

Categorical Exclusion Determination

Bonneville Power Administration

Department of Energy



Proposed Action: Fiscal Year 2017 Technology Innovation Portfolio

Project Manager: Judith Estep, Technology Innovation Portfolio Manager – ST-3

Location: Portland, Oregon

Categorical Exclusion Applied (from Subpart D, 10 C.F.R. Part 1021): B5.1 Actions to conserve energy or water; B3.6 Small-scale research and development, laboratory operations, and pilot projects

Description of the Proposed Action: BPA proposes to fund or partially fund federal research laboratories, utilities, universities, companies, and a research institute to conduct research and develop pilot projects relevant to BPA's operations through BPA's Fiscal Year 2017 Technology Innovation (TI) Portfolio. These projects would primarily involve energy-efficiency and demand-response applications, transmission-equipment testing, computer modeling, and software development.

BPA also proposes to continue funding for ongoing projects that were proposed in previous portfolios. Individual projects proposed in a TI Portfolio typically span 1–3 fiscal years.

A review of BPA's Fiscal Year 2017 TI Portfolio reveals research and demonstration project proposals that would be located inside existing buildings or within previously disturbed areas. All testing and laboratory operations would occur within existing operating parameters. If BPA identifies site-specific impacts during initial project design phases, BPA will address these impacts in a separate National Environmental Policy Act (NEPA) analysis that will be completed prior to the demonstration phase when such impacts could be expected to occur.

Findings: In accordance with Section 1021.410(b) of the Department of Energy's (DOE) National Environmental Policy Act (NEPA) Regulations (57 FR 15144, Apr. 24, 1992, as amended at 61 FR 36221-36243, July 9, 1996; 61 FR 64608, Dec. 6, 1996, 76 FR 63764, Nov. 14, 2011), BPA has determined that the proposed action:

- (1) fits within a class of actions listed in Appendix B of 10 CFR 1021, Subpart D (see attached Environmental Checklist);
- (2) does not present any extraordinary circumstances that may affect the significance of the environmental effects of the proposal; and
- (3) has not been segmented to meet the definition of a categorical exclusion.

Based on these determinations, BPA finds that the proposed action is categorically excluded from further NEPA review.

/s/ Jeffrey J. Maslow

Jeffrey J. Maslow

Environmental Protection Specialist

Concur:

/s/ Stacy L. Mason

Date: July 8, 2016

Stacy L. Mason

NEPA Compliance Officer

Attachment(s): Environmental Checklist
FY 2017 Technology Innovation Portfolio Project List

Categorical Exclusion Environmental Checklist

This checklist documents environmental considerations for the proposed project and explains why the project would not have the potential to cause significant impacts on environmentally sensitive resources and would meet other integral elements of the applied categorical exclusion.

Proposed Action: Fiscal Year 2017 Technology Innovation Portfolio

Project Site Description

Within existing structures, research laboratories, and previously disturbed areas at various locations throughout the United States.

Evaluation of Potential Impacts to Environmental Resources

Environmental Resource Impacts	No Potential for Significance	No Potential for Significance, with Conditions
1. Historic and Cultural Resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Explanation:</u> Because the portfolio contains proposals that would involve research and demonstration projects located inside existing buildings or within previously disturbed areas, there would be no potential to affect historic and cultural resources.		
2. Geology and Soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Explanation:</u> Because the portfolio contains proposals that would involve research and demonstration projects located inside existing buildings or within previously disturbed areas without new ground disturbance, there would be no effect on geology and soils.		
3. Plants (including federal/state special-status species)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Explanation:</u> Because the portfolio contains proposals that would involve research and demonstration projects located inside existing buildings or within previously disturbed areas without new ground disturbance, there would be no effect on plants.		
4. Wildlife (including federal/state special-status species and habitats)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Explanation:</u> Because the portfolio contains proposals that would involve research and demonstration projects located inside existing buildings or within previously disturbed areas, there would be no effect on wildlife. Therefore, the proposed projects would have no effect on federal/state special-status species and habitats.		

5. **Water Bodies, Floodplains, and Fish**
(including federal/state special-status species and ESUs)



Explanation:

Because the portfolio contains proposals that would involve research and demonstration projects located inside buildings or within previously disturbed areas that would not have the potential to affect waterbodies, there would be no effect on waterbodies, floodplains, and fish.

6. **Wetlands**



Explanation:

Because the portfolio contains proposals that would involve research and demonstration projects located inside buildings or within previously disturbed areas that would not have the potential to affect wetlands, there would be no effect on wetlands.

7. **Groundwater and Aquifers**



Explanation:

Because the portfolio contains proposals that would involve research and demonstration projects located inside buildings or within previously disturbed areas, and would not involve activities with the potential to affect groundwater or aquifers, there would be no effect on groundwater and aquifers.

8. **Land Use and Specially Designated Areas**



Explanation:

Because the portfolio contains proposals that would involve research and demonstration projects located inside buildings or within previously disturbed areas, there would be no effect on land use and specially designated areas.

9. **Visual Quality**



Explanation:

Because the portfolio contains proposals that would involve research and demonstration projects located inside buildings or within previously disturbed areas, there would be no effect on visual quality.

10. **Air Quality**



Explanation:

Because the portfolio contains proposals that would involve research and demonstration projects located inside buildings and would not involve activities that affect air quality, there would be no effect on air quality.

11. **Noise**



Explanation:

Because the portfolio contains proposals that would involve research and demonstration projects located inside buildings or within previously disturbed areas, there would be no effect on noise levels.

12. **Human Health and Safety**



Explanation:

All research and demonstration activities must utilize best management practices that protect human health and safety.

Evaluation of Other Integral Elements

The proposed project would also meet conditions that are integral elements of the categorical exclusion. The project would not:

- Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders.

Explanation, if necessary:

- Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators) that are not otherwise categorically excluded.

Explanation, if necessary:

- Disturb hazardous substances, pollutants, contaminants, or CERCLA excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases.

Explanation, if necessary:

- 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 of the Department of Agriculture, the Environmental Protection Agency, and the National Institutes of Health.

Explanation, if necessary:

Landowner Notification, Involvement, or Coordination

Description:

Based on the foregoing, this proposed project does not have the potential to cause significant impacts on any environmentally sensitive resources.

Signed: /s/ Jeffrey J. Maslow
Jeffrey J. Maslow

Date: July 8, 2016

Fiscal Year 2017 Technology Innovation Portfolio

The portfolio includes both new and ongoing projects during the 2017 Fiscal Year. New project proposals for the 2017 Fiscal Year are listed below with Technology Innovation Project (TIP) numbers, lead organizations, and project titles:

TIP 371: BPA – Load Composition Analysis and Monitoring

TIP 372: BPA - Accelerating Real-Time Studies

TIP 389: Lawrence Berkeley National Laboratory – Realizing High-Accuracy Low-Cost Measurement and Verification for Deep Cost Savings

TIP 378: Pacific Northwest National Laboratory – Developing the Dynamic Contingency Analysis Tool (DCAT) for Cascading Outage Analysis for the Western Interconnection using GE PSLF

TIP 381: ABB Inc. - WAMS-Enhanced HVDC Control for Flexible and Stable Grid Operations

TIP 370: BPA – Coordinated Voltage Control to Enable Dynamic Transfers

TIP 379: Pacific Northwest National Laboratory – An Efficient Approach to Developing a Common WECC-Wide Node/Breaker Model

TIP 375: Smart Information Flow Technologies Inc. - Cyber-Physical Security Situation Awareness for the Power Grid

TIP 392: Pacific Northwest National Laboratory - Testing the Performance and Dynamic Control of Energy-Efficient Cellular Shades in Pacific Northwest National Laboratory Homes

TIP 387: Optimized Thermal Systems Inc. – Heat Pump High-Density Thermal Storage

TIP 393: Pacific Northwest National Laboratory – Performance Testing of Phase Change Material in US Army Reserve Buildings

TIP 373: BPA – Using PMU Measurements to Improve Line and Transformer Network Models

TIP 377: Washington State University – Improving Electrical Power Cyber Defense: Rapid Detection of Malicious Data Injections

TIP 390: Optimized Thermal Systems Inc. – Evaluation of Alternative Defrost Strategies for Residential Heat Pumps

TIP 374: BPA - Integrate Self-Monitoring Features of Substation Protection and Control System Equipment by Enhancing GOOSE I/O Monitoring and Using the Sampled Values Protocol IEC 61850 Standard

TIP 394: Ecotope – Small-scale Multifamily CO2 Heat-Pump Water-Heating Design and Pilot Study

TIP 382: Lawrence Livermore National Laboratory – Unified Remedial Action Scheme (RAS) Modeling and Simulation Tool for Grid Resiliency

TIP 385: Alstom Renewable Energy LLC – Enhancing Hydropower Reliability through Cavitation Monitoring and Noise Condition Assessment

TIP 380: Oregon State University – Active Load Monitoring and Protection for Resilient Operation during Contingencies

TIP 386: Powin Energy – Megawatt-scale Battery Energy Storage System and Renewables Integration

TIP 391: Rensselaer Polytechnic Institute – Demonstration of Occupancy-Controlled Outdoor Area Lighting

TIP 388: BPA – Vendor-Agnostic IDSM Residential-Connected Thermostat and Device Platform

TIP 376: Washington State University – TimeSeries Learning on PMU Data for Event Detection

TIP 384: Alstom Renewable Energy LLC – In-situ Residual Stress Measurement for Accurate Fatigue Lifetime Assessment

TIP 369: Electric Power Research Institute – Protective Arrester Overvoltage Control Supplemental Project

TIP 368: Electric Power Research Institute – Development of Substation Equipment Spares Strategy Methodology

TIP 367: Electric Power Research Institute – Power Transformer through Fault Risk Assessment

TIP 366: Electric Power Research Institute – Timing Security Assessment and Solutions

TIP 364: Electric Power Research Institute – Information and Communications Technologies for Transmission

TIP 363: Electric Power Research Institute – South-of-Allston Congestion Management Tool