

U.S. Department of Energy- Idaho Operations Office
National Environmental Policy Act
Categorical Exclusion Determination

Project Title: Testing GridWrap's Composite WiRe Wrap R1

Project Description and Purpose:

This project is a revision to the original environmental review process (ERP) identification 4157 that was covered by tent Environmental Compliance Permit (ECP) INL-24-026. This revision is to cover the additional work that is going to be done at Central Facilities Area (CFA) at INL.

This project aims to enhance the structural and mechanical resilience of overhead power lines and utility poles using innovative technologies. The collaboration between INL and GridWrap will ensure thorough testing and analysis, ultimately contributing to a more reliable and efficient power grid. INL is undertaking a project with GridWrap, Inc. to test the Composite WiRe Wrap and additional technologies, BULLWRAP® and DEMIRWRAP®. These technologies aim to strengthen overhead power lines and utility poles, enhancing their resilience and reliability, especially under wildfire conditions. This project addresses the increasing energy demands driven by AI technology, renewable energy sources, and the need for robust transmission infrastructure. Testing will be conducted in wildfire simulations at INL's Central Facilities Area (CFA) and San Diego State University (SDSU). Other universities such as Oregon State Universities for sample analysis may be utilized.

Location:

- INL: Central Facilities Area (CFA) laydown area located near CF-611 Fire Station and IF-682 Security Systems Laboratory.
- San Diego State University (SDSU), San Diego, CA



Figure 1: Location of operation at INL Site near CFA Fire Station building CF-1611.

Tasks:

- Establish Test Plan:
 - Develop a test plan for fire chamber testing of Composite WiRe Wrap.
 - Lead: BEA.
 - Support: GridWrap.
- Receive Composite WiRe Wrap:

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- Ship and receive Composite WiRe Wrap installed on Aluminum Conductor Steel Reinforced (ACSR) Cable.
- Lead: GridWrap.
- Support: BEA.
- Fire Chamber Test (Composite WiRe Wrap):
 - Expose Composite WiRe Wrap installed on ACSR Cable to fire.
 - Lead: BEA.
 - Support: GridWrap.
- Data Collection (Composite WiRe Wrap):
 - Collect testing data and send a portion of the exposed Composite WiRe Wrap back to GridWrap.
 - Responsibilities: Equal by BEA and GridWrap.
- Data Analysis (Composite WiRe Wrap):
 - Analyze the outcomes of the field tests.
 - Responsibilities: Equal by BEA and GridWrap..
- Fire Test (BULLWRAP® and DEMIRWRAP®):
 - Expose utility poles treated with BULLWRAP® and DEMIRWRAP® to fire.
 - Lead: BEA.
 - Support: GridWrap.
- Data Collection (BULLWRAP® and DEMIRWRAP®):
 - Collect testing data and prepare fire-exposed poles for shipping.
 - Lead: GridWrap.
 - Support: BEA.
- Data Analysis (BULLWRAP® and DEMIRWRAP®):
 - Analyze the outcomes of the field tests.
 - Responsibilities: Equal by BEA and GridWrap.
- Final Reporting:
 - Provide a detailed technical report of the test requirements, outcomes, and data.
 - Responsibilities: Equal by BEA and GridWrap.

Materials and Equipment:

- Materials:
 - 6 feet of ACSR conductor with Composite WiRe Wrap (provided by GridWrap).
 - Epoxy connector ends (provided by BEA).
 - Fire chamber and propane setup (provided by BEA).
- Equipment:
 - Fire chamber located at UB3 and CFA fire department resources.

Waste Details:

- Expected Waste:
 - Approximately four wood power poles, each 10 feet tall.
 - Fire-exposed Composite WiRe Wrap samples.
- Air Emissions:
 - Carbon dioxide (CO₂) emissions from burning wood poles.

INL waste will be managed according by Waste Generator Services in accordance with laboratory procedures.

All off-site partners will comply with their local procedures and state/federal regulations as identified in contract agreements.

Environmental Aspects or Potential Sources of Impact:

Air Emissions

Project activities have the potential to release carbon dioxide from activities.

Discharging to Surface-, Storm-, or Ground Water

NA

Disturbing Cultural or Biological Resources

NA

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.

Project activities have the potential to generate industrial waste i.e., wood and wire wrap.

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.

Determination

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); (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Appendix B. The proposal has not been segmented to meet the definition of a categorical exclusion. Segmentation can occur when a proposal is broken down into small parts in order to avoid the appearance of significance of the total action. However, segmentation does not include proposals that are developed and potentially implemented over multiple phases where each phase results in a decision whether to proceed to the subsequent phase. There is no extraordinary circumstance related to the proposal that is likely to cause a reasonably foreseeable significant adverse effect or for which DOE does not know the environmental effect. Extraordinary circumstances are unique situations presented by specific proposals, including, but not limited to, scientific controversy about the environmental effects of the proposal; uncertain effects or effects involving unique or unknown risks; and unresolved conflicts concerning alternative uses of available resources.

References: B3.11 "Outdoor tests and experiments on materials and equipment components"

Justification: For the DOE regulations regarding the application of categorical exclusions, including the full text of each categorical exclusion, see 10 CFR 1021.102 and Appendix B to 10 CFR Part 1021. Implementing guidance for categorical exclusions can be found in DOE's National Environmental Policy Act Implementing Procedures (June 30, 2025): (See full text in regulations and implementing procedures).

The proposal must fit within the classes of actions listed in Appendix B to 10 CFR Part 1021 and must satisfy the conditions that are integral elements of the classes of actions therein.

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There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal. DOE or an applicant may modify the proposal to avoid reasonably foreseeable adverse significant effects such that the categorical exclusion would apply.

The proposal has not been segmented to meet the definition of a categorical exclusion.

B3.11 Outdoor tests and experiments on materials and equipment components. Outdoor tests and experiments for the development, quality assurance, or reliability of materials and equipment (including, but not limited to, weapon system components) under controlled conditions. Covered actions include, but are not limited to, burn tests (such as tests of electric cable fire resistance or the combustion characteristics of fuels), impact tests (such as pneumatic ejector tests using earthen embankments or concrete slabs designated and routinely used for that purpose), or drop, puncture, water-immersion, or thermal tests. Covered actions would not involve source, special nuclear, or byproduct materials, except encapsulated sources manufactured to applicable standards that contain source, special nuclear, or byproduct materials may be used for nondestructive actions such as detector/sensor development and testing and first responder field training.

Approved by Robert Herzog, DOE-ID NEPA Compliance Officer on: 12/9/2025