

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

**SECTION A. Project Title: Cypress Yeti Rev 4**

**SECTION B. Project Description and Purpose:**

**Revision 4:**

This revision includes additional nearby locations for the placement of the existing two test generators (testing exemption – no APAD required) to accommodate construction activities at the original requested testing location. The new requested locations are also located near CITRC and include the following:

1. Test Pad B: 43°33'18.0"N, 112°52'00.0"W
2. Test Pad C: 43°33'05.0"N, 112°51'33.0"W
3. Test Pad D: 43°32'26.0"N, 112°51'44.0"W
4. Jefferson Blvd substation: 43° 32'39.95"N, 112° 52' 11.13"W

PBF-TR-06 Trailer (Jefferson Blvd substation: 43° 32'39.95"N, 112° 52' 11.13"W) will require facility modifications (Meltric receptacle) in order to supply auxiliary electrical loads for maintenance of the gensets, along with communication cables for connectivity.

**Revision 3:**

This revision addresses a change in the temporary structure mentioned below in Revision 2. Instead of a temporary 60' x 80' fabric structure, a 30' x 80' metal shelter will be erected in the same location. In addition, a build-out for the structure may include the installation of commercial power systems, communication systems, and interior finishes. The generators will either be installed at ground level with spill containment (precast or poured in place concrete) or on trailers with secondary containment.

**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 and subsequent spillage of diesel fuel, coolant, lubricant oil, or 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 with a place to work. The temporary structure will be a 60 ft x 80 ft fabric tension 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 another 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 of through the Excess Program. Minimal additional waste generation is expected and little to no foot traffic off of the test areas is anticipated.

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



## **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 by 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.

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The control and power pull boxes need to be sized based 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.

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.

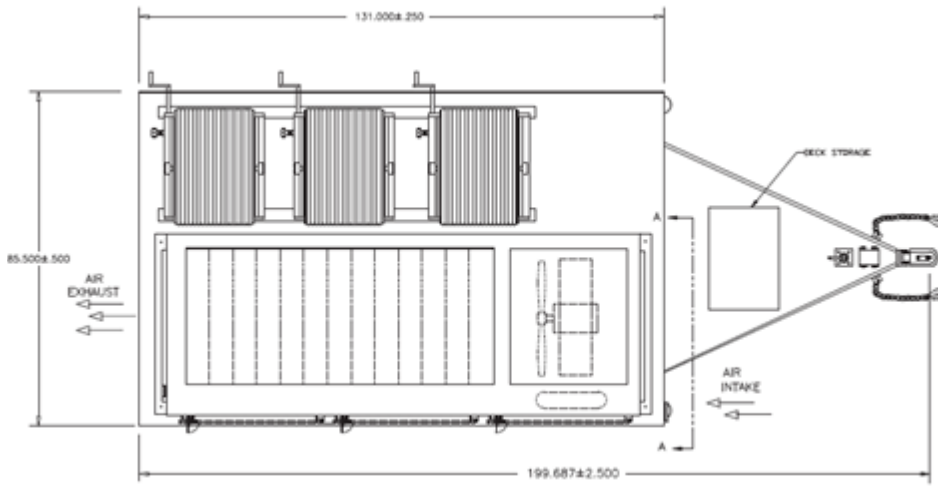


Figure 2. Example Load Bank. Original ECP:

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

NA

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**Disturbing Cultural or Biological Resources**

There is the potential for this work to impact vegetation and for project personnel to interact with various wildlife species. A Biological Resource Review will be arranged within two weeks prior to the initiation of any activities that might disturb soil or vegetation and again following completion of project activities. A nesting bird survey is included with the Biological Resource Review for actions occurring between April 1 - October 1 per compliance with the Migratory Bird Treaty Act. Bat surveys are also included with the Biological Resource Review in accordance with the INL Bat Protection Plan.

Cultural: Pursuant to the 2023 Programmatic Agreement, this federal undertaking does not trigger Section 106 review as the proposed activity has no potential to cause effects to historic properties.

**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.

**Releasing Contaminants**

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

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.

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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", B3.6 "Small-scale research and development, laboratory operations, and pilot projects"

**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.

B3.6 Small-scale research and development, laboratory operations, and pilot projects. 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 L. Anderson, DOE-ID NEPA Compliance Officer on: 10/9/2023