

DOCKETED

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Project Title:	Hydrogen Energy Center Application for Certification Amendment
TN #:	200299
Document Title:	Letter to Mr. David Warner, Director of Permit Services, San Joaquin Valley Air Pollution Control District
Description:	Requested San Joaquin Valley Air Quality District Review and Approval of Proposed Revisions to FDOC Conditions and Permit Unit Description for Incorporation into the Energy Commission's Final Staff Assessment/Final Environmental Impact Statement for the Hydrogen Energy California Project (08-AFC-8A)
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
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CALIFORNIA ENERGY COMMISSION

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August 21, 2013

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

Requested San Joaquin Valley Air Quality District (SJVAPCD) Review and Approval of Proposed Revisions to FDOC Conditions and Permit Unit Description for Incorporation into the Energy Commission's Final Staff Assessment/Final Environmental Impact Statement (FSA/FEIS) for the Hydrogen Energy California Project (08-AFC-8A)

Dear Mr. Warner:

Energy Commission staff have reviewed the San Joaquin Valley Air Pollution District's (District) Final Determination of Compliance (FDOC) and offer the following comments. First, we commend the District for their thorough review of this complex application. We have discovered a few issues with the conditions and the permit unit descriptions that we feel should be addressed in the Final Staff Assessment/Final Environmental Impact Statement (FSA/FEIS). Energy Commission staff requests that the District review the following revisions/additions to the conditions and the permit unit descriptions in the FDOC. We ask you to provide written comments noting acceptance, disagreement, or alternate edits to the proposed changes provided below, and request that the District provides a written response to the condition applicability question and the significant digit and number format question provided below. Additionally, please confirm in writing our understanding that the District would implement the agreed revisions into the conditions and permit unit description within the project's Permit to Operate.

Proposed Changes to the FDOC Conditions/Permit Unit Descriptions

Permit Unit S-7616-18, Condition 6

Discussion: This condition relates to railcars, and is properly included under permit unit S-7618-17, but should be deleted here since the related condition for truck trailers is included as condition 7.

Proposed Revision:

6. ~~After materials are unloaded from rail cars excess material shall be removed from exterior of rail cars such that there is no material spillage from rail car in subsequent transit. [District Rule 4102]~~

Permit Unit S-7616-19, Description

Discussion: This permit unit currently contains two descriptions. The first is the original description and the second is a revised description. However, the revised description does not adequately cover the fact that the fluxant loading, along with the silo and unloading vent, are included within in this permit unit nor does it adequately describe that the fluxant loading is pneumatic loading. We propose to retain the second description and amend it to include pneumatic fluxant loading. Staff does not have another recent pneumatic loading permit from the District, so we are not in a position to determine if other conditions related to pneumatic loading may be missing from the conditions for this permit unit. We request that the District provide such conditions, if any, so that we may add them to the FSA.

Proposed Revision:

~~FEEDSTOCK STORAGE, BLENDING, AND RECLAIM SYSTEM INCLUDING:
TRANSFER TOWER #1 (THAT TRANSFERS FEEDSTOCK FROM RAIL AND TRUCK
UNLOADING AND TRANSFER SYSTEMS, S-7616-17 AND -18) SERVED BY A
DUST COLLECTOR WITH COAL CRUSHER, REJECTS CONVEYOR(S);
FEEDSTOCK STORAGE BUILDING (BARN) WITH A SEPARATE COAL AND
PETCOKE STORAGE AREAS, STORAGE CONVEYOR(S), DISCHARGE CHUTE(S),
AND RECLAIM CONVEYOR(S); AND TRANSFER TOWER #2 (THAT TRANSFERS
MATERIAL TO THE FEEDSTOCK DRYING AND GRINDING/CRUSHING
OPERATION, S-7616-20) SERVED BY TWO DUST COLLECTORS (ONE
OPERATING AND ONE SPARE), TWO ENCLOSED TRANSFER CONVEYORS~~

FEEDSTOCK STORAGE, BLENDING, AND RECLAIM SYSTEM INCLUDING:
TRANSFER TOWER #1 (THAT TRANSFERS FEEDSTOCK FROM RAIL AND TRUCK
UNLOADING AND TRANSFER SYSTEMS, S-7616-17 AND -18) SERVED BY A
DUST COLLECTOR WITH COAL CRUSHER, REJECTS CONVEYER(S);
FEEDSTOCK STORAGE BUILDING (BARN) WITH A SEPARATE COAL AND
PETCOKE STORAGE AREAS, STORAGE CONVEYOR(S), DISCHARGE CHUTE(S),
AND RECLAIM CONVEYOR(S); AND TRANSFER TOWER #2 (THAT TRANSFERS
MATERIAL TO THE FEEDSTOCK DRYING AND GRINDING/CRUSHING
OPERATION, S-7616-20) SERVED BY TWO DUST COLLECTORS (WITH ONLY
ONE OPERATING AT A SINGLE TIME), TWO ENCLOSED TRANSFER
CONVEYORS; AND PNEUMATIC FLUXANT UNLOADING, 30,000 CU FT FLUXANT
SILO, AND FLUXANT UNLOADING VENT SERVED BY A DUST COLLECTOR

Permit Unit S-7616-26, Initial Commissioning and Twelve Month Emissions Limits.

Discussion: Condition 21 notes that "The total mass emissions of NOx, SOx, PM10, and VOC that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits specified in this document ". However, the consecutive twelve month emissions limits are only specified in the FDOC's engineering analysis and not in the conditions and PM2.5 should be added to this condition. We

suggest that Condition 21 be revised to explicitly state these facility-wide emissions limits and to coordinate with the addition of a condition for commissioning emission limits for the gasification flare. The FSA will need to include a condition specifying the consecutive twelve month emissions limits. Staff will add this condition to the FSA if the District does not.

Proposed Revision:

21. The total mass emissions of NO_x, SO_x, PM₁₀, PM_{2.5}, and VOC that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits for the entire stationary source, which are 317,771 lb/year for NO_x, 64,574 lb/yr for SO_x, 180,183 lb/yr for PM₁₀, 159,654 lb/yr for PM_{2.5}, 69,875 lb/yr for VOC, and 544,875 lb/yr for CO. ~~specified in this document.~~ The total mass emissions of CO that are emitted from this permit unit during the commissioning period shall not exceed 332.1 tons-CO. NO_x and CO total mass emissions shall be determined from CEMs data and SO_x, PM₁₀, PM_{2.5}, and VOC total mass emissions may be calculated. [District Rule 2201]

Permit Unit S-7616-26, Condition 81

Discussion: Condition 81 for permit unit S-7616-26 does not reflect revisions to the CO₂e emissions for the facility, which included revisions to the CO₂ vent and other sources, that were at least partially based on the addition of the limestone fluxant to the project description. Therefore, we request that the condition be updated to reflect the updated CO₂e emissions estimate for the entire stationary source.

Proposed Revision:

81. CO₂e emissions from entire stationary source (S-7616) shall not exceed 595,048,593,965 tons per rolling 12-month period. The permittee shall calculate the CO₂e emissions for each calendar month and shall maintain such records onsite for District review. Calculations shall be based on: monthly fuel consumption at the facility and emission factors of fuel (natural gas and diesel CO₂e emission factors shall be based on accepted emission factors and syngas CO₂e factors shall be based on the amount of carbon in the syngas based on latest monitoring data used to demonstrate carbon removal efficiency); CO₂ vent flow rate and the latest monitoring data; nitric acid emission rate (lb-N₂O/ton of HNO₃ produced) from the latest source test and production; recharge records of circuit breakers; and fugitive emission calculations based on component count and emission factors from EPA document Protocol for Equipment Leak Emission Estimates (EPA-453/R-95-017), Table 2-1, SO₂MI Average Emissions Factors and the applicable control efficiency for those components; and urea absorber hours of operation and vendor guarantee of CO₂e emission factor. [District Rule 2410]

Permit Unit S-7616-26, Condition 86

Discussion: Condition 86 for permit unit S-7616-26 should note that the MWh and GWh bases for the emissions limits are “gross” and not “net” since that is the basis that corresponds to those emissions limits. Additionally, this condition should note that the gross generation does not include any generation from the fertilizer plant steam production and only includes generation from the gas turbine and from the steam produced in the gas turbine’s HRSG. Finally, this condition should use the same presentation of numeric values, “scientific E notation”, as presented in the MATS regulation both for consistency and for accuracy of the two significant digits presented for the emissions limit values in this regulation.

Proposed Revision:

86. During normal operation (excluding startup and shutdown), the emission rates from the CTG/HRSG stack and the feedstock dryer stack when firing on hydrogen-rich fuel shall not exceed any of the following: filterable particulate matter: $7.0E-20.07$ lb/MWh; hydrogen chloride: $2.0E-3$ lb/MWh or sulfur dioxide: $4.0E-10.$ lb/MWh; mercury: $3.0E-30.003$ lb/GWh based on a 30-day rolling average of gross MWh/GWh electricity generation that does not include any supplemental electricity generation provided though fertilizer manufacture steam generation. [District Rules 2201 and 4002 and 40 CFR 63 Subpart UUUUU]

Permit Unit S-7616-30, New Condition

Discussion: Staff understands that the gasification flare emissions during the commissioning period would exceed operating period emissions rates. Therefore, a commissioning period emissions limit needs to be added to allow greater emissions during the commissioning of the gasifier. We prefer that the District take the lead in establishing gasification flare commissioning emissions within their conditions. The FSA will need to include this condition and staff will add this condition to the FSA if the District does not. The condition should include a provision that notes that annual emissions limits cannot be exceeded during initial commissioning activities. Also, if additional commissioning conditions, such as those provided for the gas turbine/HRSG permit unit, are also applicable for the gasification flare then we would ask that the District provide such conditions for incorporation.

Proposed Revision:

70. During the commissioning period, emission rates from the flare shall not exceed any of the following limits: NO_x (as NO₂) – 50 tons; SO_x – 1.4 tons; PM₁₀/PM_{2.5} – 0.2 ton; CO – 523 tons; or VOC – 0.1 ton. The total mass emissions of NO_x, SO_x, PM₁₀/PM_{2.5}, and VOC that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits specified in Condition 21 for Permit Unit S-7616-26. [District Rule 2201]

Staff Question Regarding Condition Applicability

Discussion: As the District may be aware based on a review of the PSA, staff has separated certain facility-wide conditions to avoid repeating them. In our review of the FDOC, we moved a few additional conditions we considered to be facility-wide conditions, including repeated conditions allowing alternate equipment. These alternate equipment conditions were included in many - but not all - of the permit units, and staff is uncertain whether or not that was done on purpose. Staff needs to understand if the alternate equipment conditions are specifically not allowed for any of the permit units.

Staff Questions Regarding Presentation of Numeric Values in Conditions

Discussion: As shown above in our comments on the numeric value presentation in permit unit 7616-26 condition 86, the exact presentation of the numeric values in the conditions are important for compliance determination. For example the ammonia slip limit is noted to be 5.0 ppm, which we would interpret to mean values rounding to 5.0 (5.04 would round to 5.0) are in compliance and values rounding above 5.0 are not in compliance (5.06 would round to 5.1). However, if this value would have been presented as 5 ppm then the rounding precision would have gone up an order of magnitude (5.4 would be in compliance and 5.6 would not be in compliance). So the precision of the numeric values is very important for compliance demonstrations. Therefore, staff requests that the District to review the presentation of all numeric values in the conditions and provide any changes necessary to meet regulatory precision or District required precision for compliance demonstrations.

Requested District Review:

Please confirm that these alternate equipment conditions are acceptable for all of the project's permit units, or identify which permit units should not be allowed to follow these conditions so we can properly include them in the FSA as appropriate in our general facility conditions.

If possible, we request the District provide written comments on the above proposed revisions and condition applicability question prior to the PSA workshops scheduled to start September 17, 2013.

If you have any questions, please contact Gerry Bemis of my staff at (916) 654-4960. Thank you for your response to this letter.

Sincerely,



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

DECLARATION OF SERVICE

I, Alicia Campos, declare that on August 21, 2013, I served and filed copies of the Letter to Mr. David Warner dated August 21, 2013. The most recent Proof of Service List, which I copied from the web page for this project at: <http://www.energy.ca.gov>, is attached to this Declaration.

(Check one)

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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am over the age of 18 years.

Dated: August 21, 2013

Alicia Campos
Siting, Transmission and Environmental Protection Division