

PMC-EF2a

(2.0+02)

U.S. DEPARTMENT OF ENERGY  
EERE PROJECT MANAGEMENT CENTER  
NEPA DETERMINATION



RECIPIENT:NREL

STATE: CO

**PROJECT TITLE :** AIST-NREL Concentrator Photovoltaic (CPV) Demonstration (SolarTac, Aurora, CO); NREL Tracking No. 10-035

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
		NREL-10-035	GO10337

**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 (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.
- A11** Technical advice and planning assistance to international, national, state, and local organizations.
- B1.3** Routine maintenance activities and custodial services for buildings, structures, rights-of-way, infrastructures (e.g., pathways, roads, and railroads), vehicles and equipment, and localized vegetation and pest control, during which operations may be suspended and resumed. Custodial services are activities to preserve facility appearance, working conditions, and sanitation, such as cleaning, window washing, lawn mowing, trash collection, painting, and snow removal. Routine maintenance activities, corrective (that is, repair), preventive, and predictive, are required to maintain and preserve buildings, structures, infrastructures, and equipment in a condition suitable for a facility to be used for its designated purpose. Routine maintenance may result in replacement to the extent that replacement is in kind and is not a substantial upgrade or improvement. In kind replacement includes installation of new components to replace outmoded components if the replacement does not result in a significant change in the expected useful life, design capacity, or function of the facility. Routine maintenance does not include replacement of a major component that significantly extends the originally intended useful life of a facility (for example, it does not include the replacement of a reactor vessel near the end of its useful life). Routine maintenance activities include, but are not limited to: (a) Repair of facility equipment, such as lathes, mills, pumps, and presses; (b) Door and window repair or replacement; (c) Wall, ceiling, or floor repair; (d) Reroofing; (e) Plumbing, electrical utility, and telephone service repair; (f) Routine replacement of high-efficiency particulate air filters; (g) Inspection and/or treatment of currently installed utility poles; (h) Repair of road embankments (i) Repair or replacement of fire protection sprinkler systems; (j) Road and parking area resurfacing, including construction of temporary access to facilitate resurfacing; (k) Erosion control and soil stabilization measures (such as reseeding and revegetation); (l) Surveillance and maintenance of surplus facilities in accordance with DOE Order 5820.2, "Radioactive Waste Management"; (m) Repair and maintenance of transmission facilities, including replacement of conductors of the same nominal voltage, poles, circuit breakers, transformers, capacitors, crossarms, insulators, and downed transmission lines, in accordance, where appropriate, with 40 CFR part 761 (Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions); (n) Routine testing and calibration of facility components, subsystems, or portable equipment (including but not limited to, control valves, in core monitoring devices, transformers, capacitors, monitoring wells, lysimeters, weather stations, and flumes); and (o) Routine decontamination of the surfaces of equipment, rooms, hot cells, or other interior surfaces of buildings (by such activities as wiping with rags, using strippable latex, and minor vacuuming), including removal of contaminated intact equipment and other materials (other than spent nuclear fuel or special nuclear material in nuclear reactors).

## Rational for determination:

This proposed project would be for CRADA agreement between the National Renewable Energy Laboratory (NREL) and the National Institute of Advanced Industrial Science and Technology (AIST), a nonprofit organization from Japan, to demonstrate and quantitatively compare performance of concentrator photovoltaic (CPV) systems installed in Japan and in the United States. In the US, two CPV systems, one comparison silicon PV array and support infrastructure would be installed at the Solar Technology Acceleration Center (SolarTAC) facility in Aurora, Colorado (26th Ave and Hudson Rd., Aurora, CO). The SolarTAC facility is an existing facility that was previously cleared of vegetation, has been specifically developed for solar technology research and testing, and has the necessary infrastructure and permits to support this project. SolarTAC is owned by the City of Aurora, operated by Midwest Research Institute, and serves several founding organizations including NREL. The acquisition and construction of the equipment at SolarTAC would be conducted by Daido Steel for AIST. Federal funding through NREL would only be utilized for providing technical support, specifications, data monitoring, periodic washing of the arrays, and data assessment and report writing.

Construction activities undertaken by Daido would include the installation of the following (site drawings have been

uploaded to the PMC database): utility connections from the test area to existing services (electrical, data, telecom, etc.); fencing in the test area in accordance with the requirements of SolarTAC (anticipated to be 5 ft high black chainlink); a vehicular service entrance from existing roadways to the test area; support structures for the CPV systems; and a 75 ft (approx.) tall lightning rod and 75 ft tall meteorological tower, anticipated to be a monopole (free-standing tower, but could be guyed if necessary). Excavation and clearing would be required for utility connections and for preparing the test area for concrete support pads and pedestals. The utility infrastructure would consist of buried conduit in established utility service corridors and incorporation of a small weather protected shed. Construction would utilize standard engineering design and construction principles, in accordance with national and local standards as applicable. System monitoring and maintenance would be conducted in a manner consistent with accepted R&D protocols. Construction activities would begin August 2010. System research and monitoring would continue for a period of 2 to 10 years.

NREL and AIST would monitor system performance and weather parameters (direct irradiance, ambient temperatures, wind speed, global irradiance and system performance) remotely during the course of the monitoring phase. NREL would also monitor the data stream and investigate the root cause of any data stream issues. Additionally, NREL would wash the arrays monthly utilizing water and cloths. This would require approximately four gallons of water per month. Alternatively, a Windex type commercial product may be used, provided that overspray and dripping on to soil is minimized. After the collection of one year of data, AIST and NREL would jointly publish one or more papers summarizing the results of the work.

Since a 100-yr floodplain traverses the proposed test area, construction and installation would be in accordance with all applicable local, state, and federal regulations. Mitigation measures to avoid impacts to migratory birds include ground-nesting bird surveys before construction, and periodically during monitoring and maintenance activities, as well as the installation of bird diverters on guy wires, if a guyed met tower is installed. Any herbicides used to control weeds would be applied in accordance with the manufacturer's label requirements and as approved by SolarTAC.

Based upon the information above, this proposed project would qualify for Categorical Exclusions A9, A11, and B1.3.

#### NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2A prepared by Robert Smith

#### SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: \_\_\_\_\_

*Rou Plummer*  
NEPA Compliance Officer

Date: \_\_\_\_\_

8/20/2010

#### 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: \_\_\_\_\_