

## DOCKETED

<b>Docket Number:</b>	08-AFC-08A
<b>Project Title:</b>	Hydrogen Energy Center Application for Certification Amendment
<b>TN #:</b>	200638
<b>Document Title:</b>	SJVAPCD Response to CEC Proposed Revisions to FDOC Conditions and Permit Unit Description
<b>Description:</b>	N/A
<b>Filer:</b>	Tiffani Winter
<b>Organization:</b>	San Joaquin Valley Air Pollution Control District
<b>Submitter Role:</b>	Public Agency
<b>Submission Date:</b>	9/30/2013 9:29:23 AM
<b>Docketed Date:</b>	9/26/2013

September 23, 2013

Mr. Matt Layton  
Engineering Office  
California Energy Commission  
1516 Ninth St  
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**RE: 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**  
**Project: 08-AFC-8A**

Dear Mr. Layton:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the California Energy Commission's (CEC) 8/21/13 letter, which requests the District's review of proposed revisions to the Final Determination of Compliance (FDOC) conditions and unit descriptions for Hydrogen Energy California LLC (HECA) project (08-AFC-8A).

Please note that the District made its Final Determination of Compliance for the HECA project on 7/8/13 and forwarded it to the CEC for their consideration and potential inclusion of such conditions in the CEC licensing process. In your 8/21/13 letter, the CEC is proposing various changes to the FDOC conditions. The 8/21/13 letter identifies certain issues with conditions and equipment descriptions in the FDOC conditions which the CEC believes should be revised when incorporated into the CEC's forthcoming Final Staff Assessment/Final Environmental Impact Statement (FSA/FEIS) for the project. Below is a summary of each suggested change and our response.

**Comment 1:**

Permit unit S-7616-18 coal/coke truck unloading and transfer operation incorrectly includes condition 6 that requires the removal of material from exterior of rail cars. This condition should be deleted as there are no rail cars associated with this permit unit. Existing condition 7 includes a similar requirement for rail truck trailers.

**Response 1:**

The District concurs with this recommendation.

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Executive Director/Air Pollution Control Officer

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**Comment 2:**

Permit unit S-7616-19 for the feedstock storage and blending operation includes two different equipment descriptions, and neither description accurately describes the associated fluxant pneumatic receiving and storage silo. Additional conditions may be necessary for the fluxant pneumatic receiving operation.

**Response 2:**

The District concurs with the proposed revised equipment description. Additionally, the existing permit conditions including, but not limited to, conditions 9, 10, 11, 12, 16 adequately enforce needed requirements for the fluxant receiving and storage system. No additional conditions for this operation are necessary.

**Comment 3:**

Permit unit S-7616-26 for the combined cycle power generation unit condition 21 states that the NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions during commissioning shall accrue towards the total annual emissions assessed to the facility, but does not specify the total annual emissions in the permit condition. The condition should specify the applicable NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and VOC facility wide emission limits.

**Response 3:**

The District concurs that condition 21 should specify the applicable total annual facility emission limit, however, the proposed condition included somewhat conflicting limits for CO.

The following condition should be used instead:

- The total mass emissions of NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, 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 NO<sub>x</sub> (as NO<sub>2</sub>): 317,771 lb/yr, SO<sub>x</sub> (as SO<sub>2</sub>): 64,574 lb/yr, PM<sub>10</sub>: 180,183 lb/yr, PM<sub>2.5</sub>: 159,654 lb/yr, and VOC: 69,875 lb/yr. The total mass emissions of CO that are emitted from this permit unit during the commissioning period shall not exceed 332.1 tons-CO. Commissioning emissions of CO shall not accrue toward the twelve month CO emission limit of 544,875 lb/yr. NO<sub>x</sub> and CO total mass emissions shall be determined from CEMs data and SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC total mass emissions may be calculated. [District Rule 2201]

**Comment 4:**

Permit unit S-7616-26 for the combined cycle power generation unit condition 81 does not accurately reflect the increased CO<sub>2e</sub> emissions due to the use of fluxant in the gasifier. As a result, the facility wide CO<sub>2e</sub> emission limit should be increased from 593,965 ton per rolling 12 month period to 595,048 ton per rolling 12 month period.

**Response 4:**

The District concurs with the proposed revision.

**Comment 5:**

Permit unit S-7616-26 for the combined cycle power generation unit condition 86 should be clarified to reflect that the toxic emission limits are based on gross electrical output of the gas turbine engine, should not include the amount of electrical output from recovered heat from the fertilizer manufacturing process, and should be expressed in scientific notation.

**Response 5:**

The District concurs with the proposed revisions.

**Comment 6:**

Permit unit S-7616-30 for the gasification system flare should add a new condition that allows for higher emissions from the flare during initial commissioning operation of the facility.

**Response 6:**

The District has reviewed the proposed addition of higher emission limits during initial commissioning operation. We have reviewed the modeling performed for the project and have concluded that the modeling performed included the higher emission from the flare during commissioning operations. As such, inclusion of the higher emission limits for the flare during commissioning operations is consistent with the District's previous analysis.

The emission limits described below (somewhat different than proposed by the CEC) do not affect our conclusion that the project complies with all District Rules. Additionally, additional conditions are suggested to be included that require that emissions during commissioning activities be minimized to the extent feasible.

Listed below are suggested new and modified conditions to address emissions during commissioning activities for the gasification flare:

- The owner/operator of the facility shall minimize the emissions from the flare to the maximum extent possible during the commissioning period. [District Rule 2201]
- Commissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the construction contractor to insure safe and reliable steady state operation of the gasification system. [District Rule 2201]

- Commissioning period shall commence when all mechanical, electrical, and control systems are installed and individual system startup has been completed. The commissioning period shall terminate when the plant has completed initial performance testing, completed final plant tuning, and is available for commercial operation. [District Rule 2201]
- The permittee shall submit a plan to the District at least four weeks prior to the first firing of this unit, describing the procedures to be followed during the commissioning period. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. [District Rule 2201]
- Emissions from the flare, during the non-emergency combustion and commissioning of natural gas, shall not exceed any of the following (based on total gas combusted): PM10: 0.003 lb/MMBtu; NOx (as NO2): 0.068 lb/MMBtu; VOC: 0.0013 lb/MMBtu; CO: 0.08 lb/MMBtu; or SOx: 0.00214 lb/MMBtu. [District Rule 2201] N
- Emissions from the flare, during the non-emergency combustion and commissioning of syngas and waste gas, shall not exceed any of the following (based on total gas combusted): PM10: 0.008 lb/MMBtu; NOx (as NO2): 0.068 lb/MMBtu; VOC: 0.0015 lb/MMBtu; CO: 2.0 lb/MMBtu on unshifted syngas and 0.37 lb/MMBtu on shifted syngas; or SOx: 0.002 lb/MMBtu. [District Rule 2201]
- During the commissioning period, emissions from flare shall not exceed any of the following: NOx: 181.2 lb/hr; SOx: 6.0 lb/hr; PM10: 9.9 lb/hr; CO: 4,000.0 lb/hr; or VOC: 2.1 lb/hr. [District Rule 2201]
- Emissions from the planned flaring (excluding commissioning) shall not exceed any of the following: NOx: 2,399.0 lb/day; SOx: 79.7 lb/day; PM10: 238.2 lb/day; CO: 18,282.5 lb/day; or VOC: 51.2 lb/day. [District Rule 2201]
- The total mass emissions of NOx, SOx, PM10, PM2.5, 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 NOx (as NO2): 317,771 lb/yr, SOx (as SO2): 64,574 lb/yr, PM10: 180,183 lb/yr, PM2.5: 159,654 lb/yr, and VOC: 69,875 lb/yr. The total mass emissions of CO that are emitted from this permit unit during the commissioning period shall not exceed 523.0 tons-CO. Commissioning emissions of CO shall not accrue toward the twelve month CO emission limit of 544,875 lb/yr. [District Rule 2201]

- The permittee shall demonstrate compliance with the gasification flare commissioning emission rate limits specified in this document through calculations which include the measured flow rates and heating value of the gases incinerated in the flare and District-accepted emission factors. [District Rule 2201]

**Comment 7:**

Several permit units include conditions that allow alternate equivalent equipment. However, such conditions are not included on all permit units.

**Response 7:**

The alternate equivalent equipment conditions only apply to those units having those conditions. The applicant requested such flexibility for certain permit units (S-7616-17 through -19, -23, -25, -30 through -33, and -38 through -40) due to the uncertainty that at time of installation some of the specific descriptions (such as model numbers, equipment rating, etc.) listed in the FDOC conditions would be readily available. The permit units without this particular set of conditions have not been approved for such flexibility, however, such units have more general equipment descriptions.

**Comment 8:**

The number of significant figures in various permit conditions should be reviewed and revised to be consistent with required precisions of emission limits and District practice.

**Response 8:**

The District concurs with the CEC's suggestion regarding the appropriate significant figures to be included in emission limits. The District has reviewed the presentation of numeric values in the FDOC conditions and offers the recommendations described below.

The following ppm values are recommended to be changed to decimals:

- Unit S-7616-24-0: Condition # 9. Vent stream concentration shall not exceed 1,000.0 ppm-CO, 44.0 ppm-VOC, 10.0 ppm-COS, nor 10.0 ppm-H<sub>2</sub>S. [District Rules 2201 and 2410]
- Unit S-7616-23-0: Condition # 42. For the sulfur recovery unit thermal oxidizer, operator shall not discharge or cause the discharge of any gases into the atmosphere in excess of 10.0 ppm by volume (dry basis) of H<sub>2</sub>S at zero percent excess air (moving 3-hour average). [District Rule 2201] N

The following MMBtu/hr values are recommended to be changed to decimals:

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- Unit S-7616-25-0: Condition #15. The maximum allowable heat input of the boiler shall not exceed 213.0 MMBtu/hr (HHV). [District Rule 2201]
- Unit S-7616-31-0: Condition #18. During planned flaring events, no more than 36.0 MMBtu/hr shall be combusted (plus no more than 0.3 MMBtu/hr for pilot gas). [District Rules 2201 and 2410]
- Unit S-7616-32-0: Condition #18. During planned flaring events, no more than 430.0 MMBtu/hr shall be combusted (plus no more than 0.3 MMBtu/hr for pilot gas). [District Rule 2201 and 2410]

Thank you for the opportunity to review the proposed revisions to the FDOC conditions and provide comments. The District will include the above revisions (or any other revisions that are consist with District rules) that are requested by the CEC into the District issued Permits to Operate (PTOs) if and when the PTOs are issued. If you have any questions, please contact Homero Ramirez at (661) 392-5616.

Sincerely,

David Warner  
Director of Permit Services

  
Leonard Scandura, P.E.  
Permit Services Manager

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