PMC-EF2a
(2.06.02)

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

RECIPIENT: Incorporated County of Los Alamos **STATE:** NM

PROJECT TITLE : Installation of a Low Flow Unit at the Abiquiu Hydroelectric Facility

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000120	EE0002673	GFO-10-110	GO0

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.

B5.1 Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

Rational for determination:

The County of Los Alamos, Department of Public Utilities (County) will be using DOE ARRA funding to design and construct a powerhouse addition and add a 3 MW low flow turbine generator to the existing Abiquiu hydroelectric plant. The purpose is to produce energy between November and February when flows are usually below 200 CFS. The regular generators are inefficient at this low flow rate, whereas the 3 MW generator can produce 50% more energy than the large turbines at rates less than 200 CFS.

The powerhouse addition will be 980 sq ft and will be attached to the south side of the existing powerhouse facility. Construction of the plant addition will require that the area adjacent to the existing plant be dewatered. This will be achieved by constructing two coffer dams. The coffer dams are required to complete the work during the seasonal construction timeframes that have been established. The powerhouse addition will be constructed and proven water-tight prior to making any penetrations to the existing powerhouse to eliminate the risk of flooding the existing plant.

Installation of the turbine-generator will take place after the powerhouse addition is complete. The turbine and generator will be lowered into place through roof hatches strategically located to allow the placement and removal of this equipment. The turbine, generator, turbine shut-off valve will be set on precast concrete supports on the addition floor. Installation of the auxiliary systems and mechanical equipment will follow. Field representatives from the vendor will be on-site during all critical installations.

Upon completion of the turbine-generator equipment and all supporting systems, the various systems will undergo testing. During testing the appropriate representatives from the contractor, designers and equipment manufacturers will be present to perform the training, start-up and operational tests.

Operation of the project, including the low flow generation turbine, will not modify the discharge from the Abiquiu Dam and reservoir to the lower Rio Chama (per FERC permit). No modifications to the power transformers or transmission lines will occur as part of this project.

FERC Process:

The Abiquiu Hydroelectric Facility has a current FERC license, number 7396, issued on April 16, 1986. This was amended in 2006 and approved in 2008 to add the 3 MW of generation and construct the powerhouse addition.

Prior to filing the amendment application, the County solicited comments from the following agencies:

*U.S. Bureau of Land Management
*U.S. Bureau of Reclamation
*U.S. Fish and Wildlife Service
*State of New Mexico, Department of Fish and Game
*U.S. Army Corps of Engineers Albuquerque District
*Department of Cultural Affairs Historical Preservation District (NM SHPO) and local tribal entities.

No agencies objected to the proposed project but several comments were received:

*Department of Cultural Affairs Historical Preservation District requested that the project area be resurveyed for cultural resources since the old survey was more than 20 years old.

*US Army Corps commented that the proposed project would require section 404 permit pursuant to the Clean Water Act and a section 401 Water Quality Certification.

* FERC ordered that the County to coordinate with the San Francisco Office during the project; coordinate with the New Mexico State Department of Fish and Game to develop a plan to relocate fish and other aquatic animals from behind the cofferdam; and coordinate with federal and State agencies for all additional permits necessary.

These requests have been made a condition of the amended permit issued by FERC on April 30, 2008. Acquisition and compliance with these requests is discussed further.

FERC Environmental Review (NEPA Compliance):

FERC issued a public notice on October 4, 2005 with a deadline of November 7th, 2005. One comment was received from the BLM, stating they had no formal comment or issues with the proposed project. No other comments were received.

Per the FERC Environmental Review the following are stated facts for this project:

*The power house addition will be constructed within the footprint of the existing structures, and the original powerhouse's originally disturbed construction area.

* FERC determined that the small scale of expected ground disturbance and predisturbed condition of the construction location, the expansion would only have "minor potential adverse impacts on the landscape".

*The installation of the cofferdam will take place from the corner of the powerhouse to a near shore area and take place dry; during the low flow months (November – February).

*Project generation and release of flows would remain unencumbered by the cofferdam.

*The County will coordinate with the US Army Corps and New Mexico Surface Water Quality Bureau regarding Section 404 of the Clean Water Act and a Water Quality Certification under Section 401 the Clean Water Act. (Completed Feb. 2, 2006)

*The County will coordinate with the New Mexico Fish and Game to develop BMP for fish and other aquatic animals that are located behind the cofferdam (when it is being dewatered). (Completed Jan 30, 2009)

FERC has issued the following Director Orders and conditions applicable under the amended permit #7396:

1. The application to amend the license for the Abiquiu Project, FERC No. 7396, to install a minimum low flow unit, as filed September 5, 2005, and supplemented on February 2, 2006, by the Incorporated County of Los Alamosa (licensee) is approved as provided in this order.

2. The licensee shall start construction of the powerhouse addition within two years from the date of this order and complete construction within four years from the date of this order.

**A FERC Order, dated April 30, 2008, granted an extension of time to the County for completion of the proposed project. It stated that, "the deadline for completing construction of the powerhouse addition, including the installation of

a new 3.0-MW low-flow turbine generator unit is extended to November 1, 2012".**

3. The licensee shall, at least 60 days prior to the start of construction, submit one copy to FERC the final contract drawings and specifications for the proposed work including design and construction of the coffer dam. FERC may require changes in the plans and specifications to assure a safe and adequate project. If the licensee plans substantial changes to location, size, type, or purpose of the proposed work, the plans and specifications must be accompanied by revised drawings as necessary.

4. The licensee shall consult with the New Mexico Department of Game and Fish to develop a specific plan for capturing and residual fish or other aquatic animals in the area behind the coffer dam, as it is being dewatered, and return them to the Rio Chama. The licensee must file copies of the plan with FERC before the start of any ground disturbing activity.

5. The requirements of the Nationwide Permit and Water Quality Certification filed with FERC will be made a part of this amendment order.

6. Within 90 days from the commencement of operation of the additional generating unit, the licensee must report such starting date. FERC will use the date of commencement of operation to amend Article 51 for the assessment of annual charges.

7. Within 90 days from the completion of construction of the project and installation of the unit, the licensee must submit as-built plans and layouts describing and showing the characteristics of the new low flow unit.

The following permits have been acquired, each with required recommendations and mitigation measures, as follows:

*New Mexico Environment Department - 401 Water Quality Certification

Conditions:

1. Work in the stream channel must be limited to periods of low flow. Avoid working within the channel during spring runoff or summer thunderstorm season.

2. When working in stream channel, flowing water must be temporarily diverted around the work area to minimize sedimentation and turbidity problems. Acceptable diversion structures are non-erosive and include (but are not limited to) sand bags, water bladders, concrete barriers line with plastic, and flumes.

3. Prior to beginning construction, erosion control measures must be installed to prevent the movement of disturbed soil or other contaminants into surface water. Temporary protective mats are required for heavy equipment working in wetlands to minimize impacts to soil and vegetation. Temporary access roads must be restored to pre-project conditions. All areas adjacent to the watercourse that are disturbed because of the project must be replanted with native vegetation. Native riparian and/or wetland species must be used in areas that support such vegetation.

4. All asphalt, concrete, and other construction material must be properly handled and contained to prevent release to the stream channels. All concrete that is to be poured must be fully contained mortar-tight forms to prevent accidental releases to surface waters or ground water. No discharge or any concrete to surface water or ground water may occur. Dumping of waste materials near watercourse is strictly prohibited.

5. All heavy equipment used in the project area must be steam cleaned before the start of the project and inspected daily for leaks. A written log of inspections and maintenance must be completed. Leaking equipment must not be used in or near any watercourse. Park equipment outside of channel when not in use.

6. Spill clean-up materials such as booms and absorbent pads must be available on-site at all times during construction. Report all spills immediately to Surface Water Quality Bureau as required by the New Mexico Water Quality Control Commission regulations (20.6.2.1203).

7. Fuel, oil, hydraulic fluid, or substances of this nature must not be stored within the normal floodplain, and must have secondary containment systems to prevent spills if the primary storage container leaks. Refuel equipment at least 100 feet from the surface water.

8. A copy of the 401 certification must be kept at the project site during all phases of the construction. All contractors involved in the project must be provided a copy of the certification and made aware of the conditions prior to starting construction.

9. The Surface Water Quality Bureau must be notified at least five days before starting construction, to allow time to

schedule monitoring inspections.

*New Mexico Game and Fish Department - Approval of an Aquatic Life Preservation Plan

Conditions/Mitigation Measures:

1. Based on past New Mexico Department of Game and Fish (NMDGF) surveys of the Rio Chama directly downstream of Abiquiu Dam, the fish community likely consists of resident brown trout and stocked rainbow trout.

2. Three months prior to the planned placement of the coffer dam, the County will notify NMDGF who will in turn cease stocking of rainbow trout directly below the dam until the project is completed.

3. After placement of the coffer dam, and when water levels are pumped to a depth sufficient for wading, NMDGF personnel will use seines to rescue any entrained fish.

4. The County will be responsible for providing means for transporting fish over the coffer dam and returning them to the Rio Chama.

Army Corps of Engineers - Clean Water Act 404 Permit

Conditions:

1. Three months prior to the planned placement of the coffer dam, the County of Los Alamos will notify the MNDGF who will in turn cease stocking of rainbow trout directly below the Abiquiu Dam until the project is completed.

2. After placement of the coffer dam, and when water levels are pumped to a depth sufficient for wading, the NMDGF personnel will use seines to rescue any entrained fish.

3. The County will be responsible for providing means for transporting fish over the coffer dam and returning them to the Rio Chama.

4. Required to contact NM Environment Department prior to discharging dredged or fill material to obtain a water quality certification for this project (401 permit).

5. Comply with General Condition No. 17 which requires that no activity is authorized under any Nationwide Permit which is likely to jeopardize the continued existence of a listed or proposed threatened or endangered species, as identified under the Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. The Corps has determined that the proposed project, as described, will have no effect on any listed or proposed endangered or threatened species or its critical habitat.

*New Mexico Historical Preservation Office - Approval/Concurrence

1. Concurrence letter dated March 22, 2006 to the County stated that "a new archeological survey for the project undertaking is not warranted, due to the fact that the 'natural ground' surface in the locus where the work is proposed is obliterated, and largely covered by buildings associated with the Dam".

2. If in the event that cultural material – particularly human remains – are inadvertently discovered during ground disturbances associated with the project, the County's responsibility to ensure that work crews cease disturbance immediately, protect the discovery, and contact County officials. Post review discoveries must be reported to the NM SHPO office and the Advisory Council on Historic Preservation within 48 hours, and follow up consultation must occur as per the procedures in 36 CFR 800.13.

The Incorporated County of Los Alamos, Department of Public Utilities (County) will comply with all regulatory federal agency requirements, as listed above. The impacts to the natural and human environment have been deemed to be less than significant per these agencies if conditions and mitigation measures are followed. The County must comply with all federal agency conditions and mitigations as part of the DOE NEPA determination.

This project comprises information gathering, actions to conserve energy and improvements in generator efficiency; therefore a CX A9 and B5.1 apply.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Insert the following language in the award:

You are required to:
Comply with all conditions and mitigations measures as stipulated (and discussed above) by the amended FERC license #7396, the Army Corps of Engineers CWA 404 Permit, the New Mexico Environment Department CWA 401 Water Quality Certification, the New Mexico Historical Preservation Office, and the New Mexico Game and Fish Department's Aquatic Life Preservation Plan.

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 2/11/2010
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