



January 28, 2010

Mr. Ramon Aberasduri
U.S. Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, CA 95814

DOCKET	
08-AFC-8	
DATE	JAN 28 2010
RECD.	FEB 08 2010

Subject: Kern County, California

Dear Mr. Aberasduri:

The purpose of this letter report is to request your concurrence that the Integrated Gasification Combined Cycle power generating facility called Hydrogen Energy California (HECA or Project) is avoiding all Federal Waters and wetlands and that no permit from the U.S. Army Corps of Engineers (USACE) will be required. The Revised Application for Certification (AFC) was submitted to the California Energy Commission (CEC) in May 2009, and the Project is currently under review by the CEC. Details of the Project, including the Project Description, identification and discussion of Jurisdictional Waters, and proposed avoidance and minimization measures are detailed below.

Project Description

Hydrogen Energy California LLC (HECA LLC) is jointly owned by BP Alternative Energy North America Inc., and Rio Tinto Hydrogen Energy LLC. HECA LLC is proposing to build the Project in Kern County, California. The Project will produce low-carbon baseload electricity by capturing carbon dioxide (CO₂) and transporting it for CO₂ enhanced oil recovery (EOR) and sequestration (storage)¹.

The 473-acre Project Site is located on the southwestern side of unincorporated Kern County, approximately 7 miles west of the outermost edge of the city of Bakersfield and 1.5 miles northwest of the unincorporated community of Tupman, and immediately south of Adohr Road, as shown in Figure 1, Project Vicinity. The Project Site is near a hydrocarbon-producing area known as the Elk Hills Field.

The Project Site is currently used for farming purposes, including cultivation of cotton, alfalfa, and onions. Land surrounding the Project Site is also used primarily for farming purposes, particularly the cultivation of alfalfa and cotton. The West Side Canal/Outlet Canal, Kern River Flood Control Channel (KRFCC), and the California Aqueduct (State Water Project) are located 500, 700, and 1,900 feet south of the Project Site, respectively.

¹ This carbon dioxide will be compressed and transported via pipeline to the custody transfer point at the adjacent Elk Hills Field, where it will be injected. The CO₂ EOR process involves the injection and reinjection of carbon dioxide to reduce the viscosity and enhance other properties of the trapped oil, thus allowing it to flow through the reservoir and improve extraction. During the process, the injected carbon dioxide becomes sequestered in a secure geologic formation. This process is referred to herein as CO₂ EOR and Sequestration.



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The Project will gasify petroleum coke (petcoke) (or blends of petcoke and coal, as needed) to produce hydrogen to fuel a combustion turbine operating in combined cycle mode. The Gasification Block feeds a 390-gross-megawatt (MW) combined cycle plant. The net electrical generation output from the Project will provide California with approximately 250 MW of low-carbon baseload power to the grid. The Gasification Block will also capture approximately 90 percent of the carbon from the raw syngas at steady-state operation, which will be transported to the Elk Hills Field for CO₂ EOR and Sequestration.

The Project also includes the following off-site facilities, as shown on Figure 2, Project Location Map:

- **Electrical Transmission Line** – An electrical transmission line will interconnect the Project to Pacific Gas & Electric's (PG&E) Midway Substation. The proposed transmission line is approximately 8 miles in length.
- **Natural Gas Supply** – A natural gas interconnection will be made with PG&E or SoCalGas natural gas pipelines, each of which are located southeast of the Project Site. The natural gas pipeline will be approximately 8 miles in length. Horizontal Directional Drilling (HDD) will be used to install the pipeline under the Outlet Canal, the Kern River, the KRFCC, and the California Aqueduct.
- **Water Supply Pipelines** – The Project will use brackish groundwater supplied from the Buena Vista Water Storage District, located to the northwest. The raw water supply pipeline will be approximately 15 miles in length. Potable water for drinking and sanitary use will be supplied by West Kern Water District to the southeast. The potable water supply pipeline will be approximately 7 miles in length. HDD will be used to install the potable water pipeline under the Outlet Canal, the KRFCC, and the California Aqueduct.
- **Carbon Dioxide Pipeline** – The CO₂ pipeline will transfer the CO₂ captured during gasification from the Project Site southwest to the custody transfer point. The CO₂ pipeline route will be approximately 4 miles in length. HDD will be used to install the pipeline under the Westside Canal, the KRFCC, and the California Aqueduct.

HDD techniques will be used to install the potable water, natural gas, and CO₂ pipeline linears under these features to avoid impacts to waters of the United States. The approximately 100-foot by 150-foot entry/exit pits required for HDD drilling would also avoid waters of the United States. Therefore, this pipeline will not impact potential waters of the United States. See Figure 3 (Sheets 1 through 4) for the location of the natural gas and potable water line alignment, entry/exit pits locations, and potential



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Waters of the United States. The HECA Project draft frac-out plan is included as Attachment A.

Jurisdictional Waters

Five noteworthy water features are in the Project area. The Kern River and the KRFCC are jurisdictional waters of the United States and/or the state of California. The California Aqueduct is located approximately 1,900 feet southwest of the Project Site. There are also two large and numerous small irrigation canals in the Project area.

Potential Waters of the United States

Formal delineations have not been conducted for the Project Site and linear facilities, though an informal examination was conducted during site assessment surveys. The informal examination was conducted to identify potential waters of the United States that were ultimately avoided during Project design. Potential waters of the United States have been mapped and are shown in Figure 3 (Sheets 1 through 6).

The Kern River is a regionally large and biologically important jurisdictional water. It flows west-southwest through the city of Bakersfield, under State Route (SR) 119 east of Tupman Road. The river changes course and then flows southeastward into Lake Webb, a jurisdictional federal waters. A sizable tributary of the Kern River, the KRFCC is located approximately 700 feet south of the Project Site. The Kern River and its tributaries may be classified as a water of the United States because of the well-defined bed and bank.

The Project Site is within agricultural fields that have a generally flat topography. The only drainage features within the Project Site are irrigation ditches. These irrigation ditches, the West Side Canal and the Outlet Canal, are excavated on dry land and are not considered waters of the United States. These features do not have a direct hydrological connection to the Kern River or KRFCC.

The natural gas interconnection and potable water pipeline linear will be co-located along the same alignment between the Project Site and the intersection of SR 119 and Tupman Road. The natural gas interconnection and potable water linear will both cross under the Outlet Canal, KRFCC, and California Aqueduct in two locations (northwest of the town of Tupman and along SR 119).

The proposed CO₂ pipeline routes proceed predominantly south from the southwestern corner of the Project Site. The CO₂ pipeline will cross under the Westside Canal, KRFCC, and California Aqueduct. On the south side of the California Aqueduct, there are numerous small swales and washes and one ephemeral wash. These swales and washes are not likely to be classified as waters of the United States because of a lack of



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hydraulic connectivity with another jurisdictional water of the United States; however, they may fall within the California Department of Fish and Game (CDFG) jurisdiction as waters of the State.

The electrical transmission line (routes 1A or 1B) travel north and west from the Project Site to the PG&E Midway Substation. The majority of the approximately 8-mile route is adjacent to road shoulders and within areas of active agriculture. Near the PG&E Midway Substation, undeveloped parcels with small wetland features may fall under CDFG jurisdiction as state wetlands and USACE as federal waters.

Wetlands

In the absence of human disturbance or unusual circumstances, an area must possess indicators (characteristics) of three parameters to be considered a federal jurisdictional wetland under Section 404 of the Clean Water Act. This three-parameter approach considers (1) hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology. State wetlands are required to meet only one of the three parameters to be classified as a wetland.

Formal wetland delineations were not conducted for the Project Site and linear facilities, though an informal examination was conducted during site assessment surveys. During the site assessment surveys, the Kern River showed a well-defined “bed and bank” and woody hydrophytic vegetation. Portions of the Coles Levee Preserve north of SR 119 showed indications of ponded water and potentially hydrophytic herbaceous vegetation; these areas would be avoided by HDD. These areas likely meet both state and federal criteria for wetlands.

The natural gas interconnection, potable water linear, and CO₂ line crosses multiple dry swales. Although the vigor of the plants suggests that water flows through the swales during wet periods, the dominance of upland species and lack of hydrophytic species indicate that these swales are not federal jurisdictional wetlands. Additionally, the drainage features on the south side of the California Aqueduct are now isolated and no longer connect to the Kern River or other significant drainage feature due to the construction of the aqueduct.

California Aqueduct

The California Aqueduct conveys water from northern California to southern California for drinking water and irrigation purposes. The California Aqueduct is a significant component of the California Department of Water Resources’ State Water Project. The concrete-lined channel has a typical cross section of 12 meters at the base and an average depth of 9 meters. The Project as designed will not impact the California Aqueduct.



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Avoidance and Minimization Measure

The following avoidance and minimization measure is included in the Revised AFC submitted to the CEC.

BIO-21 Wetlands and Waters of the U.S.

Work within 100 feet of waters of the United States and/or water of the State will incorporate Best Management Practices (BMPs) to ensure against fill and/or degradation of waters. BMPs might include the following:

- Orange fencing to demarcate the extent of work zones;
- During storm events, use of weed-free erosion control mechanisms;
- Periodically inspection of work zones by qualified biologists to ensure that BMP practices are being adhered to.

Reporting on work adjacent to wetlands will be included in the Biological Resource Mitigation Implementation and Monitoring Plan, a monthly report submitted to the CEC, CDFG, and the U.S. Fish and Wildlife Service.

Please refer to CEC docket number 08-AFC-08 in any correspondence concerning the HECA Project. If you have any questions, please contact David Kisner, URS, 2625 South Miller Street, Suite 104, Santa Maria, CA, 93455, email David_Kisner@urscorp.com, or telephone (805) 361-1299.

Thank you,

A handwritten signature in blue ink that reads "David Kisner".

David Kisner
Project Biologist

Attachments

HDD FRAC OUT PLAN

Hydrogen Energy California

1.0 Construction Monitoring

Pipeline construction personnel will monitor all directional drilling during construction:

- Prior to drilling, personnel will be familiarized with frac-out detection, notification and response.
- Monitoring personnel will have appropriate communication equipment to contact the HDD construction foreman.
- Observation of the crossing area is to be conducted during all drilling activities, particularly when mud circulation is active.
- Upon a sustained loss in fluid pressure or loss of circulation, the HDD operator will immediately notify the construction monitors with the position of the drill head.

2.0 Response to Frac-Outs

In the event of a frac-out, the release will be assessed to determine the amount of drilling mud released and potential for the release to reach a waterway. Response measures will vary based on the location of the frac-out:

Land Locations

- Initiate immediate suspension of the directional drilling operation.
- Advise HECA /construction contractor representatives.
- Evaluate the release to determine if containment structures will effectively contain the release.
- Install containment as needed to prevent an uncontrolled release of drilling mud.

Waterway Locations

- Initiate immediate suspension of directional drilling operations.
- Advise HECA/construction contractor representatives.
- Document and monitor release.
- Review drill pressures, pump volume rates, and drill profile.
- Implement steps to contain frac-out material and evaluate the current drill profile to identify means to prevent further frac-out events.

3.0 Containment

Containment, response and clean-up equipment shall be available at both sides of the HDD crossing location. Equipment shall include the following:

- straw bales
- silt fencing
- plastic sheeting
- mud pumps and hose
- mud storage tanks
- vacuum truck

Land Locations

- Deploy appropriate containment measures to contain and recover drilling mud as feasible.
- Remove excess mud at a rate sufficient to prevent an uncontrolled release.

Wetland Locations

- Evaluate the release and deploy appropriate response and containment methods.
- Small surface releases that do not allow practical collection of released material shall be diluted with fresh water and/or the fluid allowed to dry and dissipate naturally.
- Surface releases exceeding a volume that allow complete containment with hand-placed barriers can use small collection sumps (less than 5 cubic yards) to remove released drilling mud by the use of portable pumps and hoses.
- Surface releases exceeding volumes that can be contained and collected using small sumps shall require a suspension of drilling operations until surface release volumes can be brought under control.
- Excess mud will be held within a contained area and removed using pumps at a rate sufficient to maintain secure containment.
- Mud will be stored in a temporary holding tank out of the wetland for reuse or disposal in an approved disposal facility.

In-Stream Locations

- In general, containment is not feasible for in-stream releases. Conditions are to be assessed to determine whether hand-placed containment, recovery or other measures, such as silt curtains, would be effective and beneficial at the specific release site.

- After initial assessment drilling operations will be allowed to resume unless the release poses a safety or environmental threat as determined by the HECA/construction contractor representative.

4.0 Notification

For all drilling mud releases during HDD crossings, the Contractor will notify the drilling foreman. The drilling foreman will immediately notify the appropriate HECA/construction contractor representative as required in the project communications plan. A HECA/construction contractor representative will assess the severity of the release and determine if further notifications to other agencies are required. A HECA/construction contractor representative will complete all agency notifications.

5.0 Clean-up

Clean-up measures will be implemented following frac-outs in on shore areas.

- Drilling mud will be cleaned up using methods that do not cause extensive ancillary damage to existing vegetation. This would include the use of hand tools such as shovels, buckets and brooms. If allowed by the HECA/construction contractor representative, fresh water washes can also be used if deemed beneficial and feasible.
- Containment structures will be pumped out and the ground surface scraped to bare topsoil without causing undue loss of topsoil or ancillary damage to existing and adjacent vegetation.
- Material will be collected in containers for temporary storage prior to removal from the site.
- Potential for secondary impact from the clean-up process is to be evaluated. A HECA/construction contractor representative shall determine if clean-up activities are to continue if physical damage to the site will exceed the benefits of removal activities.
- In general, no clean-up measures will be initiated for in-stream releases. If site specific conditions are such that containment and clean-up may be feasible and beneficial, fresh water washes or other low-impact steps may be employed without undue disturbance to the stream banks and bed.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION
FOR THE *HYDROGEN ENERGY*
CALIFORNIA PROJECT

Docket No. 08-AFC-8

PROOF OF SERVICE LIST
(Rev. 1/27/10)

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DECLARATION OF SERVICE

I, Catherine Short declare that on February 4, 2010, I served and filed copies of the attached Attachment 135-1 (Letter to U.S. Army Corps of Engineers) to Responses to CEC Data Requests Set Two (Nos. 133 through 152), dated January, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [www.energy.ca.gov/sitingcases/hydrogen_energy].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

 X sent electronically to all email addresses on the Proof of Service list

 X by personal delivery or by depositing in the United States mail at San Francisco, CA with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

 X sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

 depositing in the mail an original as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-8
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.


