographic approaches that accomplish the objective and preserve the potential of the site for future use
- site development features that enhance the value of the site for potential future use

Other considerations in development of the CFPP redress plan include the need to maintain appropriate controls to mitigate potential impacts of physical effects of redress activities. These controls are addressed in Section 2.3.

2.2 Description of Carbon Free Power Project Site Redress

2.2.1 Introduction

The CFPP site redress plan described in this section addresses redress of site impacts resulting from those activities for which NRC authorization is requested under the CFPP LWA. As a redress plan submitted pursuant to 10 CFR 50.10(d)(3)(iii), the CFPP site redress plan is not required to include redress of site impacts resulting from preconstruction activities. This notwithstanding, as discussed in Section 2.1 above, CFPP LLC's occupancy and uses of the CFPP site are subject to CFPP Use Permit No. DE-NE700065, which includes site restoration provisions governing not only LWA activities, but also preconstruction activities that are prerequisite to or may be conducted in parallel with the LWA activities.

To demonstrate appropriate consideration for the CFPP use permit site restoration provisions, this section summarizes the redress of certain preconstruction and other "non-LWA activity" construction impacts that would result as a direct consequence of redressing LWA activity impacts. A more detailed redress plan for preconstruction impacts is coordinated with the DOE and reflected in an amendment to the CFPP use permit, if warranted.

2.2.2 Initial Site Redress Activities - Planning and Regulatory Engagements

Pursuant to 10 CFR 50.10(g) and 10 CFR 52.91(b), CFPP LLC would begin redress activities as soon as practicable following: (1) a decision to terminate the LWA activities; (2) CFPP LLC withdrawal or NRC denial of the CFPP COL application; or (3) NRC revocation of the LWA. Implementation of the CFPP site redress plan would begin with detailed redress planning that would include:

- prompt and continuous engagements with the NRC staff and the DOE, as described further in Section 2.2.4

- other engagements with state (e.g., Idaho Department of Environmental Quality), local, Tribal, or other agencies/organizations as applicable
- development of a detailed scope and schedule designed to ensure the completion of site redress within the 18-month time frame specified in 10 CFR 50.10(g)

Between the permanent cessation of site construction and the start of site redress activities, CFPP LLC would maintain water quality, air quality, stormwater runoff, solid waste, and protection of critical ecological and cultural resources in compliance with approved permits and regulatory requirements. Actions to terminate, transfer, or obtain new permits, as applicable, would be conducted concurrently with planning activities.

2.2.3 Preferred Site Redress Method for LWA Activities

Since the CFPP LWA activities would take place within the areas of the RXB and RWB deep excavations, redress of the resultant impacts of those LWA activities would similarly take place in these same excavation areas. Except for degradable materials intended for temporary construction use (e.g., concrete formwork), CFPP LLC's preferred method of redress for the LWA activities would be to leave installed materials and components in place, and to cover them using original excavation material as backfill to the extent practicable. Degradable concrete formwork would be removed prior to backfill, and reused or disposed of at a permitted landfill or recycling facility.

Specific to the RXB and RWB subgrade rock remediation activity, CFPP LLC has determined the preferred redress method to be the only practicable option. This rock remediation effort involves permanent placement/injection of inert materials (e.g., grout and flowable fill) in RXB and RWB subgrade rock voids or fractures. There would be no practicable means of removing these materials, once placed.

The remaining LWA scope - RXB mud mat system and basemat embedded material/component installation activities - involves installation of inert materials as well as non-deleterious materials such as reinforcing steel bars, steel wire mesh, and waterproof membrane. With consideration for the quantities and characteristics of these materials and the local precipitation and groundwater characteristics of the CFPP site, there is no reasonable likelihood that they would produce significant leachates of environmental concern. For these activities, an alternative to the preferred redress method would be to demolish the installed materials, and to remove and transport the resultant debris for disposal at a permitted landfill or recycling facility. CFPP LLC believes that this alternative would have no significant benefit to offset its considerably greater environmental, worker safety, and economic implications.

Since the preferred CFPP redress method entails leaving materials and other improvements in place that were not present in the original baseline condition, prior amendment of the CFPP use permit is required. CFPP LLC would engage with the DOE prior to implementing the preferred method as described further in Section 2.2.4.

If the DOE were to not approve in-place burial of one or more of the installed materials or components, CFPP LLC would demolish them and remove and transport the resultant debris for disposal in a permitted landfill or recycling facility. The excavations and materials approved to be left in place would then be filled and covered, respectively, using original excavation material as backfill to the extent practicable.

2.2.4 Department of Energy Use Permit and Other Considerations

CFPP LLC's preferred method of LWA activity redress described above is subject to DOE approval under the provisions of the CFPP use permit. Prior to initiating site redress activities, CFPP LLC would initiate discussions with the DOE regarding the acceptability of leaving in place: (1) materials and components installed as part of LWA activities; and (2) certain to-be-identified structures, materials, and improvements (e.g., roads, sidewalks, and other disturbed areas) installed as part of preconstruction.

The preferred method of LWA activity redress would consequently entail the redress of impacts resulting from certain site activities not within the scope of CFPP LWA activities. Specifically, a major preconstruction activity that must be completed prior to beginning the LWA activities is excavation of the RXB and RWB deep foundations. The conduct of each of these preconstruction excavations requires the concurrent installation of an excavation wall shoring system. This system includes installation of worker safety tiebacks spaced appropriately in the excavation rock walls as the excavations are progressed to their final design depths. As described in Section 3.2.1 of the CFPP LWA application, the wall shoring system installation is "construction" for which NRC approval is requested separately from the CFPP LWA application in the form of an exemption request (Reference 4-4).

The RXB and RWB excavations (a preconstruction activity) and the excavation wall shoring system (a construction activity not within the scope of LWA activities) would be redressed in the same manner and as a direct consequence of redressing the LWA activity site impacts. That is, the excavation wall shoring system would be left in place in and on the RXB and RWB excavation walls and covered as part of the same RXB and RWB excavation backfill effort used to cover in-place the materials installed as part of LWA activities. As detailed further in Reference 4-4, CFPP LLC has determined that leaving the wall shoring system in place is the only practicable option. The acceptability of leaving in place the wall shoring system and backfilling the RXB and RWB preconstruction excavations would be included in CFPP LLC's discussions with DOE and if needed, reflected in an amendment to the CFPP use permit prior to initiating redress activities.

2.2.5 Final Site Redress Activities

Final CFPP site redress would include re-grading the redressed areas to conform to the surrounding land surface and to mitigate erosion from stormwater runoff. Areas that would have been contaminated (non-radiological) as a result of LWA activities or redress activities would be remediated in compliance with applicable laws and regulations. As required under the site restoration provisions of the CFPP use permit:

- Disturbed areas of ground made bare by removal of facilities, structures, or other improvements would be revegetated with native flora and appropriately maintained to support re-establishment.
- Remaining improvements would be surrendered in a safe condition, meeting applicable laws, codes, and regulations; upon surrender, title to such remaining improvements would pass to the DOE.

Upon completion of activities governed by the CFPP site redress plan, CFPP LLC would:

- provide required notifications to the appropriate federal, state, and local agencies.
- make the site available for inspection
- provide documentation that the NRC and DOE may require to confirm the satisfactory completion of the redress activities

2.3 Controls to Mitigate Impacts During Redress Activities

This section describes the controls employed to mitigate potential impacts of the physical effects of activities required to redress LWA activity impacts. Mitigating controls for CFPP site redress are substantially the same as those used to mitigate potential impacts of physical effects due to preconstruction and pre-COL construction activities (including the LWA activities described herein). These measures and controls are summarized in Section 4.11 and detailed in other Chapter 4 sections of the LWA environmental report provided as Enclosure 3 to the CFPP LWA application.

Measures and controls used to ensure environmental protection and regulatory compliance during site redress would include best management practices for the following:

- Noise Control
Section 4.8 of the CFPP LWA environmental report.
- Traffic Control
Section 4.8 of the CFPP LWA environmental report.
- Erosion and Sediment Control
Section 4.2 of the CFPP LWA environmental report.
- Air Quality Control
Sections 4.7 and 4.8 of the CFPP LWA environmental report.
- Visual Aesthetic Control
Section 4.6 of the CFPP LWA environmental report.

- Control of Potential Pollutant Sources (e.g., fuels, effluents, wastes, spills, and materials handling and storage)

Sections 4.2 and 4.8 of the CFPP LWA environmental report, which describe best management practices used to ensure protection of soils, groundwater, and surface water from accidental spills or releases of pollutants.

3.0 Financial Responsibility for Redress Activities

As the applicant for the CFPP combined licenses, CFPP LLC is responsible for providing the funding to redress the CFPP site in the event that LWA and prerequisite/concurrent site preparatory (i.e., preconstruction) activities are performed and construction is subsequently terminated, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC. Enclosure 1 of the CFPP LWA application provides information to demonstrate CFPP LLC's financial qualifications to carry out the specific work activities within the scope of the CFPP LWA application, including redress work activities if needed.

4.0 References

- 4-1 U.S. Department of Energy, "U.S. Department of Energy Use Permit No. DE-NE700065," February 17, 2016.
- 4-2 U.S. Department of Energy, "Memorandum of Agreement Between United States Department of Energy and Carbon Free Power Project, LLC," DE-NE700124, December 13, 2021.
- 4-3 Cardno, Inc., Prepared for Utah Associated Municipal Power Systems, "Phase I Environmental Site Assessment, UAMPS - INL Property, SE of Hwy 33 & Stage Rd, Arco, Idaho," May 27, 2020.
- 4-4 NuScale Power LLC, "NuScale Power, LLC Submittal on Behalf of CFPP LLC Carbon Free Power Project (CFPP) Combined License Application (COLA) Entitled 'Request for Exemption to Authorize Early Construction of CFPP Excavation Wall Treatments'," LO-145324, July 31, 2023.