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Central Valley Regional Water Quality Control Board

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Robert Worl
California Energy Commission
1516 9th Street, MS-15
Sacramento, CA 95814

COMMENTS – AMENDED APPLICATION FOR CERTIFICATION (08-AFC-8A), HYDROGEN ENERGY CALIFORNIA LLC, KERN COUNTY

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff reviewed the Amended Application for Certification (08-AFC-8A) submitted to the California Energy Commission (CEC) by Hydrogen Energy California LLC (Applicant). The Applicant proposes to construct and operate an Integrated Gasification Combined Cycle power generating facility, called Hydrogen Energy California (HECA), in Kern County.

HECA wastewater will primarily be from cooling tower blowdown, gasification solids dewatering, and gas condensate blowdown. Wastewater will be collected and treated with softening and reverse osmosis (RO). Evaporation/crystallization at the 'Zero Liquid Discharge' (ZLD) unit solidifies the RO reject water. All treated water will be reused at the facility. Filter media and all process solid waste will be tested and disposed of at permitted disposal facilities. Gasification solids will be transported off-site for commercial reuse. HECA would also capture 90 percent of the carbon dioxide (CO_2) from the operation for transfer to the Elk Hills Oil Field for CO_2 enhanced oil recovery and sequestration.

Information from the Amended Application and/or comments by Central Valley Water Board staff follow:

1) Table 5.13-3 states an estimated 246,000 cubic yards per year of glassy vitrified gasification solids from the combustion of coal and petcoke would be generated. Page 5.14-37 states the gasification solids will be temporarily stored in on-site bins or containers. Figure 2.45 shows a 'gas solids pad' with dimensions of about 120 feet by 160 feet.

   Comment: The Applicant needs to clarify how the daily volume of gasification solids generated would be temporarily stored at HECA. Will the solids be placed in bins or containers, or be stockpiled directly on the gas solids pad? The Applicant needs to describe the design of the gas solids pad, how precipitation would be contained and conveyed to the storm water collection system or the treatment unit

2) Section 2.2.3.3 states "In the collection sump, the gasification solids are separated from the water."

   Comment: The location and design of the collection sump needs to be provided. The Applicant needs to describe the operational procedures to remove and dispose of the gasification solids and water from the collection sump.

3) On page 5.13-10, the Applicant states "Storm water within the process plant area where solids are present will be collected and conveyed to the solids handling water collection facility. The collection facility will be constructed of concrete and will provide for mobile equipment access to remove accumulated solids."

   Comment: The Applicant needs to provide additional details about the location and design of the solids handling collection facility. Does this facility include the three stormwater retention ponds with impermeable liners? Is the 'collection sump' described in item 2 above part of the solids handling collection facility?

4) The Preliminary Stormwater Drainage Plan (Figure 2-45) shows two 'solids drain sumps' (about 60 feet by 120 feet) in the feedstock storage area (also described as the feedstock barn).

   Comment: The Applicant needs to provide additional information about the design of the solids drain sumps and the operational procedures to remove the solids and fluid that collect in the sumps.

5) Comment: The Applicant needs to submit information about potential chemical constituents of concern in the water discharged to the gasification solids collection sump and solids drain sumps or that could be mobilized from the solids in these sumps.

6) Section 5.14.2.4 of the document discusses how Reports of Waste Discharge are specifically for discharges of waste that could affect the waters of the state. It goes on to state how the project has been designed for ZLD off-site and that no wastes will be disposed to waters of the state, and that a Report of Waste Discharge would not be required for the on-site material storage or "disposal systems."

   Comment: Discharges of waste to land include those areas of the project where sumps collect wastewater or fluids and pads that store solid waste that could be subject to runoff carrying soluble constituents of concern. Waters of the State include both surface and groundwater. As noted in comments above, the design of the sumps and storage area pads containing the wastes may be such that submittal of a Report of Waste Discharge may be required.

The Applicant proposes to manage all stormwater on-site. Therefore, it appears there is no need to obtain an industrial stormwater permit for the facility.

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