

PMC-ND

(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

**RECIPIENT:** Electric Power Research Institute**STATE:** NC

PROJECT TITLE: Improving Economics of Gen3 CSP System Components through Fabrication and Application of High-Temperature Nickel-Based Alloys

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001697	DE-EE0008367	GFO-0008367-001	GO8367

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

A11 Technical advice and assistance to organizations

Technical advice and planning assistance to international, national, state, and local organizations.

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

Siting, construction, modification, operation, and decommissioning of facilities for smallscale 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Electric Power Research Institute (EPRI) to develop and test a unique nickel-based alloy designed for critical concentrated solar power (CSP) components such as receivers, piping, and heat-exchangers, in order to improve the performance and economic benefits of high temperature CSP power systems.

The proposed project would involve small-scale mechanical property studies and fabrication trials. All work would occur in established research and development (R&D) laboratories or commercial manufacturing facilities. Activities associated with the proposed project would include: project management; paper studies and data analysis; computer modeling; preliminary engineering and design; and, information sharing/collaboration. Work funded under this award would include the development and distribution of protocols for future manufacturing in addition to technical advice for integration with concurrent projects awarded under this Funding Opportunity Announcement (DE-FOA-0001697); however, neither fabrication at commercial scale or the installation/testing of components at locations beyond those reviewed below are within the currently defined scope of the proposed project as detailed in the Statement of Project Objectives. Further NEPA review will be required if the recipient proposes to ship, test, and/or install components at any other location.

Desktop-based management and analysis in addition to laboratory studies would occur at EPRI offices and R&D laboratories in Charlotte, NC. Fabrication trials involving materials and mechanical testing to support R&D would be performed by subrecipient Special Metals at their location in Huntington, WV. Production of materials plus basic testing would be performed by Special Metals-Rath Gibson, LLC at their location in Janesville WI. The facilities in which project work would occur were purpose-built for the type of indoor activities being proposed; therefore, no

adverse impacts to sensitive resources are expected as a result of the proposed activities at these locations. No change in the use, mission or operation of these facilities would arise out of project efforts. EPRI and subrecipients have all applicable permits in place, and would not need additional permits for the proposed activities.

All of the proposed work is routine to EPRI and Special Metals research operations, and would be subject to existing health and safety protocols for the mechanical testing of samples at high temperatures/pressures and the use of chemicals for metallographic studies. If any modifications to existing testing equipment would be required, additional safety reviews would be undertaken and standard operating procedures updated. No physical modifications to existing facilities would be needed for the proposed scope of work and all modified testing equipment would remain in place for future use after project completion. Non-hazardous waste including metal shavings and extra metallic materials left over from specimen fabrication would be recycled. Small quantities of chemical byproducts from etching would be properly stored and disposed as part of EPRI's established chemical hygiene plan; no siting or expansion of waste facilities/treatment actions would be necessary.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Solar Energy Technologies Office
This NEPA determination does not require a tailored NEPA Provision.
NEPA review completed by Whitney Doss, 8/20/2018

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically
Signed By: Kristin Kerwin
NEPA Compliance Officer

Date: 8/22/2018

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____