PMC-EF2a

(2/04/02)

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

RECIPIENT: Alaska Energy Authority **STATE:** AK

PROJECT TITLE : Alaska Wind Energy Project

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FG-36-05GO085038	DE-FG-36-05GO085038	GFO-GO85038-002	GO85038

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:

B1.19 Microwave, meteorological, and radio towers Siting, construction, modification, operation, and removal of microwave, radio communication, and meteorological towers and associated facilities, provided that the towers and associated facilities would not be in a governmentally designated scenic area (see B(4)(iv) of this appendix) unless otherwise authorized by the appropriate governmental entity.

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.)

B3.1 Site characterization and environmental monitoring Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Rational for determination:

DOE is proposing to provide federal funding to assist Alaska Energy Authority (AEA) in developing wind energy in rural Alaskan communities. This NEPA review is being conducted for Tasks 8 and 9 of AEA's award. The study being proposed under these tasks would include information gathering, site selection, metrological instrument installation, research, data gathering, reporting, technical advice and assistance.

Numerous NEPA determinations have been conducted for this award in the past. Determination GFO-07-004 (1/28/2008; B5.1) is associated with this new proposed project and previously allowed design and testing of a turbine foundation in the Yukon-Kuskoquim Delta (Tooksook Bay, AK).

For Task 8, AEA would purchase up to fifteen 10-meter portable meteorological (met) towers and five 34-meter NRG Systems met towers that would be used for AEA's met-tower loan program. The proposed meteorological towers would be transported via vehicle on existing roads and/or by commercial aircraft. These met towers would be used to assist rural Alaskan communities in determining their local wind resource potential for a period of 12 months.

The design of each 10-meter tower is a single tubular galvanized steel pole tower with a diameter up to 6". The tower sections are assembled on the ground and tilted up with a gin-pole device. There is a 1'x1' metal base which would be anchored to the ground using four 5' rebar driven into the ground at opposing angles. No foundation would be constructed. If additional support is required in soft soils, one or more sheets of plywood would be placed beneath the metal base for support. The 10-meter units would be used for meteorological data collection and for testing multiple sites simultaneously in variable weather conditions.

The design of each 34-meter tower is a single tubular galvanized steel pole tower with a diameter up to 6". The tower sections are assembled on the ground and tilted up with a gin-pole device. There would be a 4'x4' metal base anchored to the ground using four 5' rebar driven into the ground at opposing angles. No foundation would be constructed. If additional support is required in soft soils, one or more sheets of plywood would be placed beneath the metal base for support. The 34-meter towers would be installed with weather measuring devices (anemometers, weather vanes, temperature/humidity sensors) used for data collection.

The anchoring system for both tower sizes utilizes site specific anchor systems that do not require concrete or pile or other permanent foundations. Anchoring systems vary by ground conditions which range from permafrost to gravel to rock. The anchoring systems that would be used are:
• Screw-in (helical) anchoring system uses anchors with a 6" (150 mm) or 8" (203 mm) helix diameter base. Screw-in anchors are installed by hand, using a cross bar to screw them into the earth like a corkscrew 60" deep (1.524 m).
• Rock anchors are placed into solid rock, when anchoring to either bare rock, or thin soils with solid rock near the surface. They are constructed of a threaded rod with integral eye, and two opposing wedge halves. The anchor is placed in a hole pre-drilled in the rock. Twisting the eye of the anchor forces the wedges against the sides of the hole and locks the anchor in place.
• Arrowhead anchors can penetrate stiff and rocky soils because the unique triangular design threads its way between obstacles such as rocks, which can prevent successful installation of screw-in anchors. Arrowhead anchors are driven into the ground with a hardened steel drive rod.

Four anchors are installed for each met tower; one anchor on each side of the met tower for guy wire support. At each anchor, four guy wires attach to the meteorological tower at different levels. The guy wires would have bird diverters to deter avian species.

AEA has a list of 50 communities that have expressed interest in installing met towers for one year to collect data on available wind energy. However, after consultation with the US Fish and Wildlife Service (USFWS) AEA has agreed to only install met towers at 33 of the 50 communities to avoid impacts to threatened and endangered species. On 5/7/2012 the USFWS identified 33 communities (Chitina, Coffman Cove, Craig, Crooked Creek, Haines, Hollis, Hoonah, Hughes, Hydaburg, Kasaan, Ketchikan, Klawok, Lower Kalskag, Manley Hot Springs, Mentasta Lake, Metlakatla, Minto, Newhalen, Nunapitchuk, Pelican, Petersburg, Pilot Station, Russian Mission, Sitka, Skagway, Sleetmute, Takotna, Tetlin, Tonsina, Tuluksak, Upper Kalskag, Willow Creek, Wrangell) of the 50 proposed by AEA that did not have Threatened or Endangered (T & E) species present.

AEA plans to work with the Federal Aviation Administration (FAA) and the US Fish and Wildlife Service (USFWS) [compliance with the Migratory Bird Treaty Act and Bald Eagle and Golden Eagle Protection Act] to get an approved tower location prior to installation. AEA committed to consulting with and follow FAA recommendations as communicated on September 16, 2011 in an email between Robert van Haastert (FAA) and James Jensen (Alaska Energy Authority) titled "FAA consultation for Meteorological Towers" prior to installing met towers (identified below). AEA committed to consulting with and follow USFWS recommendations as communicated on October 11, 2011 in an email between Maureen DeZeeuw (USFWS) and Richard Stomberg (Alaska Energy Authority titled "Consultation with USFWS for Meteorological Tower Siting" prior to installing met towers (identified below). If no acceptable location is available within a particular community, the tower would not be deployed, and AEA would select the next interested community. Once a tower (10- or 34-meter) is installed, the local utility would check the met towers after a severe weather event, and periodically for animal and/or human disruption and would transfer the data to AEA monthly.

The FAA has approved AEA's plans to do the following (supporting documents in the PMC):
• When preferred site locations are selected AEA would run the tower height, location, and elevation through the Notice Criteria Tool that is available online.
• If the Notice Criteria Tool indicates no need to file Form 74060-1, AEA would proceed with erecting the tower at the location selected.
• If the tool indicates the requirement to file a Form 7460-1, AEA staff would submit a completed form. AEA would then wait to receive a response from the FAA. If a Determination of No Hazard to Air Navigation is received AEA would erect the tower in accordance with the requirements provided in the determination.
• If the FAA responds with anything other than a Determination of No Hazard to Air Navigation, AEA would work with the FAA to find an acceptable design or abandon plans to erect a tower at that site.
To address migrating birds (including Bald Eagle and Golden Protection Act), the USFWS has agreed to the following course of action (supporting documents in the PMC):
• When the preferred site locations are selected AEA would email the appropriate USFWS Field Office with the proposed tower type, height, and location.

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Insert the following language in the award:

You are required to:
Conditions of Approval For Task 8: AEA and their contractors will coordinate with the USFWS, AK SHPO and FAA when installing met towers and equipment and that the AEA and their contractors will acquire any necessary permissions from private land owners prior to engaging in activities.

Meteorological tower installation is only allowed for the following Alaskan communities: Chitina, Coffman Cove, Craig, Crooked Creek, Haines, Hollis, Hoonah, Hughes, Hydaburg, Kasaan, Ketchikan, Klawok, Lower Kalskag, Manley Hot Springs, Mentasta Lake, Metlakatla, Minto, Newhalen, Nunapitchuk, Pelican, Petersburg, Pilot Station, Russian Mission, Sitka, Skagway, Sleetmute, Takotna, Tetlin, Tonsina, Tuluksak, Upper Kalskag, Willow Creek, Wrangell. AK SHPO must be consulted for all 33 sites. This includes submitting an Alaska "Request for SHPO Section 106 Review," to the Alaska SHPO and DOE. AEA will keep the DOE informed of all communication with the AK SHPO. No met towers will be installed until SHPO has responded to the "Request for SHPO Section 106 Review" in a positive manner.

Note to Specialist :

EF2A completed by Christopher Carusona II

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By Lori Gray / Lori Gray — Date: 9/4/2012
NEPA Compliance Officer

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: _____ Date: _____
Field Office Manager