



# DOE-ID-INL-21-087 R2

July 2022

*Changing the World's Energy Future*

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**July 2022**

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**DOE-ID NEPA CX DETERMINATION**  
**Idaho National Laboratory**

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<b>SECTION A. Project Title: Cyprus Yeti</b>
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<b>SECTION B. Project Description and Purpose:</b>
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Revision 2:

This revision addresses a change in location of the placement of the generators and associated equipment along with the projected hours of use for the generators. N&HS personnel will be conducting 500KW generator testing over the course of the next two to three years with approximately 250 hours of operation per year per generator. These activities are anticipated to use two generators located at the area unofficially called the Bode Test Bed at the Auxiliary Reactor Area (ARA). This is a change from Revision 1 which planned on installing the generators and supporting equipment outside of PBF-612. Test activities may include testing beyond standard operating conditions, which may result in some equipment failure that may result in spillage of diesel fuel, coolant, lube oil, and air emissions due to components overheating. Standard load banks and industrial equipment will be purchased (or possibly use existing load equipment mounted on a trailer) and used as test loads during generator testing. This equipment will be housed in a temporary structure that will protect the equipment from weather-related damage and provide personnel a place to work. The temporary structure will be a 60 ft x 80 ft fabric tensioned structure that will be procured through a contract. Power and control cables may be run on the ground, in underground ducts, or in cable trays between the generators and test loads. An overhead fiber optic cable will be run on existing poles between the Obsidian Test Pad and the test location at the Bode Test Bed area to facilitate remote communications. Some grading will likely be necessary to smooth out, level and provide proper drainage around the structure and equipment pads. New ground rods will need to be installed.

Legacy equipment, including power poles left over from past projects, will need to be removed to make space for this new equipment. Removal of this equipment is covered under Environmental Compliance Permit INL-22-054. A monument that was erected following demolition of the ARA-IV building will need to be relocated to an out-of-the-way location.

The generators will be installed at ground level with spill containment (precast or poured in place concrete) and barrier walls surrounding them as necessary based upon INL explosive analysis. After testing is complete any damaged equipment will be recycled or disposed through the Excess Program. Minimal additional waste generation is expected and little to no foot traffic off of the test areas is anticipated.

Additional generator controllers will also so be purchased and used for hardware-in-the- loop testing within both facility as well as field environments.

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### Revision 1:

This revision provides details on the proposed location for the generators, building modifications, and site plan. A second generator was also purchased and will be collocated with the first generator.

A duct bank would be a preferred method of running power from the test pad area to PBF-612. The ductbank would consist of several conduits buried roughly 24" below the surface. Alternately conduit could be routed overhead on a cable tray. For this a couple of structures, would have to be built probably at least 13 ft. off the ground to allow for access by snowplows and fire trucks. A third option would be to lay the cables on the ground with cable guards over them, but this is by far the least attractive option from a cable damage/safety standpoint.

The main modification will be the addition of an underground ductbank from the test area to the PBF-612 building. New termination cabinets/boxes will be required at both ends. The boxes on the building side will mount to the exterior wall, the cabinet on the test pad side will likely need to be freestanding, probably mounted on a concrete pad. The power conductors will likely be terminated at a fused disconnect switch inside the building. The control cables will likely require the addition of a control cabinet inside the building as well. Soft (cubicle) walls made be added to the inside of PBF-612 to cordon off the south side of the high bay inside the building to support this testing and provide a line of demarcation between this testing and other testing and research that happens in the building.

The control and power pull boxes need to be sized base on the conductors being routed through them. Size and number of conductors are TBD, but for reference the power pull box is likely to be on the order of 24" x 30" x 12" and the control pull box will likely be slightly smaller, on the order of 24" x 24" x 10". There is no definite plan to remove the boxes at the end of the project. These same boxes and conduits could be used to support future testing once this project completes.



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Although no generators will be located at REC facilities, there will be some lab activities planned at the REC, primarily the Cybercore Integration Center (IF-691).

Figure 1 shows the layout of the generators and associated equipment on the test pad along with the proposed ductbank. The test pad would be sited in a previous disturbed area. The generators are approximately 86" W X 188"L X 117H and weigh 16,879 lbs each.



Figure 1. Proposed Equipment Layout.

Figure 2. shows an example of the load bank. Some of the equipment may be run to end of life, in which case it will be excessed or otherwise disposed of. Some equipment may be repurposed for future testing.

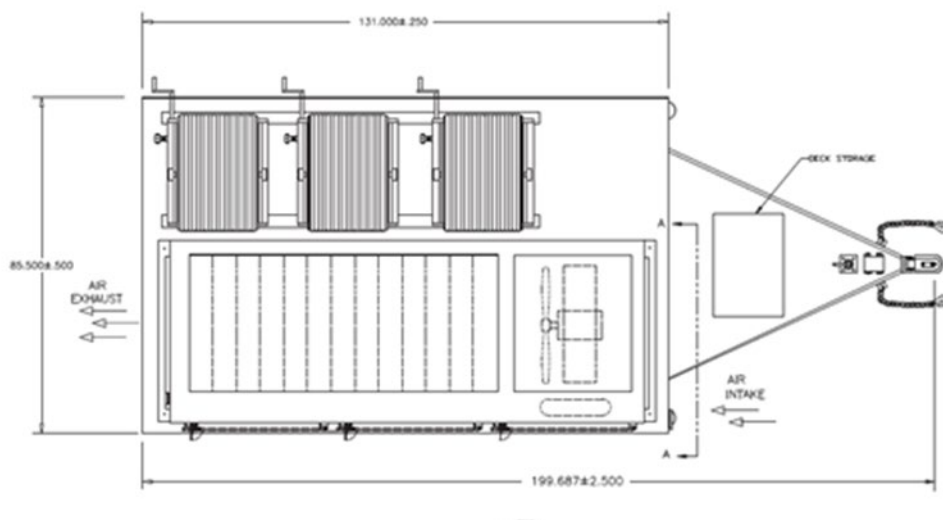


Figure 2. Example Load Bank.

#### Original ECP:

N&HS personnel will be conducting 500KW generator testing over the course of the next two to three years with approximately 500 hours of operation per year per generator. These activities are anticipated to use two generators located on the REC campus as well as in the INL Central Facilities Area (CFA) and Critical Infrastructure Test Range Complex (CITRC) areas. Test activities will include testing of one of the generators located at the REC campus to manufacturer standard operating conditions while the other generator may be tested beyond standard operating conditions on the INL CFA and CITRC areas. Testing at the INL CFA and CITRC area may result in some equipment failure that may result in spillage of diesel fuel, coolant, lube oil, and air emissions due to components overheating. Standard load banks and industrial equipment will be purchased (or possibly use existing load equipment mounted on a trailer) and used as test loads during generator testing. Power and control cables will either be run on the ground or in cable trays between the generator and test loads that will be located in the same general area as the generator. A trailer or shelter in the general area of the generators may be used during testing activities to house test equipment and personnel.

The generators will be installed at ground level with spill containment and barrier walls surrounding them as necessary based upon INL explosive analysis. It is anticipated that installation will occur in previously disturbed areas. After testing is complete any damaged equipment will be recycled or disposed through the excess program. Minimal additional waste generation is expected and little to no foot traffic off of the test areas is anticipated.

Since the generators may be tested outside of the normal operating parameters INL will be seeking a testing exemption under 40 CFR 1068.210. This exemption will have to be requested from EPA's Office of Transportation and Air Quality (OTAQ). Because a testing exemption is being pursued, Tier 2 or 3 generators will be procured, if available.

An additional generator controller may also be purchased and used for hardware-in-the-loop testing within both facility as well as field environments.

### SECTION C. Environmental Aspects or Potential Sources of Impact:

#### Air Emissions

The generators are expected to produce typical air emissions. A testing exemption was approved for the PBF-612 location. However, the request will need to be resubmitted identifying the new location at ARA. The generators may not be operated in a non-emergency manner until the testing exemption from OTAQ is approved. The construction of the test pad will involve the use of heavy equipment and may result in fugitive emissions.

#### Discharging to Surface-, Storm-, or Ground Water

N/A

#### Disturbing Cultural or Biological Resources

There will be soil disturbance to the south of PBF-612 to install a ductbank. Mowing may be necessary near the trailer to maintain a defensible space against wildfires.

#### Generating and Managing Waste

Activities will generate industrial waste (e.g., packing materials, wire, scrap metal, engine oil, common office trash, etc.). Scrap metal will be recycled to the extent possible. All Solid Waste will be managed by WGS.

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### Releasing Contaminants

When fuels or chemicals are used during the project there is the potential for spills that could impact the environment (air, water, soil). Although not anticipated, there is a potential for spills when using chemicals or fueling equipment. In the event of a spill, notify facility Environmental Staff. If the facility Environmental Staff cannot be contacted, report the release to the Spill Notification Team (208-241-6400). Clean up the spill and turn over spill cleanup materials to WGS.

### 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. Project activities will release known greenhouse gases (GHGs) to the atmosphere. Recyclable materials such as paper, plastic, and metal will be recycled to the extent practicable.

**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," and B1.31, "Installation or relocation of equipment."

### Justification:

The proposed R&D activities are consistent with CX 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); 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 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;" and

CX B1.31, "Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts."

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: 07-18-2022