



U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: General Electric Global Research Center - High Voltage, High Power Gas Tube Technology for HVDC Transmission

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Niskayuna, NY; Madison, WI; Princeton, NJ; Pasadena, CA

Proposed Action Description:

Funding will support the project team's small-scale, research and development activities to build upon prior work that was designed to develop a reliable, long-life, high voltage gas tube switch technology. The new effort will involve 1) extending the operating voltage of the developed gas tube switch from the present 100 kV level to 300 kV, and 2) further investigating and exploiting the low-forward-voltage operating mode for the developed gas tube switch. In particular, the proposed project efforts will include 1) design, construction, and electrical testing of gas-switch device components and associated control gear and 2) design, construction, operation, and characterization of gas-discharge plasma with liquid metal cathode. If successful, the project could reduce the current cost of HVDC terminals by up to 40 percent.

Project activities will be conducted at existing facilities, and will be conducted in accordance with applicable Federal, State, and local safety and environmental requirements.

Categorical Exclusion(s) Applied:

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

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) 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; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (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, Subpart D, Appendix B.

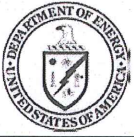
There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

The proposal has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

Date Determined: 10/29/2015



U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: GE Global Research - High-Voltage, High-Power Gas Tube Technology for HVDC Transmission

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Niskayuna, NY; Madison, WI; Appleton, WI; Pasadena, CA

Proposed Action Description:

GE Global Research, in conjunction with the University of Wisconsin and Silicon Investigations Company, will perform research to develop a high-voltage and high power gas tube switch for high voltage direct current (HVDC) transmission and flexible AC transmission systems (FACTS) for use with high power electrical grid applications.

Project activities will take place at GE Global Research's laboratory facilities in Niskayuna, NY; the University of Wisconsin's laboratory facilities in Madison, WI and Pasadena, CA; and Silicon Investigations Company's manufacturing facility in Appleton, WI.

Categorical Exclusion(s) Applied:

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

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) 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; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (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, Subpart D, Appendix B.

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Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

Date Determined: 01/10/2013