

CALIFORNIA ENERGY COMMISSION

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March 28, 2013

California Energy Commission

DOCKETED
08-AFC-8A

TN # 70176

MAR. 28 2013

Mr. David Warner
Director of Permit Services
San Joaquin Valley Air Pollution Control District
34946 Flyover Court
Bakersfield, CA 93308

**Re: Comments on the Hydrogen Energy California Project (08-AFC-8A)
Preliminary Determination of Compliance (PDOC)**

Dear Mr. Warner,

Energy Commission staff have reviewed the San Joaquin Valley Unified Air Pollution Control District's (District) Preliminary Determination of Compliance (PDOC) for the Hydrogen Energy California (HECA) project and have the following comments for your consideration for inclusion in the Final Determination of Compliance (FDOC).

Comments on PDOC Engineering EvaluationRule 2201 Compliance Issues

Staff believes that there are two Rule 2201 compliance issues that require revisions. First, and most importantly, Section 4.8.1 of this rule requires a volatile organic compound (VOC) distance offset ratio of 1.5:1, not 1.3:1. Second, staff believes that the DOC needs to mention that particulate matter less than 2.5 microns (PM2.5) best available control technology (BACT) is required for the project's emissions sources since PM2.5 is listed as an affected pollutant in Section 3.4 of the rule. Staff recognizes that this request is perfunctory since particulate matter less than 10 microns (PM10) BACT would be the same as PM2.5 BACT, but we still believe that it should be clearly noted in the FDOC that BACT is also required for PM2.5 emissions.

Federal MATS Rule Compliance

Staff believes that compliance with the federal Mercury and Air Toxics Standards (MATS) rule (40 CFR 63, Subpart UUUUU) needs to be discussed in the engineering evaluation, and that appropriate conditions need to be added to assure rule compliance. While staff acknowledges that enforcement of the MATS regulation has been stayed by the United States Environmental Protection Agency (U.S. EPA) in response to petitions for administrative reconsideration, this does not mean the regulation has been revoked. In fact, the proposed rule update was published in the Federal Register on November 30, 2012, and the public comment period ended on January 7, 2013. Therefore, the District should assume that by the time the project begins operation, the MATS

regulation will be in force and provide necessary permit conditions for MATS rule compliance. The affected sources are the combustion turbine generator/heat recovery steam generator (CTG/HRSG) and coal dryer that need to meet the particulate, mercury, and hydrogen chloride emission limitations of this rule. Specific conditions should relate to the emissions limits in the MATS rule for Integrated Gasification Combined Cycle sources; and provide for emission control system monitoring and maintenance requirements, such as activated carbon change out requirements, for the mercury emissions control systems.

SO₂ for PM₁₀ Interpollutant Offset Ratio

Staff is concerned that the approved 1 to 1 sulfur dioxide (SO₂) for PM₁₀, and by proxy SO₂ for PM_{2.5} interpollutant offset ratio, which is a much lower ratio than has been allowed in past projects, would not provide for a net air quality benefit. The distance offset ratio for PM_{2.5} is also 1 to 1, meaning that regardless of the distance of the SO₂ emission reduction credits, the total approved SO₂ for PM_{2.5} ratio for the HECA project is 1 to 1. Staff would like to see additional analysis that supports the use of this offset ratio in the FDOC. Staff is also aware that the District's Governing Board approved the District's 2012 PM_{2.5} Plan for inclusion in the State Implementation Plan (SIP) in December 2012, which was then approved by the California Air Resources Board (ARB) on January 24, 2013. That plan calls for a 4.1 to 1 sulfur oxides (SO_x) for PM_{2.5} interpollutant offset ratio for the San Joaquin Valley, based on changes to the method of interpollutant offset ratio determination due to the former District method being rejected by U.S. EPA. Staff would like to understand why the older U.S. EPA-rejected interpollutant offset ratio determination method is still being used for HECA, and why the 2012 PM_{2.5} Plan's updated interpollutant offset ratio is not being required for the HECA project. Would the U.S. EPA accept this more modest interpollutant offset ratio for HECA due to the date the application was deemed complete by the District?

Mitigation Agreement

Staff is requesting that the FDOC provide more details on the mitigation agreement(s) that the District is entering into with the project applicant. Specifically, staff is requesting that a copy of the agreement be provided as an appendix to the FDOC; and requests that the timing of the payment of fees and the requirements or goals for use of the emissions-reduction funds, such as being preferentially used to create emissions reduction in the San Joaquin Valley portion of Kern County as close to the project site as possible, be clearly identified in the attached agreement or otherwise stated in the FDOC.

Cooling Tower PM_{2.5} Fraction Assumption

Staff does not agree with the District's statement on page 33 of the engineering evaluation that notes that the PM₁₀ and PM_{2.5} fractions for the cooling tower PM emissions are conservative. Staff does agree that the PDOC is mildly conservative for PM₁₀ when it assumes 100 percent of the cooling tower PM is PM₁₀. However, staff believes that the rationale used by the applicant for the ratio of PM_{2.5} to PM₁₀ of 0.6:1 for the cooling tower emissions is flawed. The rationale provided by the applicant notes

that this ratio is cited in the South Coast Air Quality Management District's (SCAQMD's) particulate size fraction in the California Emission Inventory Development and Reporting System (CEIDARS) table from the SCAQMD California Environmental Quality Act (CEQA) website. However, the CEIDARS particulate size fraction data was originally produced by the ARB and review of the original CEIDARS particulate size fraction table from ARB shows that there is no cooling tower category. In the SCAQMD's version of the CEIDARS table, ARB's "unspecified" category for a PM10 to PM2.5 ratio was used in lieu of other available data for cooling towers. This shows that this particulate size fraction data is not specific to cooling towers and is not technically supportable. Staff believes that at least one specific CEIDARS category could be more representative of cooling towers than the "unspecified" category, namely the PM Profile ID #200 for evaporation that provides a PM10 fraction of 0.96 and PM2.5 fraction of 0.925.

Staff is willing to accept a defensible cooling tower particulate size fraction reference; however, to date staff is not aware of such a defensible reference. Staff believes that the District should investigate this further and if possible provide a more technically defensible particulate size fraction reference and revise the cooling tower particulate matter (PM10 and PM2.5) emissions appropriately. If no specific particulate size fraction data reference for cooling towers is available, to be more protective of public health the District should assume 100 percent of the PM10 is PM2.5.

Appendix K – Ambient Air Quality Impact and Health Risk Report

Staff believes that the background concentrations used should reflect the requirements of the standard. Staff believes that exceptional event data, as provided in the U.S. EPA AirData website database (http://www.epa.gov/airquality/airdata/ad_rep_mon.html) should be used to determine the background used for National Ambient Air Quality Standards (NAAQS) modeling analysis. Staff believes that showing background and modeled impact concentrations that are both well above the PM10 24-hour NAAQS, when the air basin is in compliance with this NAAQS, is not providing an accurate portrayal of the actual background or project impacts. Therefore, we suggest that the FDOC use background data that excludes exceptional event data that can be obtained from the U.S. EPA AirData website for the NAAQS impact analysis.

Staff also notes that the following statement on page 32 does not appear to be correct. *"The modeled maximum concentrations of SO₂, NO₂, PM_{2.5} and PM₁₀ are also significantly below the secondary NAAQS that have been established by EPA."* While this statement is true for SO₂, nitrogen dioxide (NO₂), and PM₁₀, the ambient and ambient plus project impact concentrations of PM_{2.5} are both above the secondary NAAQS. Therefore, staff believes that this statement needs to be revised.

Comments on PDOC Conditions

Mitigation Agreement Conditions (All Permit Units)

There are two conditions covering mitigation agreements to fund emissions reductions, provided as Conditions 1 and 2 for all permit units. However, the PDOC only provides

information on one such agreement. Having two conditions is confusing, doesn't seem to use the same nomenclature for the mitigation agreement provided in Appendix G of the PDOC, and may be redundant. Please also see the comment above on the engineering evaluation regarding the voluntary emissions reduction funding agreement(s).

Gasification Solids Material Handling and Storage (S-7616-22-0) Condition 24
Staff requests that a specific reference method, such as an American Society for Testing and Materials (ASTM) method, be added to the condition to define the requirements in "bringing the sample to dryness in a drying oven."

Combined-Cycle Power Generating System (S-7616-26-0) Condition 85
The first sentence of Condition 85 establishes that the California Department of Oil, Gas and Geothermal Resources (DOGGR) will be the responsible agency for approval of the OEHI MRV Plan. However, this is not the case at this time based on current regulations. Currently, the Energy Commission would be the responsible agency for ensuring CO₂ sequestration. We believe this will change at some point as more regulations are promulgated, but we cannot at this time confirm that DOGGR will be the agency responsible for MRV approval. Therefore, staff requests that sentence be revised as follows:

"Except as noted below, the separated pre-combustion CO₂ stream shall be transported to and sequestered by Occidental of Elk Hills (OEHI) in compliance with the latest OEHI CO₂ EOR Project Monitoring, Reporting and Verification (MRV) Plan, or equivalent, that has been approved by the responsible state agency to assure sequestration of the CO₂ transported to and used by the OEHI CO₂ EOR Project."

Combined-Cycle Power Generating System (S-7616-26-0) Conditions 86
The District is not the responsible agency for assuring compliance with the SB 1368 Emissions Performance Standard (EPS). Regulations implementing SB 1368 identify the California Public Utilities Commission as the responsible agency for investor-owned utilities and the Energy Commission as the responsible agency for publicly-owned utilities. Furthermore, the emissions limit in this condition as written cannot be complied with given the EPS calculation method currently proposed by staff. Staff suggests that this condition be revised to provide a CO₂ emissions limit on the GHG BACT finding and that the calculation of the CO₂ emissions used for compliance with this condition be provided in the condition or in additional conditions. Staff also would like to note that we believe that the CO₂ emissions calculation to be used to demonstrate compliance with the CO₂ BACT limit should at a minimum include the emissions from the CTG/HRSG, coal dryer, and CO₂ vent.

Coal Dryer Condition Clarification

The coal dryer is mentioned to be part of permit unit S-7616-20, but all of the coal dryer conditions are located within the permit for unit S-7616-26 where it is not mentioned in the permit unit description. For clarity, staff believes that the coal dryer should either be

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removed from the description from permit unit S-7616-20 and added to the description of permit unit S-7616-26, or provided as a separate permit unit.

Firewater Pump Engine (S-7616-40-0) Condition 14

Condition 14, while appropriate for the emergency generator engines, does not seem appropriate for the firewater pump. Staff recommends that this condition be deleted or revised to describe what should be a fire based emergency definition.

Condition Ordering

Staff would prefer that the District provide general facility-wide conditions separately from the permit unit-specific conditions. However, assuming the District won't change that policy, staff requests that the District re-order the conditions so that the general conditions, and the conditions that would be complied with and removed by the time of Permit to Operate is issued, are moved to the end of the condition list for each permit unit. This would simplify the permit condition numbering and coordination between the District and the Energy Commission, particularly for potential project amendments, allowing for condition number consistency between agencies throughout the project's life.

Staff is continuing its review of the PDOC while completing the Preliminary Staff Assessment for HECA and may provide additional comments prior to the April 17th comment deadline if any new major issues are discovered. If you have any questions, please contact Gerry Bemis of my staff at (916) 654-4960. Thank you for the opportunity to comment on the Hydrogen Energy California Project's Preliminary Determination of Compliance.

Sincerely,



MATT LAYTON, Manager
Engineering Office
Siting, Transmission and Environmental
Protection Division

cc: Docket