DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

CX Posting No.: DOE-ID-INL-20-219

SECTION A. Project Title: Experimental Breeder Reactor (EBR)-II Modifications to Support National Reactor Innovation Center (NRIC)

SECTION B. Project Description and Purpose:

The mission of the National Reactor Innovation Center (NRIC) is to accelerate the demonstration and deployment of advanced nuclear energy. NRIC is a national program led by Idaho National Laboratory (INL) that enables collaborators to harness the world-class capabilities of the U.S. National Laboratory System. NRIC is designed to bridge the gap between research, development, and the marketplace to help convert advanced nuclear reactors into commercial applications.

In addition, the Materials and Fuels Complex (MFC) at INL is a world leader in innovative nuclear energy technology and is the hub of INL nuclear energy research. Activities at MFC support core research in nuclear fuels and cladding, radiation damage in core structural materials, chemical separations and fuel recycling, nuclear nonproliferation and nuclear forensics, space nuclear power and isotope technologies, and transient testing of reactor fuels.

To support the MFC and NRIC missions, INL needs to maintain effective nuclear Research, Development, Demonstration & Deployment (RDD&D) capabilities at MFC and to improve the availability of RDD&D facilities to meet customer demand. To meet these needs, INL proposes to develop advanced reactor demonstration capabilities at INL in the Experimental Breeder Reactor (EBR)-II Reactor Plant Building at MFC, building MFC-767. The proposed action refurbishes the EBR-II Dome to support potential future advanced reactor demonstration activities.

The EBR-II Dome was scheduled for demolition in 2019, but that same year INL began refurbishing the EBR-II dome to support programmatic research needs at MFC. The environmental impacts of repurposing and refurbishing the EBR-II dome were evaluated in environmental checklist (now called an Environmental Compliance Permit [ECP]) INL-19-019. Further modifications are now necessary to allow the facility to fulfill its on-going mission before decisions can be made and implemented for future proposed RDD&D activities. Because a specific advanced reactor demonstration project has not been designed or fully developed, the physical and operational changes to convert EBR-II for a specific demonstration are beyond the scope of this ECP. If a demonstration project is developed and determined to be feasible, additional analyses in compliance with the National Environmental Policy Act (NEPA) will be performed to evaluate the physical and operational changes needed and to disclose the environmental impacts associated with the demonstration. Separate ECPs or other relevant NEPA evaluations will be submitted for RDD&D projects proposed in the future.

The scope of this ECP covers only those modifications to EBR-II necessary to prepare the facility to support potential future reactor demonstrations aligned with the current mission of NRIC and INL. Modifications not discussed herein require revising this ECP, unless such modifications are necessary for and connected to future demonstration projects or proposals, in which case project specific review under NEPA is required. See 40 CFR § 1501.9(e)(1) for the definition of “connected actions.”

<u>Containment Dome</u>

The EBR-II dome serves as the primary building block for re-establishing advanced reactor testing capabilities at INL. The dome is about 80-ft in diameter by 45-ft tall and is constructed of 1-in. steel plating with a 1-ft thick reinforced concrete inner structure. To support the needs of potential future demonstrators, new containment dome penetrations and a modified equipment hatch are needed. Penetrations will be grouped to the extent practical to minimize the total number of locations. Penetrations will consist of both mechanical and electrical and are anticipated to range in size from small (~1” nominal diameter) to large (24” nominal diameter or larger). The new penetrations are anticipated to be similar in size to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME BPVC) Section VIII requirements, however some variance may be necessary.

On large diameter pipe penetrations with attached piping (e.g., a cooling system), bellows expansion joints are proposed to allow the piping system to act independently of the containment dome in order to reduce pipe stress and likelihood of pipe rupture during a postulated seismic event.

To add a new penetration to the containment dome, concrete must be removed, rebar cut, and a hole cut in the steel shell. The concrete must be removed far enough beyond the welding location of the new penetration to avoid overheating the remaining concrete and potentially igniting the joint filler between the concrete and steel shell.

In addition, the original EBR-II hatch was destroyed during D&D operations and a portion of the frame and vessel reinforcement was removed. Therefore, the hatch needs to be repaired or replaced. The proposed internal dimensions of the modified hatch opening are up to 13 × 15.5 ft.

To minimize disturbing the CERCLA boundary underneath the operating deck, the new hatch reinforcement starts at the height of the bottom of the existing hatch, which is about level with the operating deck. However, some disturbance of the CERCLA boundary will likely be necessary. The bottom of the new hatch opening will be above the operating floor of the containment

Removable platforms will be used to facilitate installation of and removal of equipment. Hydraulic moving systems may be utilized during equipment movement.

Equipment lifting and handling is necessary inside the EBR-II containment dome, but most portions of the existing polar crane were irreparably damaged during the D&D efforts. As a result the existing polar crane may be repaired or replaced

Ladders, platforms, and catwalks will also be installed, if needed, to give access to equipment mounted to the interior walls of the EBR-II containment (e.g., air handling units for the dome cooling system).

Yard Area

Various items and operations need to be located outside the containment dome to support potential future reactor demonstrations. The major items are cooling equipment, ventilation and mechanical equipment, reactor loading equipment, demonstrator equipment, batteries, and equipment staging. Concrete pads or block enclosures for these areas will be installed. Equipment staging areas will be graveled. The concrete pads may range in thickness up to 3 ft. The proposed layout of the yard area and concrete pads is shown in Figure 1.

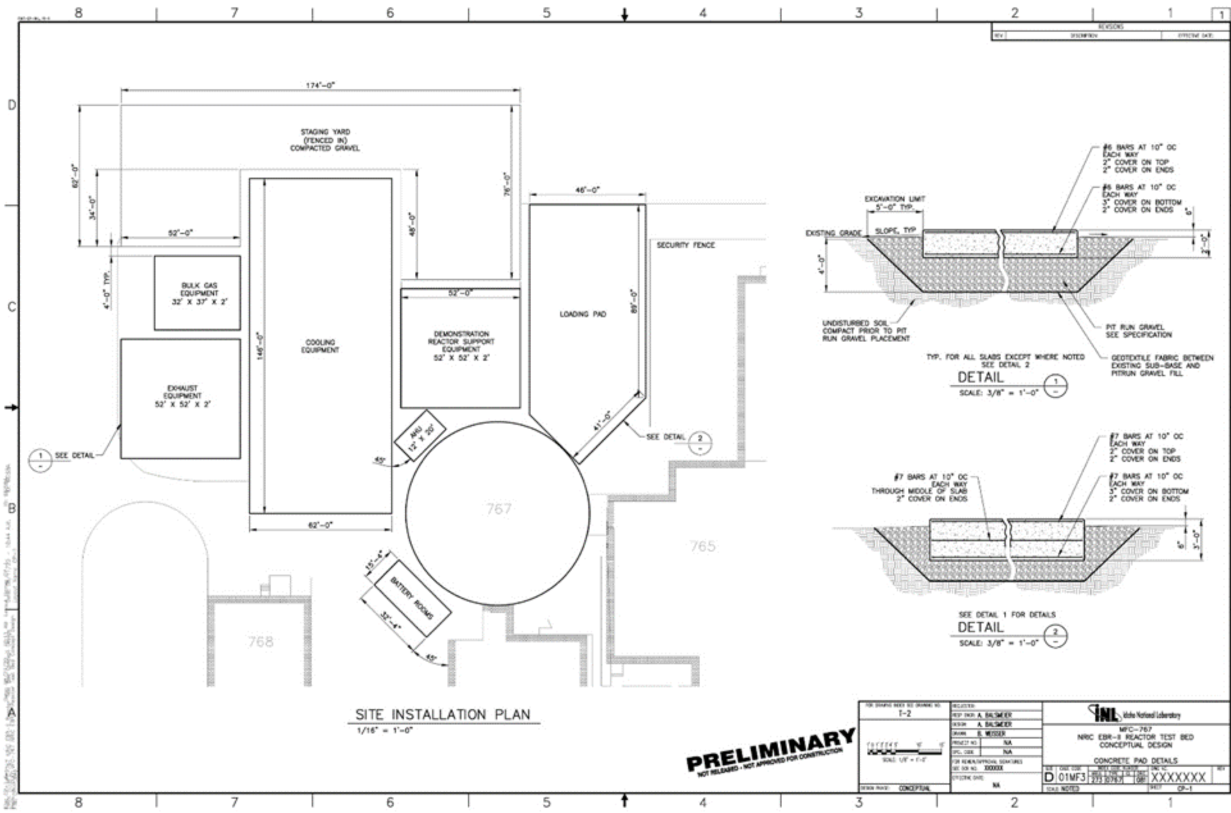

Figure 1. Yard area layout for EBR-II.

Mechanical Systems

Decay Heat Removal

The EBR-II cooling systems are not intended to be required for decay heat removal of a proposed future demonstration reactor. While the EBR-II containment dome can handle anticipated decay heat produced by a demonstration reactor, the ability of any future demonstration reactor to withstand its own decay heat will be considered in the NEPA evaluation for any proposed demonstration.

Cooling Systems

The proposed heat rejection and cooling system consists of a central plant with two separate systems—1) a chilled water and glycol system, and 2) a thermal fluid (e.g., Dowtherm Q) based heat transfer fluid system. These systems will have cooling capabilities in the Mega-Watt range. The chilled water and glycol system maintains air in the dome below 40°C. The thermal fluid heat transfer system gives a more direct cooling for a proposed demonstration reactor, although not as the reactor primary coolant. This purpose of this system is to supply cooling thermal fluid at a specific flow rate and temperature to the heat rejection equipment of proposed reactor demonstration modules. Model images of the cooling system are shown in Figures 2 and 3.

The containment dome air cooling system consists of two 300-ton air-cooled chillers supply chilled water to air handling units (AHUs) inside the containment dome.

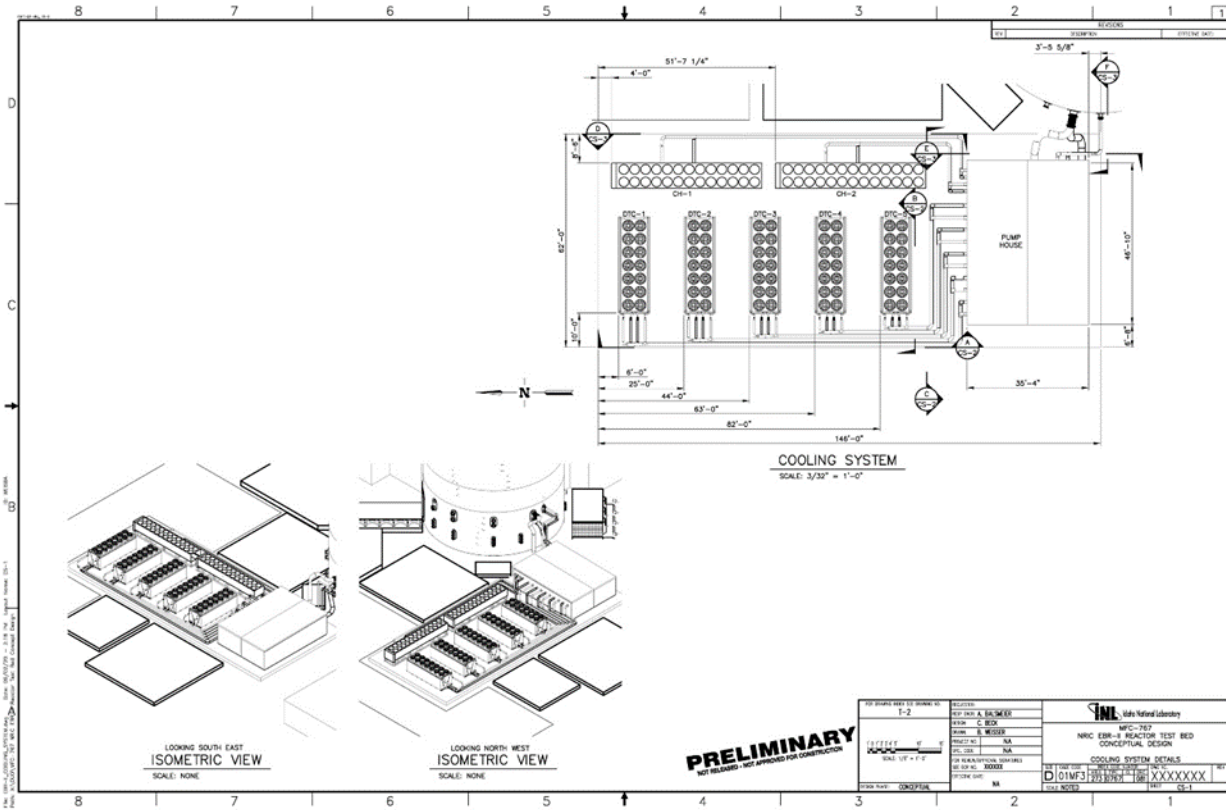

Figure 2. Cooling system details in yard.

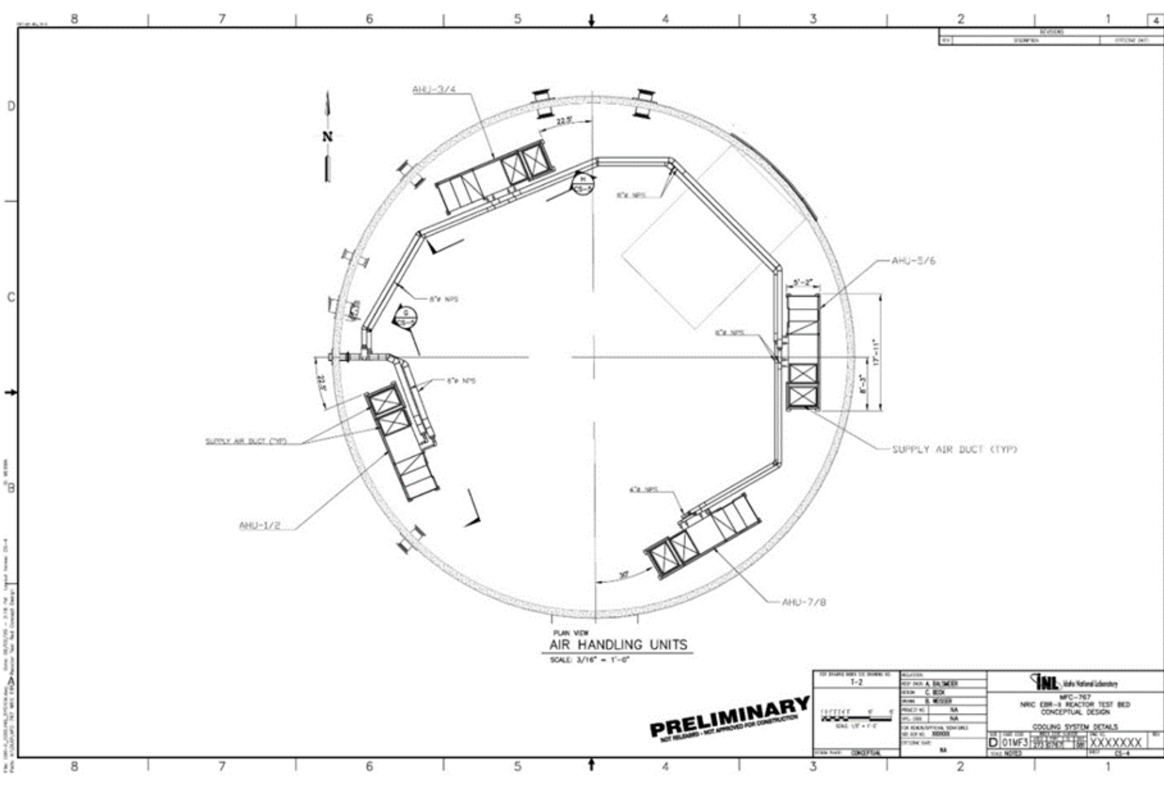

Figure 3. Cooling system inside the EBR-II dome.

The Dowtherm system is anticipated to use adiabatic coolers. An adiabatic cooler is an induced draft fluid cooler that uses wetted fibrous pads to precool ambient air. The system piping inside the EBR-II containment will be installed and evaluated in appropriate NEPA analyses when a given reactor requiring its use is proposed. Piping and pumping capabilities outside of the containment will be installed to support fluid transport of the cooling systems.

Pump House

The proposed pump house is a modular, prefabricated building comprised of two modules having overall dimensions of 42 × 35 x × 14 ft and contains the primary and secondary pumps for the chilled water and glycol and thermal fluid cooling systems. All pumps are piped and wired at the manufacturer with the necessary piping, valves, fittings, supports and hydronic specialties, and electrical power connections to variable speed drives and pump motor controls. An electrical power switchgear panel that is ready to accept a single-point power connection will be located on the outside wall external to each pump house module. Three chilled water fan coil units with electric heaters may be installed.

Water Supply

Water supply to the cooling system will be provide by connecting to a nearby existing water main. A sketch of the water supply is shown in Figures 4 and 5.

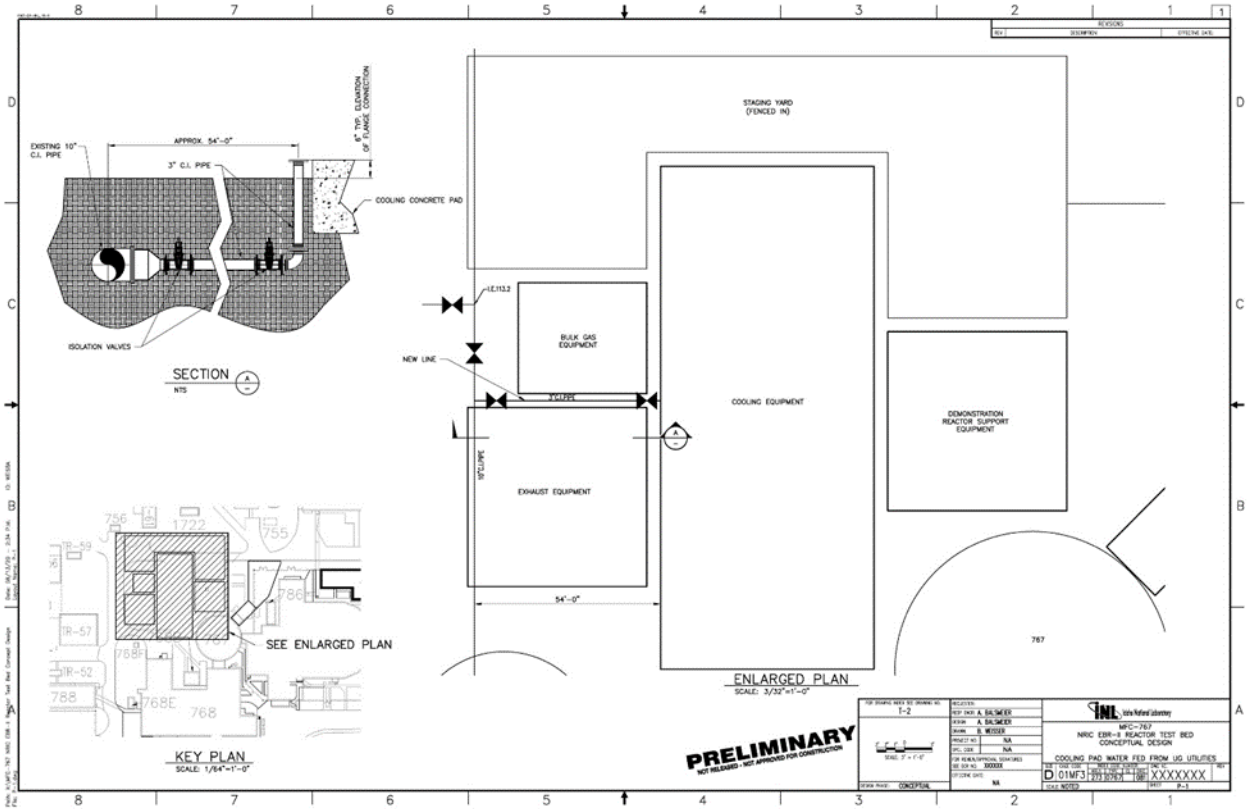

Figure 4. Cooling equipment water connection.

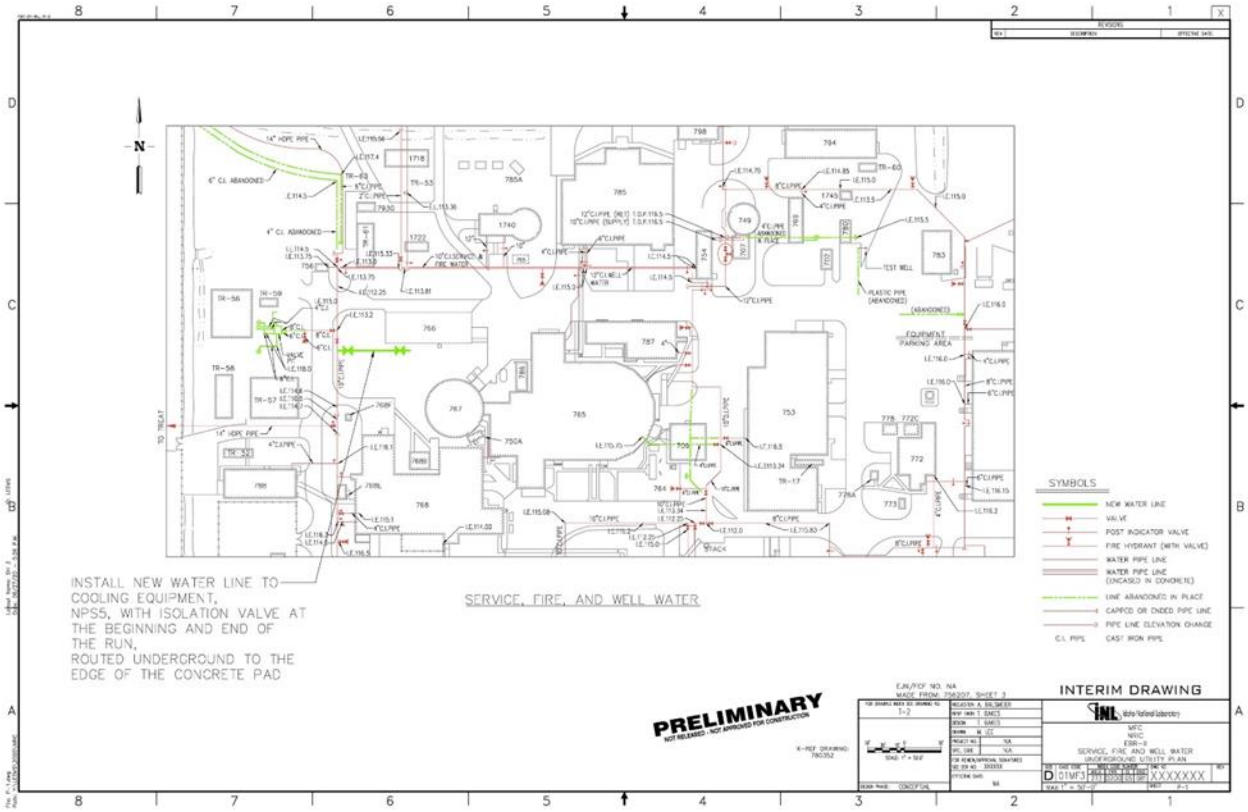

Figure 5. Underground utility plan.

<u>Ventilation</u>

A ventilation system to maintain the containment dome atmosphere during various operations will be installed. The ventilation system includes supply air AHU exhaust fans, HEPA filters, an exhaust stack, and an exhaust stack monitoring system. A preliminary system layout is shown in Figures 6 and 7.

Outside air will be supplied by a standard industrial make up air unit, which heats, cools, and filters incoming air. Supply enters the make-up AHU on the northwest side of the containment dome. Insulated ducting connects the AHU to a penetration located above the unit. Supply and exhaust fans with variable speed control (using variable frequency drives) deliver a more refined control of the containment differential pressure than can be achieved solely through using valves and dampers and bypass. Volumetric flow probes installed in strategic locations throughout the system ducting serve as the primary control instrument for the system. The control system maintains constant flow regardless of the potential filter loading and differential pressure across the filters.

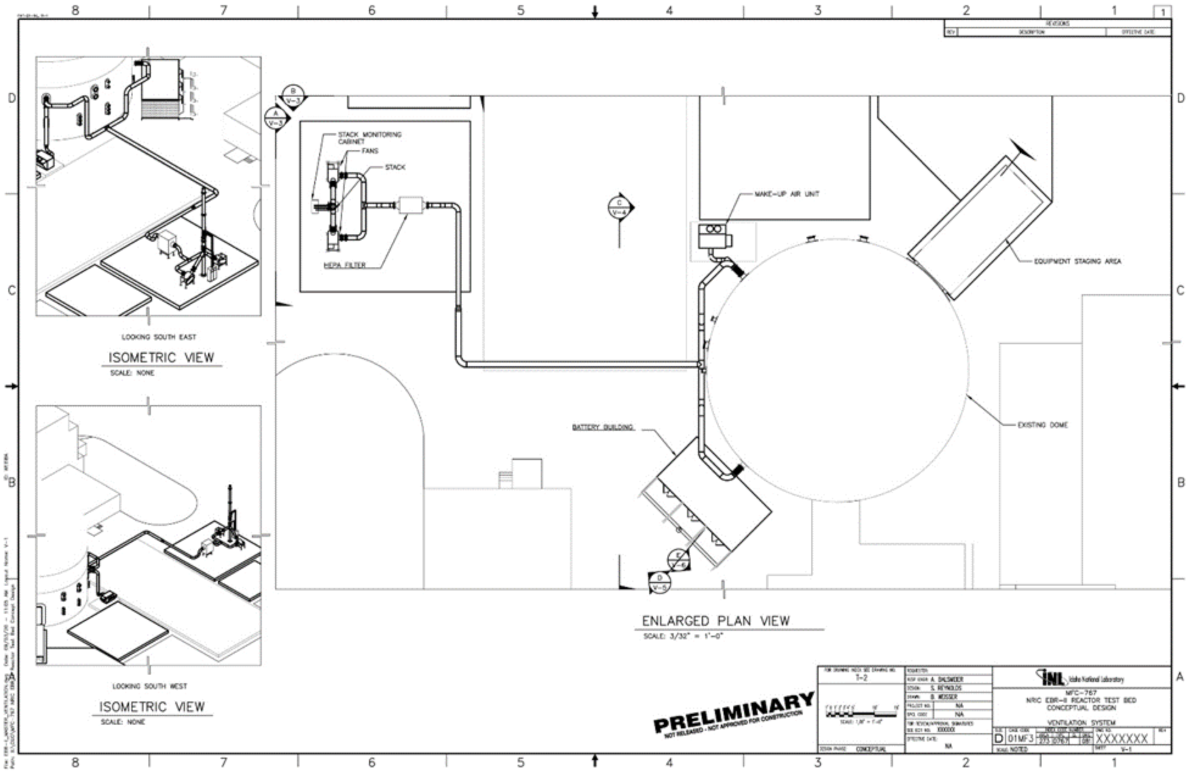

Figure 6. Ventilation system shown in the yard area.

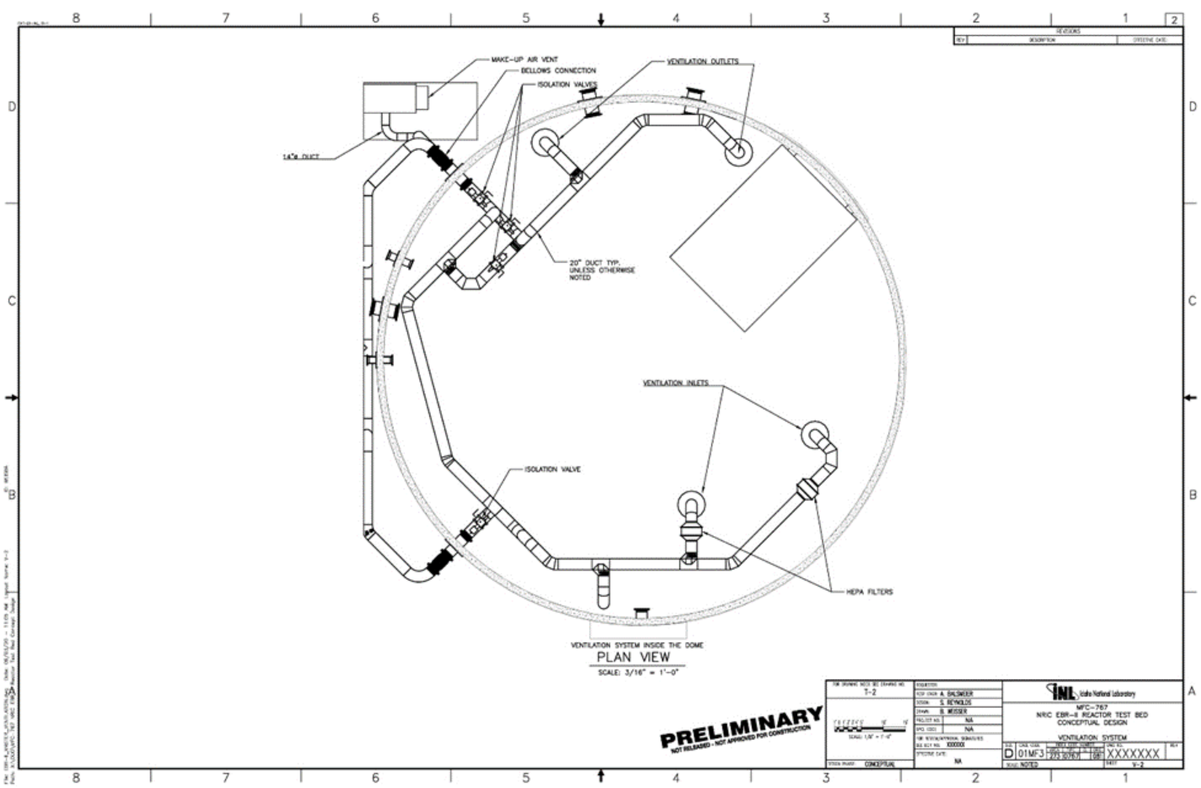

Figure 7. Ventilation system inside containment dome.

<u>Stack and Monitor</u>

The proposed stack has an internal diameter of 15.25 in. and is about 50-ft tall. The approximate number of stack diameters from the top of the stack breach to the sampling nozzle and the test ports is 12.4. The layout of the stack, fans, monitoring cabinet, and HEPA filter is shown in Figure 8. Exhaust Fans will be located just below the stack. The fans will be controlled by a Variable Frequency Drive (VFD) and supply 1000 to 2000 CFM out of the stack.

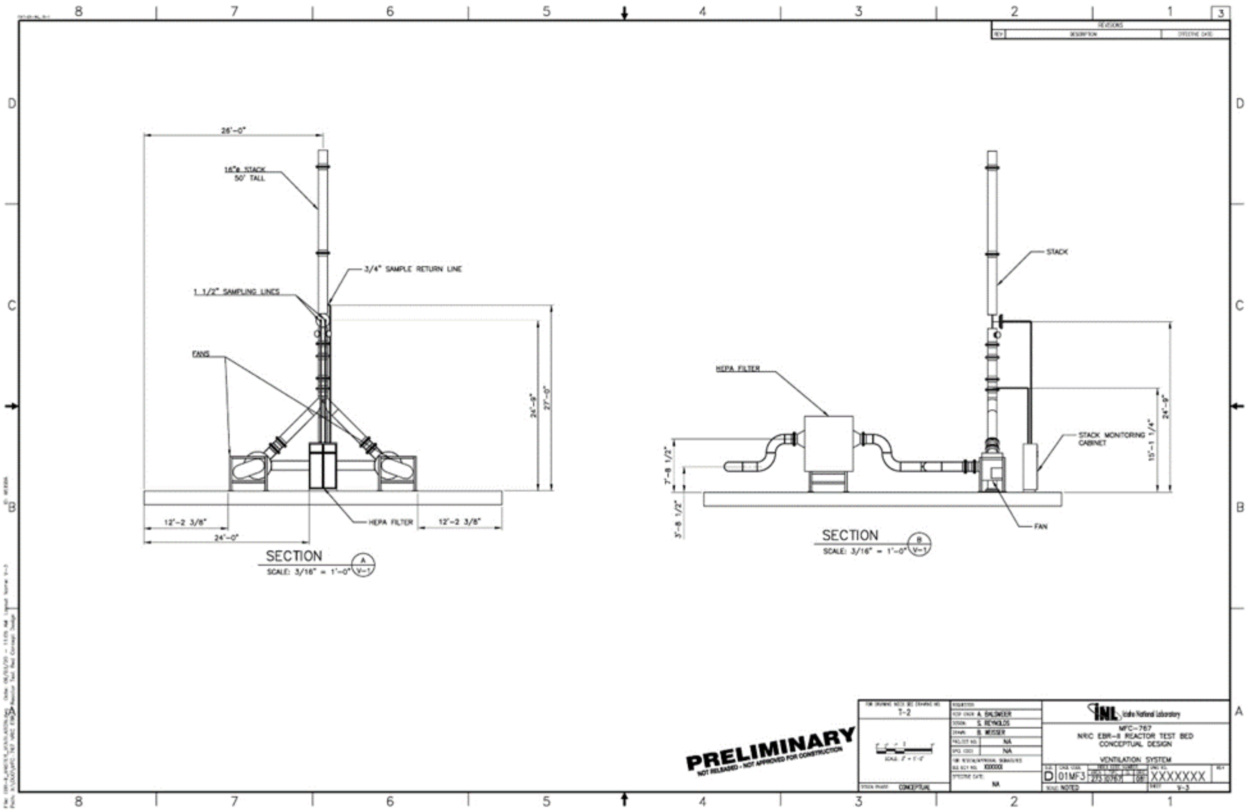

Figure 8. Stack and monitor layout.

Exhaust enters the fans after passing through a single stage of high-efficiency particulate air (HEPA) filtration with a minimum efficiency of 99.97% for particles with a median diameter of 0.3 µ. The expected flow rate is between 1500 and 2000 cfm with one duty fan and one standby fan. The stack emission sampling system incorporates a continuous record air sampler for particulate radionuclides, a flow monitor, and a continuous alpha monitoring device with alarm functions. If further filtration is required, it will be evaluated as part of potential future demonstration system design. There is also the option to include a second stage of HEPA filters upstream of the exhaust fans on an outdoor skid.

The proposed ventilation system also utilizes two Flanders G-series HEPA filters in parallel located within the EBR-II building. These filters are rated for 1000 CFM each. The G-Series bag-in/bag-out filter housing allows a single filter element (prefilter, HEPA filter, or gas adsorber) to be installed in a low CFM ventilation system. These filter housings are designed for particulate filtration and gas filtration. Air is supplied to and exhausted from the G-Series filter housing through round inlets and outlets that can be connected to the piping or ducting of a proposed demonstration reactor.

The over/under pressure protection system is a dual acting rupture disk on an existing 20 in. penetration. Calculations show that for a temperature increase of 5°F/min or a pressure increase of 0.1 psig/min a flow rate of between 2500 and 3500 CFM would be needed to relieve the building pressure. A 20 in. pipe can easily support this flow. Several penetrations in the EBR-II containment dome can be used for piping over/under pressure protection. Over pressure protection is currently planned to be piped into the ventilation exhaust system. However, further evaluation will be performed and documented in subsequent NEPA analyses for any future proposed reactor to determine if further filtration or ducting will be required, prior to venting out the exhaust stack.

Gas Supplies

Compressed air is available for use in MFC-768, located adjacent to EBR-II. The project anticipates an NPS 1 line will be tapped off the existing system just downstream of the system dryers and accumulators and will be piped into one of the planned NPS 1 penetrations as shown in Figure 9. The system will be branched from there, as necessary, to support future demonstration reactors and the EBR-II facility equipment.

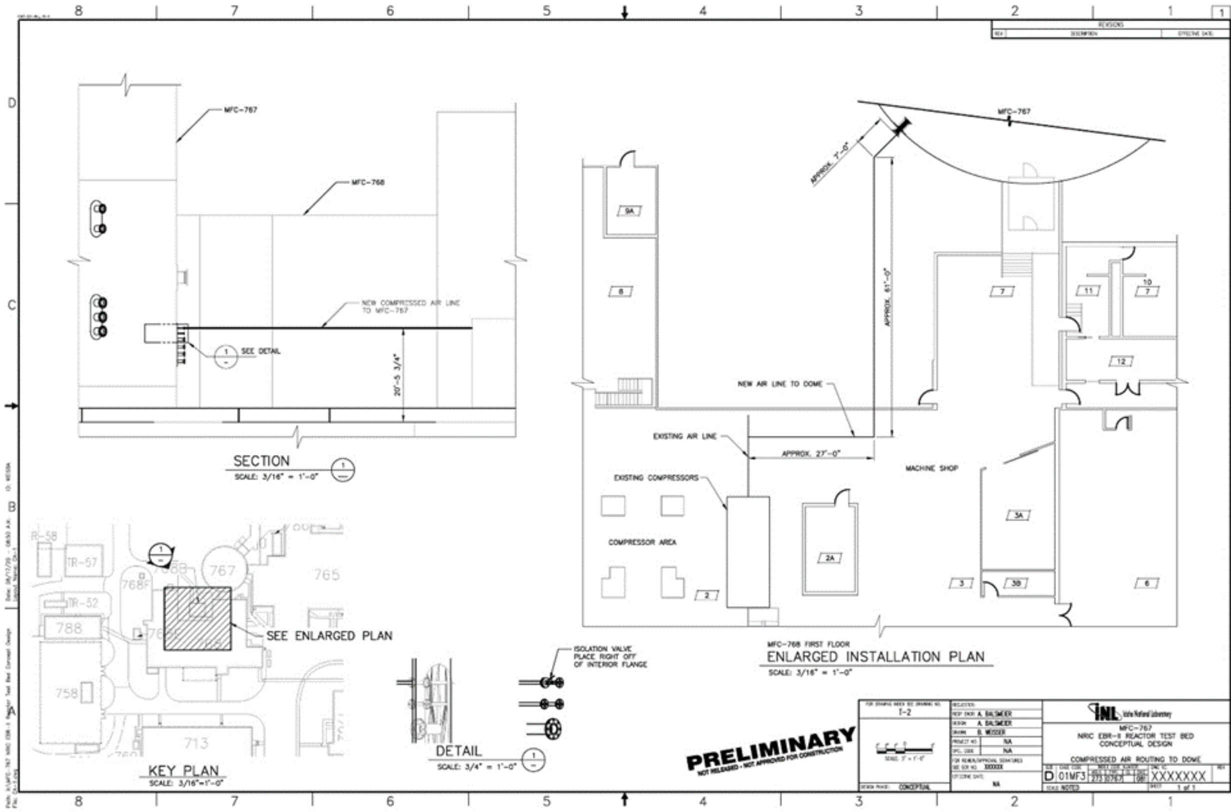

Figure 9. Compressed air routing from MFC-768 to the EBR-II dome.

Future reactor demonstrators may need bulk compressed gases such as nitrogen or argon. Provisions have been made for bulk gas use as part of the EBR-II modifications, including three NPS 1 penetrations into the dome, and a 32 x 37-ft concrete pad in the yard area. However, bulk gas storage will not be installed as part of the initial modifications. Small quantities of compressed gasses can be supplied using gas bottles or small portable dewars.

Electrical and I&C Systems

Normal Power

The current temporary power supply to the EBR-II dome is fed from the 2.4 kV switch gear, which has a total ampacity rating of 1200 A. This is insufficient to power the necessary equipment in the EBR-II yard. The EBR-II cooling system is anticipated to need between 2000 - 2500 amps at 480 V of electrical power to operate the equipment. A substation will be installed in the yard area between the cooling equipment pad and the ventilation equipment pad or on the ventilation pad. Schematics of the substation are shown in Figures 10 and 11.

Power to the substation will be supplied from the medium voltage switch gear (13.8 kV) on the turbine deck of MFC-768 as shown in Figures 12 and 13. The proposed action routes 15 kV cables from the turbine deck in conduit down through the floor, through the mezzanine, penetrating the main floor into the cable tunnel, and into cable trays. The cable follows existing cable trays until exiting the tunnel into existing duct bank to EM-12. From EM-12 the new duct bank will need to be about 20 ft to the west, where the new substation will be installed. From the substation, conduit can be routed to the necessary power panels, disconnects, and other components. The largest loads anticipated for the substation are the chillers for the containment dome air cooling system.

Previous modifications to the EBR-II dome installed 400 A, 480 V service for base loads inside the dome, standard lighting, and electrical outlets. This electrical service will power the AHUs for containment dome air cooling, the polar crane, and other miscellaneous equipment needed during potential future reactor installation. The electrical service is sufficient since no other loads inside the containment would be running concurrently with the AHUs.

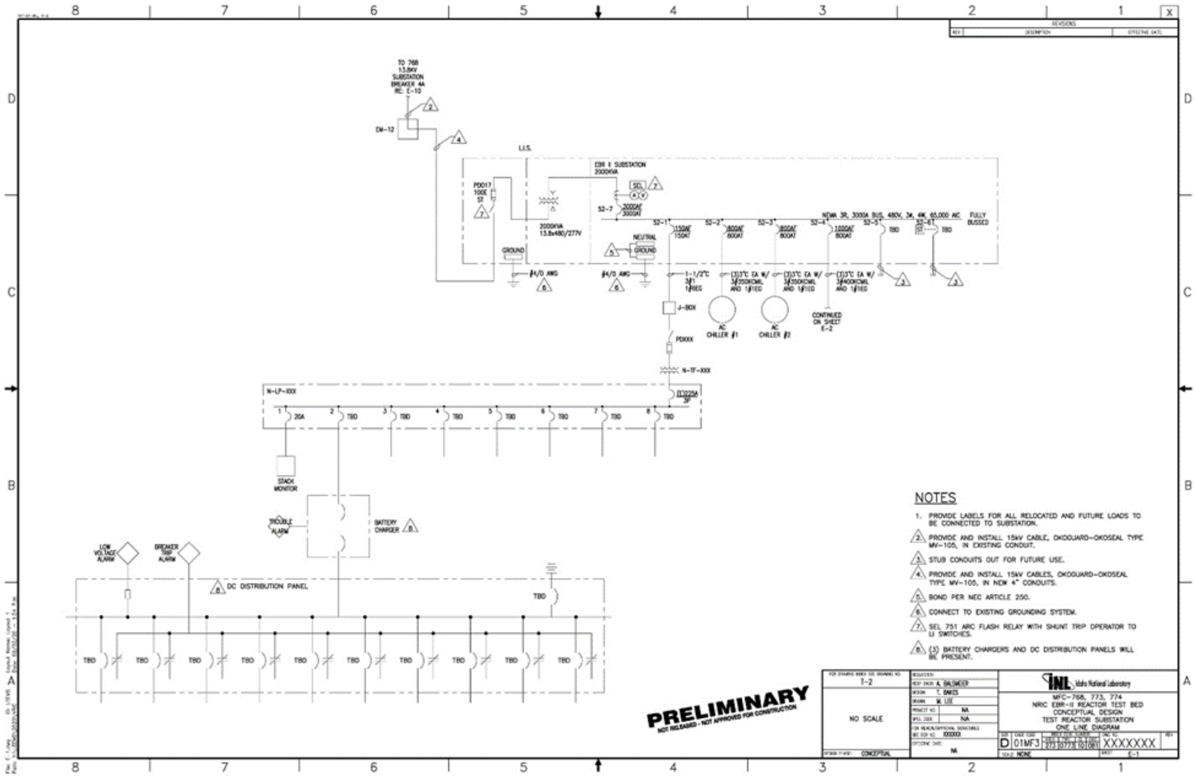

Figure 10. EBR-II substation diagram.

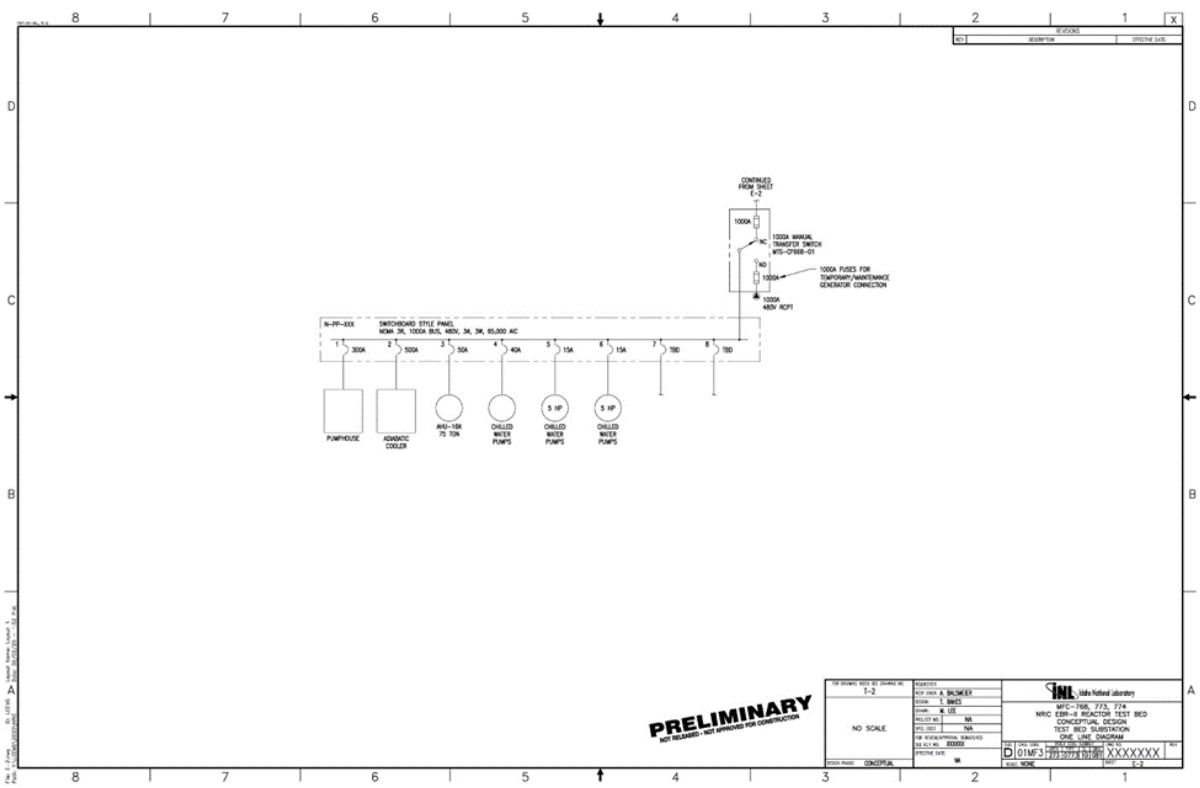

Figure 11. EBR-II substation diagram continued.

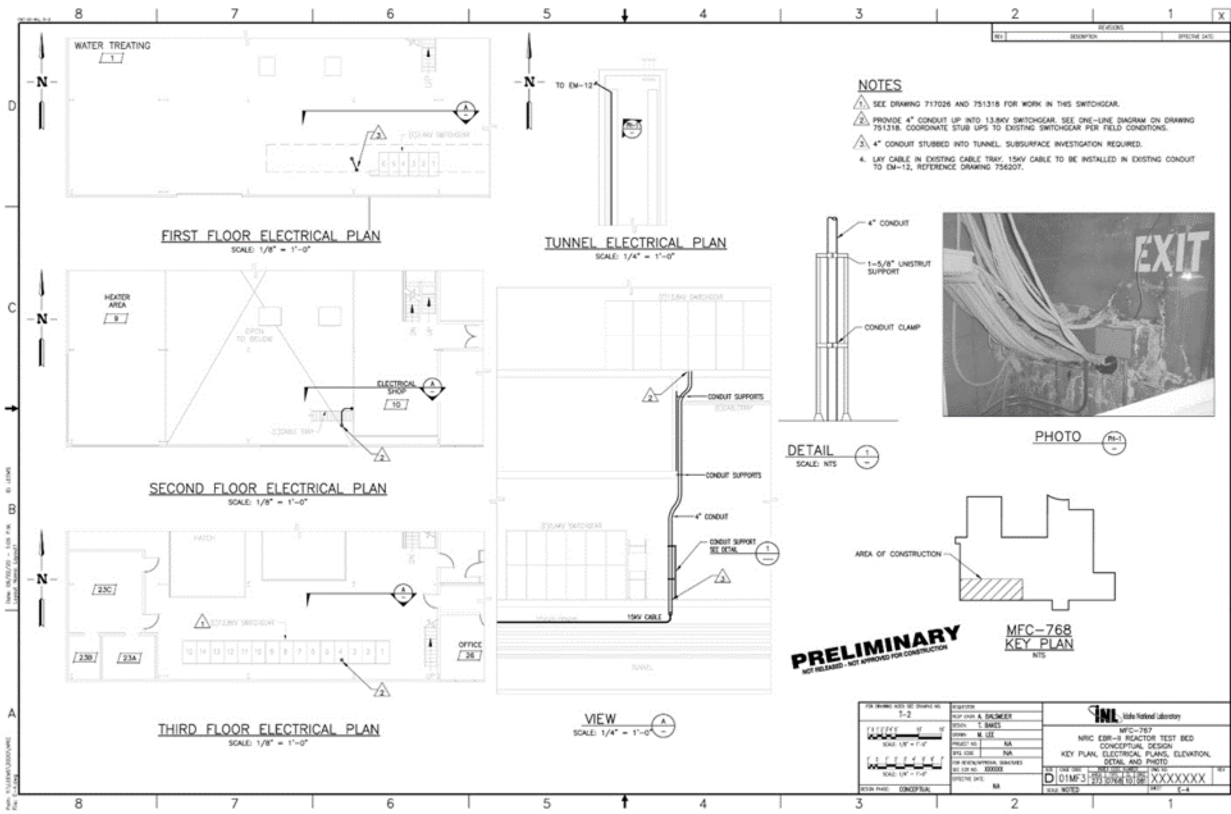

Figure 12. Electrical system modifications for EBR-II.

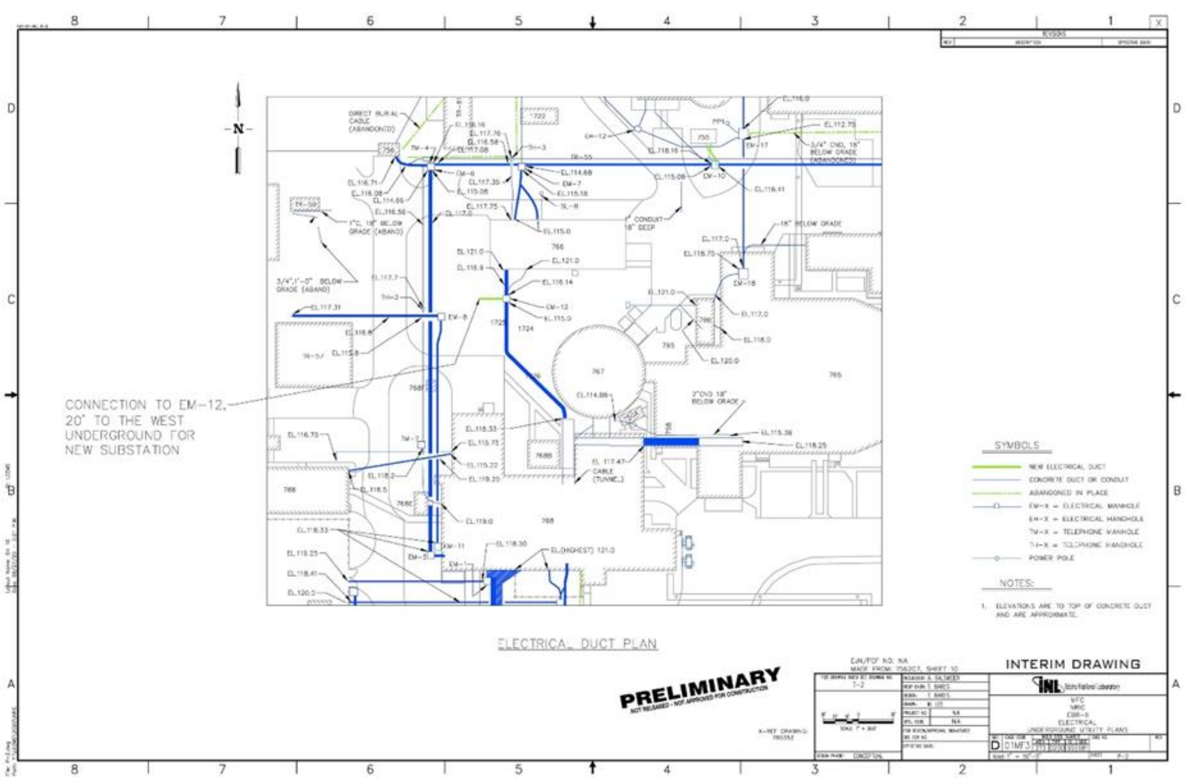

Figure 13. Underground electrical utility plan.

Non-Safety Backup Power

Non-safety, backup power supply is not anticipated to be necessary to support the EBR-II mission. Rather than design and install back-up generators, a connection to the main cooling system equipment (thermal fluid coolers and pumps) has been included in the proposed design modifications. With this design, a demonstrator that desires continuous electrical power, would have the option of supplying a generator or utilizing the existing connections.

Safety Backup Power

The proposed action anticipates that a limited safety-class electrical power supply will be needed or required for potential future reactor operations. This system consists of multiple trains of battery banks and a concrete/block enclosure to house the batteries. The proposed action includes a new battery building. The battery building will be a simple concrete block building on slab with a concrete roof. Power will be supplied from MFC-768 to the building for charging the batteries and for lighting and environmental controls. Mini-split heating and cooling units with temperature feedback are proposed to be installed on the roof to maintain environmental conditions required for battery operation. Figure 14 shows a preliminary schematic of the battery plan.

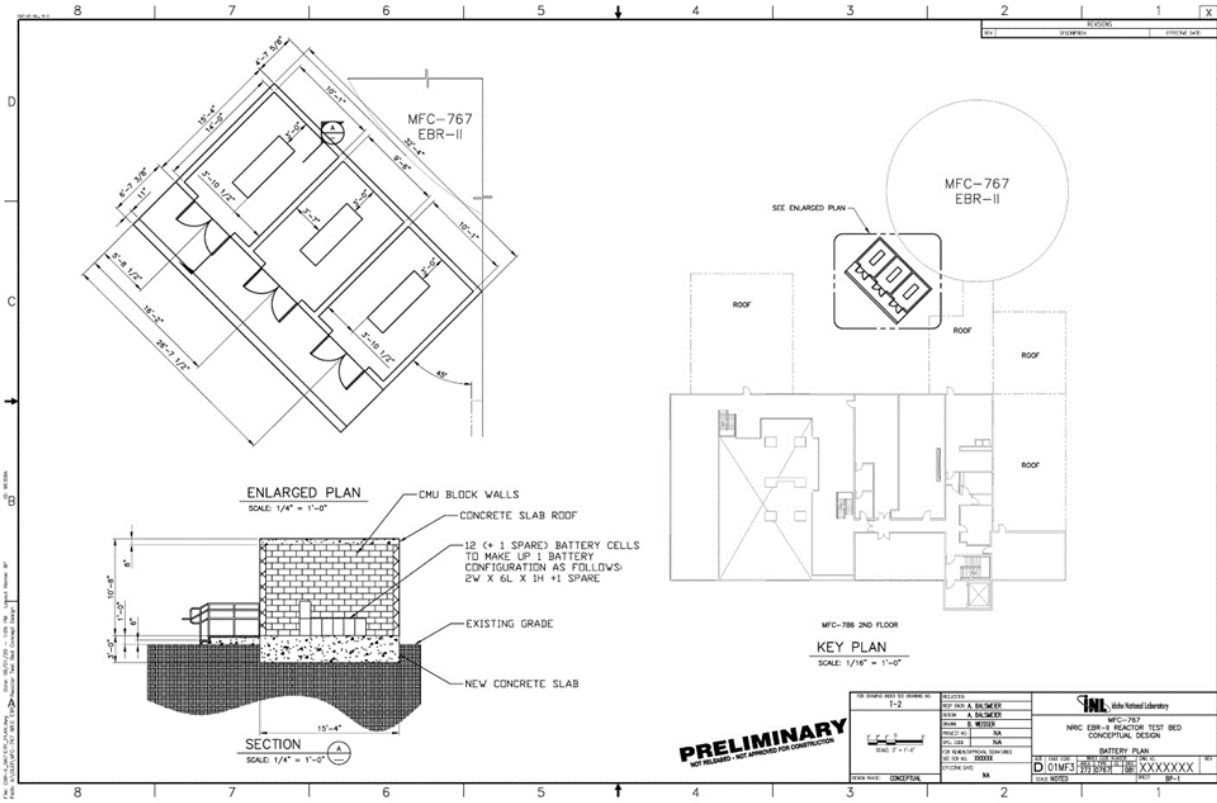

Figure 14. EBR-II battery plan.

Cathodic Protection

Prior to D&D efforts, the EBR-II containment dome had a cathodic protection system located underground and attached to the dome structure. This is a system that protects metal structures from corrosion. The system has been out of service and not maintained for several years. The current functionality of the remaining components are unknown. If the system is needed for future capabilities, it will likely need to be re-built. If it is determined that the cathodic protection system is needed in the future, activities to re-build or restore the system will be subject to additional NEPA analysis.

Control Room and Instrumentation and Control (I&C)

The proposed modifications include locating a control room in MFC-768, just outside the EBR-II containment dome, see Figure 15. Actions necessary to renovate this space into a control room are listed below:

- Refurbish the roof with insulation and a waterproof membrane
- D&D out of service equipment
- Level the floor to the highest obstruction, or install a false floor
- Frame new walls on the south and east side of the room
- Insulate the exterior walls on the north and west side of the room and cover with sheet rock
- Install flooring, or install false floor
- Route conduit from the control room to the electrical penetrations
- Route conduit and fiber optic cable from the control room to the PFCN connections in the power plant
- Install general telecommunications connections to the room (phone, and INL Intranet)
- Install operator workstations (computers separate from the control system)
- Install furniture (operating consoles, monitor mounts, tables, chairs, etc.)
- Install a service window to allow communications with control room personnel without entering the control room.

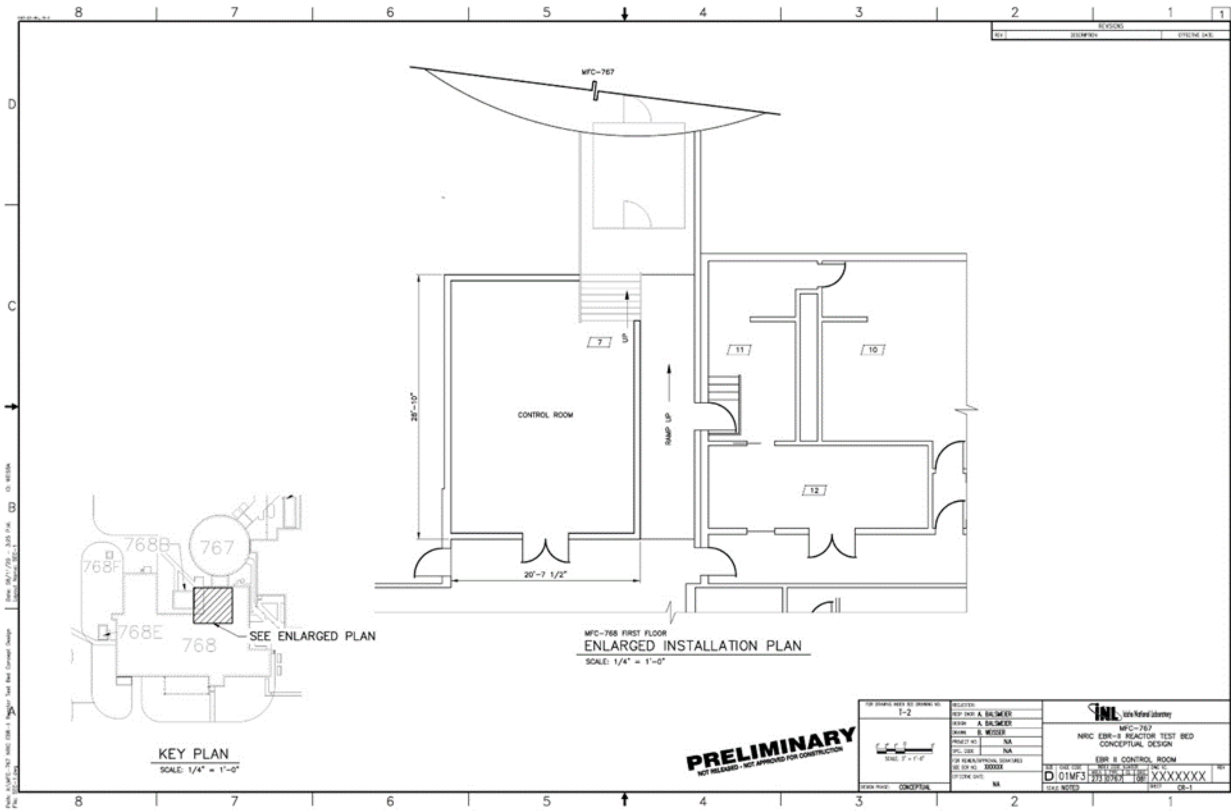

Figure 15. EBR-II control room.

Proposed modifications include installing a programmable logic controller (PLC) to supply operator interfaces for controlling the dome ventilation system, isolation valves, and future reactor cooling system. An oxygen monitoring system will also be connected using the same PLC or a stand-alone PLC using the MFC Private Facility Control Network (PFCN). The PLC will be located in the control room with the wires from each monitor passing through an electrical penetration and following conduit back to the control room for termination in the PLC.

Network

The MFC PFCN can be used to transmit data internal to INL and has provisions for transmitting data through multiple firewalls and demilitarized zone (DMZ) network to outside entities. To connect to the MFC-PFCN and data transmission beyond the PFCN, network cabinets will be installed as necessary. In addition, a controlled storage segment and routers will be installed.

Fire Protection

The proposed modifications to EBR-II are planned to support a wide variety of advanced reactor concepts, many of which may include reactive materials (e.g., sodium) as design components which limits the options for the fire protection system. MFC fire protection engineering is evaluating various fire suppression systems. If an effective option can be identified, it will be pursued. Various reactors at MFC have operated in the past without active fire suppression systems for the same reasons discussed here. If an active fire suppression system is determined to be infeasible, hazardous, or ineffective, an evaluation justifying the position will be completed and submitted for approval by the INL Fire Marshal and DOE. In this situation, a fire detection system would be pursued as the next most effective strategy for mitigating fire hazards. These types of systems give early detection capabilities and allow for response while the fire is in the incipient stages. Along with other controls, such as non-combustible facility construction, fire barriers, and combustible loading program, fire detection systems help provide an equivalent means of protection. Examples of fire detection systems are: smoke detection, heat detection, VESDA, and flame detectors. Each of these fire detection systems is a viable option and has positive features and limitations that will be further evaluated in the fire system analysis if an effective suppression system cannot be implemented. A fire protection system that is compliant with DOE-STD-1066 will be installed. This ECP will be revised prior to making a decision to install a fire suppression system or detection system to evaluate the environmental impacts of proposed systems and detection equipment.

Security

Future reactor demonstrations in EBR-II are limited to using fuel having an enriched uranium content of 19.75% or less. With this limitation in place, EBR-II will be a safeguards category 4 facility. The facility must have locked doors and must control access to authorized individuals only. A key card access will be installed on the personnel doors and a simple pad lock will be placed on the hatch. Access control will be implemented in the breezeway between MFC-768

(Power Plant) and MFC-767 (Containment Dome). There are already connection points to the MFC security systems in MFC-768, so the conduit runs, and connections will not be extensive.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Using the EBR-II containment dome to demonstrate future reactors creates the potential to emit radionuclides into the environment. Subpart H of the National Emissions Standards for Hazardous Air Pollutants requires that a sampling probe be located in the exhaust stack in accordance with criteria established by the American National Standards Institute/Health Physics Society Standard N13.1-2011. The standard requires that the transport of aerosol particles from a sampling nozzle to a collector or analyzer takes place in such a manner that changes in concentration and size distribution of airborne radioactive materials are minimized within the constraints of current technology. The monitoring system needs to be placed in close vicinity to the stack to minimize losses in the transport lines.

This ECP does not cover emissions from potential future projects. The proposed new stack is designed to meet the Subpart H ANSI standards in preparation for potential future emission. Emissions from projects that would have their own NEPA evaluation. The new stack will be designed in accordance with the Nuclear Air Cleaning Handbook and applicable SMACNA standards. Stack exit velocity of at least 3000 ft3/min is recommended by the Nuclear Air Cleaning handbook to avoid downdraft from winds up to 22 mph, to keep rain out, and to keep condensation from draining down the stack.

Leak testing and pressure testing will be completed following modification of the EBR-II containment dome. The personnel door and equipment hatch door implement features that allow isolated leak testing to be performed by using a double seal system with a leak test port between the two seals. The MFC compressed air system does not have sufficient capacity to perform the pressure tests and leak tests in a reasonable amount of time, so portable industrial air compressors will be used to reduce the time needed to pressurize the system for these tests.

Disturbing asbestos containing building materials has the potential to contribute to air emissions.

Project activities have the potential to generate fugitive dust. All reasonable precautions will be taken to control fugitive dust. If dust control methods are required, the date, time, location, and amount/type of suppressant used must be recorded in the project records. Personnel are responsible for working with the Program Environmental Lead to determine if any permitting requirements apply to generators and other equipment and, if necessary, obtaining the permit and maintaining a file of the documentation.

Mobile sources such as generators, welders, and compressors may be used temporarily (less than six months) during construction activities. These sources would be required to meet IDAPA 58.01.01.625 visible emission opacity requirements.

An Air Permitting Applicability Determination (APAD) will be completed for any proposed future reactor demonstrations.

The installation, maintenance, servicing, and repairing of refrigeration equipment will be performed by certified refrigeration technicians in accordance with regulatory requirements.

Discharging to Surface-, Storm-, or Ground Water

Storm, or Ground Water (Describe Impact): The proposed action has the potential to change storm water drainage patterns and soil porosity. These changes have the potential to cause soil erosion. However, minor soil erosion and changes in stormwater run-off us unlikely to impact groundwater quality. There are no wells in the project area that provide direct conduits to groundwater. There are no streams or other bodies of surface water in the project area. The proposed action does not include activities that physically or chemically alter surface water resources.

Wastewater discharges from the proposed facility modifications are not anticipated.

Disturbing Cultural or Biological Resources

A cultural resource review is required for the proposed activities. Working directly with the CRMO on design modifications, adjustments, etc. will prevent potential time and monetary delays regarding the proposed activities. Furthermore, given the size and extensive scope of this undertaking, the CRMO will likely suggest consultation between DOE and the State Historic Preservation Office (SHPO) prior to the work being cleared for implementation.

EBR-II dome is considered a historic property (and iconic resource at the INL), and is subject to review for any potential modifications (internal and external) proposed within this EC. Modifications to the structural features of the dome (e.g. addition of penetrations for piping, etc.) may directly or indirectly effect the historic character of this building.

Generating and Managing Waste

The further modification of the EBR-II dome proposed in this ECP would have the potential to generate Low Level, Hazardous, Universal, and CERCLA Wastes. Project activities involving structures and/or equipment built or manufactured before 1982 (e.g. capacitors, lubricants/dielectric fluids, transformers, painted surfaces, caulking, joint sealers, ventilation duct gaskets or insulation, electrical conduit and cable trays, other electrical equipment) may generate PCB waste (MFC-768 and the EBR—II Dome were both built before 1982). All identified waste streams have an existing, mature disposition path. The LLW generated from this project would be managed by Waste Generator Services (WGS) and has a disposition path to the DOE Nevada National Security Site (NNSS), Clive, or Waste Control Specialists disposal facilities. The Hazardous and Universal Waste generated would be managed by WGS and would have a disposition path to one or more commercial treatment and disposal facilities. The CERCLA Waste generated would also be managed by WGS and would have a disposition path to Idaho CERCLA Disposal Facility (ICDF) or commercial disposal facilities. If Mixed Low Level Waste is generated, disposition would be available to commercial treatment and disposal facilities. Based on the volumes anticipated, these potential new waste streams are expected to have minimal impact to the BEA Waste Management Program.

Releasing Contaminants

EBR-II (MFC-767) has been designated Institutional Control Site ANL-67, because asbestos and radioactive materials were left within the EBR-II basement when it was grouted during D&D activities. A risk assessment documented the remaining hazardous materials did not present an unacceptable risk, provided that intrusion was controlled into areas where hazardous materials remain. The institutional controls require review for a Notice of Site Disturbance by Fluor of any activities within EBR-II that disrupt the current grout surface. Institutional Control Site ANL-67 also includes the former location of MFC-795 adjacent on the northeast side of EBR-II. The same rules apply to this location, because both locations are managed as one CERCLA institutional control site. The institutional control site sign for ANL-67 is located on the outside shell of EBR-II near the MFC-795 location. As these restrictions now apply to the interior of EBR-II with the ending of the non-time critical Removal Action, INL will place an additional sign inside the EBR-II facility.

One of the primary uses of HEPA filters is to contain toxic materials. The bag-in/bag-out feature of the G-Series filter housing allows an operator to change filters without coming into direct contact with the collected toxic materials, including viable organisms, radioactive dust, and carcinogens.

Chemical use has the potential to result in spills to air, water, and soils. While not anticipated, spills of construction products, chemicals, petroleum, and PCBs may occur. For instance, some existing electrical conduit and cable trays in MFC-768 are contaminated with PCB oil.

Using, Reusing, and Conserving Natural Resources

The proposed action requires purchasing or using materials sourced from natural resources. Project activities will release known greenhouse gases (GHGs) to the atmosphere and increase INL’s energy and water usage. With the issuance of Executive Order 13834: Efficient Federal Operations, agencies are to "ensure that new construction and major renovations conform to applicable building energy efficiency requirements and sustainable design principles; consider building efficiency when renewing or entering into leases; implement space utilization and optimization practices; and annually assess and report on building conformance to sustainability metrics.” INL's goals are that all new construction result in sustainable buildings that meet the 2016 Federal Guiding Principles as outlined by the Whitehouse Council of Environmental Quality (CEQ) and buildings are operated in the most efficient manner possible while ensuring employee safety, productivity and comfort.

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:
10 CFR 1021, Appendix B to subpart D, items B3.6, "Small-scale research and development, laboratory operations, and pilot projects"

Justification:
Project activities are consistent with 10 CFR 1021, Appendix B, B3.6, "Siting, construction, modification, operation, and decommissioning of facilities for small-scale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment."

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

Approved by Jason Anderson, DOE-ID NEPA Compliance Officer on: 03/17/2021