

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: MFC Cathodic Protection

SECTION B. Project Description and Purpose:

Phase 1: Design

- Northwestern Corrosion Engineering (NCE) will conduct an evaluation of MFC's underground utilities, structures, EBR II, and soil conditions. NCE will take their findings and will design a Cathodic protection system for all MFC. Based on recent discussions with NCE the cathodic protection system will protect all MFC.
- The design phase will entail excavation of utilities line, in multiple areas, to determine the current corrosion status. Inspection of EBR II, at the base that is buried, will also be required. The EBR II project being handled by Scott Smith and Josh Kiel is going to excavate around the base of EBR II the spring of 2023 and the cathodic protection project will do their inspection at the same time. NCE will conduct their inspections and use the data collected in their design.

Separating the design from the construction will allow the project to better understand and gather all the fine details that will be required for execution. When design is complete in FY23 the project will then move into execution of the construction.

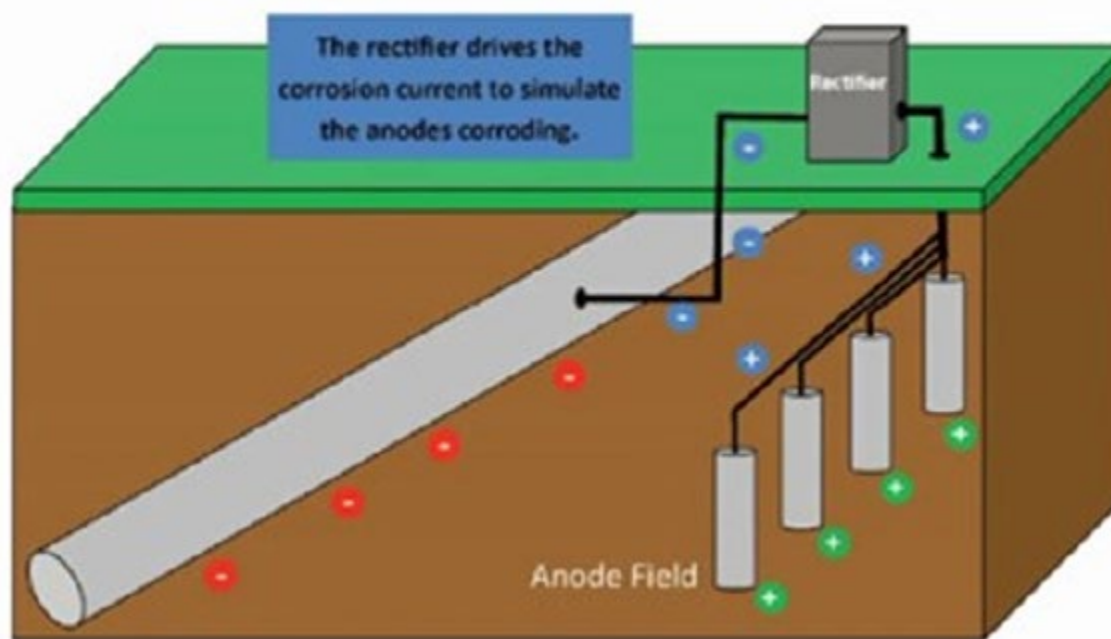
Phase 2: Construction

The design of the cathodic protection will be the deciding factor on the execution of the construction. The project is assuming the design will not encounter any unforeseeable issues or heavy corrosion with the underground utilities or with other structures inspected, and replacement of any items is not a part of this project.

- There will be excavation conducted to expose underground utilities & EBR II in multiple areas around MFC.
- The exposed metal objects will then be connected to grounding spikes, including EBR II.
- Installation of rectifiers are for the external power source used in the cathodic protection system. This will convert alternating current into direct current. This will allow current to discharge off the anode and onto the structure to prevent corrosion. The design will consider current electrical sources and will design the cathodic system to our electrical power grid/ power sources. This will minimize the amount of excavation, installation of electrical power, and duct banks needed for the rectifiers.
- There will need to be approximately 3 deep anode groundbed's drilled and installed. This consists of an 8 to 10-in diameter hole drilled to a depth typically between 350 to 450-ft. Anodes are then installed in the bottom portion of the hole and surrounded with special backfill material. The upper portion of the groundbed is filled with non-conductive material such as grout or bentonite.
- Below is an example of how a cathodic protection system is setup and works.

Depending on the design, methods for construction may change.

CATHODIC PROTECTION



SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Mobile equipment is expected to emit combustion products. Excavation and earthwork have the potential to cause fugitive dust.

Discharging to Surface-, Storm-, or Ground Water

The anode holes/groundbeds that would be drilled for the cathodic protection system are considered cathodic protection wells per IDAPA 37.03.09.010.13. Per IDAPA 37.03.09.010.13, a cathodic protection well is any artificial excavation in excess of eighteen (18) feet in vertical depth constructed for the purpose of protecting certain metallic equipment in contact with the ground (commonly referred to as cathodic protection).

Disturbing Cultural or Biological Resources

There is the potential for this work to impact soil and for project personnel to interact with various wildlife species. A nesting bird survey must be completed in compliance with the Migratory Bird Treaty Act prior to activities with the potential to impact biological resources. Nesting bird surveys are required from April 1st to October 1st.

Generating and Managing Waste

When wastes are generated, how they are disposed can adversely affect the environment. Managing wastes appropriately and responsibly and implementing recycling or reuse practices, where feasible, during project activities can reduce the potential impact on the environment.

Releasing Contaminants

When chemicals are used during the project there is the potential for spills that could impact the environment (air, water, soil).

Using, Reusing, and Conserving Natural Resources

Project description indicates materials will need to be purchased or used that require sourcing materials from the environment. Being conscientious about the types of materials used could reduce the impact to our natural resources.

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SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1)) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References:

B1.15 "Support buildings", B2.2 "Building and equipment instrumentation."

Justification:

B1.15 Support buildings. Siting, construction or modification, and operation of support buildings and support structures (including, but not limited to, trailers and prefabricated and modular buildings) within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible). Covered support buildings and structures include, but are not limited to, those for office purposes; parking; cafeteria services; education and training; visitor reception; computer and data processing services; health services or recreation activities; routine maintenance activities; storage of supplies and equipment for administrative services and routine maintenance activities; security (such as security posts); fire protection; small-scale fabrication (such as machine shop activities), assembly, and testing of non-nuclear equipment or components; and similar support purposes, but exclude facilities for nuclear weapons activities and waste storage activities, such as activities covered in B1.10, B1.29, B1.35, B2.6, B6.2, B6.4, B6.5, B6.6, and B6.10 of this appendix.

B2.2 Building and equipment instrumentation. Installation of, or improvements to, building and equipment instrumentation (including, but not limited to, remote control panels, remote monitoring capability, alarm and surveillance systems, control systems to provide automatic shutdown, fire detection and protection systems, water consumption monitors, and flow control systems, announcement and emergency warning systems, criticality and radiation monitors and alarms, and safeguards and security equipment).

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) Yes No

Approved by Jason L. Anderson, DOE-ID NEPA Compliance Officer on: 03/21/2023