

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



RECIPIENT: EPRI

STATE: CA

PROJECT TITLE : Improved Operations, Reliability, and Maintenance for CSP Plants through Application of Steam Generator Damage Mechanisms Theory & Practice

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOQ-0002378	DE-EE0009811	GFO-0009811-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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.)

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 funding to the Electric Power Research Institute, Inc. (EPRI) to improve the reliability, operability, and productivity of concentrating solar power (CSP) plants through the development of guidelines in collaboration with subject matter experts (SMEs). This would be done through the review, analysis, and testing of CSP steam Rankine cycle plant components (the Rankine cycle describes the process by which steam engines harness thermal energy of a heat source to generate electricity).

The proposed project activities would take place at EPRI Laboratories in Charlotte, NC. This would include all metallurgical analyses and testing. Intertek AIM in Santa Clara, CA would perform information gathering, data analysis, and modeling.

The proposed project activities would be divided into three Budget Periods (BPs). The first BP would involve the definition of, and investigations of causes and solutions for major damage mechanisms occurring during the Rankine cycle components of CSP plants. A collaborative initiative would be created with operators, engineers, and stakeholders, in order to better identify and minimize these damage mechanisms, and improve future training. In all three BPs, collaborators would continue to work together, conduct high level investigations of damage mechanisms, explore flexible operation damage pathways, and perform laboratory failure and root cause tests and analyses. BP2 would consist of failure and engineering analyses to investigate the damage mechanisms and identify those needing further investigation. BP3 would complete the ongoing investigations and testing, and develop mitigation strategies.

This project would include the use and handling of various hazardous materials, including metals, acids, and industrial solvents. All emissions from sample preparation in the metallurgical labs would be done under fume hoods. All handling would occur in-lab, so the proposed project activities would pose no risk to the public. All hazardous materials would be managed in accordance with Federal, state, and local environmental regulations.

All activities would take place at existing, purpose-built facilities. There would be no modifications to or change in

use of existing facilities and no ground disturbing activities outside of the field testing on previously disturbed ground which is currently utilized for this purpose. No new permits or licenses are needed.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Solar Energy Technologies Office (SETO)
Review completed by Alex Colling on 02/18/2022.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) 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 proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action 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.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically
Signed By: Kristin Kerwin
NEPA Compliance Officer

Date: 2/25/2022

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
 Field Office Manager review required

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

Field Office Manager's Signature: _____

Field Office Manager

Date: _____