

## DOCKETED

<b>Docket Number:</b>	07-AFC-05C
<b>Project Title:</b>	Ivanpah Solar Electric Generating System (Compliance)
<b>TN #:</b>	206686
<b>Document Title:</b>	Order Approving a Petition to Amend to Update Equipment Descriptions
<b>Description:</b>	N/A
<b>Filer:</b>	Tiffani Winter
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Energy Commission
<b>Submission Date:</b>	11/19/2015 9:29:12 AM
<b>Docketed Date:</b>	11/19/2015

**CALIFORNIA ENERGY COMMISSION**

1516 NINTH STREET  
 SACRAMENTO, CA 95814-5512  
 www.energy.ca.gov



**STATE OF CALIFORNIA  
 ENERGY RESOURCES CONSERVATION  
 AND DEVELOPMENT COMMISSION**

**In the Matter of:**

**IVANPAH SOLAR ELECTRIC  
 GENERATING SYSTEM**

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**Docket No. 07-AFC-5C**

**Order No. 15-1112-2**

**SOLAR PARTNERS I, LLC; SOLAR  
 PARTNERS II, LLC; SOLAR  
 PARTNERS VIII, LLC**

**ORDER APPROVING a Petition to Amend  
 to update equipment descriptions**

On March 17, 2015, Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC (Solar Partners) filed a petition with the California Energy Commission (Energy Commission) requesting to amend the Final Decision for the Ivanpah Solar Electric Generating System project (ISEGS) to revise the description of engines used for emergency generators and fire pumps to match the installed engines.

The project owners are proposing minor alterations to the ISEGS **Air Quality** Conditions of Certification to revise the description of engines used for emergency generators and fire pumps to match the existing engines. The Mojave Desert Air Quality Management District (District or MDAQMD) has reviewed the proposed changes and has incorporated the revised descriptions into district permit language.

Now that the engines have been installed, additional information is available. The purpose of this application is to update the equipment descriptions contained in the Air Quality Conditions of Certification to reflect the as-built engine information. Additionally, the District has made minor changes to permit conditions, consolidating redundant conditions, eliminating obsolete conditions, and making minor simplifications and corrections – those changes are reflected in the amended Decision.

The proposed modifications would not change any project mitigation measures designed to reduce potential air quality impacts from the project to less-than-significant levels. No cumulative adverse impacts would occur as a result of the proposed changes to the ISEGS project.

## STAFF RECOMMENDATION

Energy Commission staff reviewed the petition, finds that it complies with the requirements of Title 20, section 1769 (a) of the California Code of Regulations, and recommends approval of Solar Partner's petition to amend the ISEGS Project and amend related Air Quality Conditions of Certification.

## ENERGY COMMISSION FINDINGS

Based on staff's analysis, the Energy Commission concludes that the proposed modification(s) will not result in any significant impacts to public health and safety, or to the environment. The Energy Commission finds that:

- The petition meets all the filing criteria of Title 20, section 1769 (a), of the California Code of Regulations, concerning post-certification project modifications;
- The modification will not change the findings in the Energy Commission's Final Decision, pursuant to Title 20, section 1755, of the California Code of Regulations;
- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code, section 25525;
- The modification will be beneficial to the public and the project owner because it would allow the project owner to optimize operations and maximize solar electricity output; and
- There has been a substantial change in circumstances since the Energy Commission certification, justifying the modifications, and the modifications are based on information that was not available to the parties prior to Energy Commission certification in that the experience of actual operation has demonstrated how to make the best use of the equipment.

## CONCLUSION AND ORDER

The California Energy Commission hereby adopts staff's recommendations and approves the changes to the Commission Decision for the ISEGS Project (see attached conditions of certification). New language is shown as **bold and underlined**, and deleted language is shown in ~~strikethrough~~.

**IT IS SO ORDERED.**

**CERTIFICATION**

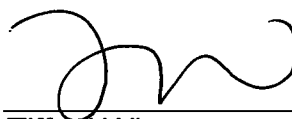
The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of an Order duly and regularly adopted at a meeting of the California Energy Commission held on November 12, 2015.

AYE: Weisenmiller, Douglas, McAllister, Hochschild, Scott

NAY: None

ABSENT: None

ABSTAIN: None

A handwritten signature in black ink, appearing to be 'Tiffani Winter', written over a horizontal line.

Tiffani Winter,  
Secretariat

## AMENDED AND DELETED CONDITIONS OF CERTIFICATION

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### DISTRICT CONDITIONS OF CERTIFICATION

THE FOLLOWING CONDITIONS ARE APPLICABLE TO IVANPAH 1, 2, AND 3 (THREE (3)) AUXILIARY BOILERS, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS: 00009311 (B010375), 00009314 (B010376), AND 00009320 (B010377); ~~EACH CONSISTING OF:~~

Rentech D-type water tube boilers, each equipped with Todd-Coen Ultra Low-NOx Burners rated at a maximum heat input of 249 MMBTU/hr, and flue gas recirculation (FGR or EGR), fueled exclusively on utility grade natural gas. Equipment shall use 242,500 cu-ft/hr of fuel and provide 175,000 lb/hr of steam. Each boiler is equipped with a stack that is 130 feet high and 60 inches in diameter.

**AQ-3** This boiler shall use only natural gas as fuel and shall be equipped with a meter measuring fuel consumption, ~~in standard cubic feet.~~

**Verification:** As part of the Annual Compliance Report (**COMPLIANCE-7**), the project owner shall include proofs that only pipeline quality or Public Utility Commission regulated natural gas are used for the boilers.

**AQ-5** Not later than 180 days after initial startup, the owner/operator shall perform an initial compliance test on this boiler in accordance with the District Compliance Test Procedural Manual. This test shall demonstrate that this equipment does not exceed the following emission maximums:

Pollutant	ppmvd	Lb/MMBtu	Lb/hr	
*NOx	9.0	0.011	2.7	(Per USEPA Methods <u>7E and 19 and 20</u> )
SO2	1.7	0.003	0.7	
*CO	25.0	0.018	<u>4.65</u>	(Per USEPA Method 10)
VOC	12.6	0.005	1.3	(Per USEPA Methods 25A and 18)
PM10	n/a	0.007	1.7	(Per USEPA Methods <u>5 or 201A, and 202</u> )

\*corrected to 3% oxygen, on a dry basis, averaged over one hour

Opacity shall be conducted per Method 9; Flue gas flow rate shall be quantified in dscf per USEPA Methods 1 through 5. As indicated in the District Compliance Manual, the District may approve alternatives, modifications and /or deviations to the methods specified in this condition.

**Verification:** The project owner shall notify the District and the CPM within fifteen (15) working days before the execution of the compliance test required in this condition. The test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

**AQ-6** The project owner shall perform annual compliance tests in accordance with the District Compliance Test Procedural Manual. Prior to performing these annual tests, the boiler shall be tuned in accord with the manufacturer's specified tune-up procedure, by a qualified technician. Subsequent tests shall demonstrate that this equipment does not exceed the following emission maximums:

Pollutant	ppmvd	Lb/MMBtu	Lb/hr	
*NOx	9.0	0.011	2.7	(Per USEPA Methods <u>7E and 19 and 20</u> )
SO2	1.7	0.003	0.7	
*CO	25.0	0.018	<u>4.65</u>	(Per USEPA Method 10)
VOC	12.6	0.005	1.3	(Per USEPA Methods 25A and 18)
PM10	n/a	0.007	1.7	(Per USEPA Methods <u>5 or 201A, and 202</u> )

\*corrected to 3% oxygen, on a dry basis, averaged over one hour

Opacity shall be conducted per Method 9; Flue gas flow rate shall be quantified in dscf per USEPA Methods 1 through 5.

**Verification:** The project owner shall notify the District and the CPM within fifteen (15) working days before the execution of the compliance test required in this condition. The test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

**AQ-11 Delete** The owner/operator shall comply with all applicable recordkeeping and reporting requirements of NSPS-Db.

**Verification:** During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.

**THE FOLLOWING CONDITIONS ARE<sup>1</sup> APPLICABLE TO IVANPAH 1 I, 2 II, AND 3 III EMERGENCY FIRE PUMPS, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; 00009312 (E010380), 00009315 (E010378), AND 00009319 (E010384):**

**E010380: Year of Manufacture 20102011, Tier III, One Clarke John Deere, Diesel fired internal combustion engine, Model No. JU6H-UF626068HFC48, and Serial number PE6068L185615, After Cooled, Direct Injected, Turbo Charged, producing 240316 bhp with 6 cylinders at 2,6002,350 rpm (or equiv.) while consuming a maximum of 1012.2 gal/hr. This equipment powers a pump.**

**E010378: Year of Manufacture 2010, Tier III, One John Deere, Diesel fired internal combustion engine, Model No. 6068HFC48, and Serial number PE6068L117510, After Cooled, Direct Injected, Turbo Charged, producing 316 bhp with 6 cylinders at 2,350 rpm (or equiv.) while consuming a maximum of 12.2 gal/hr. This equipment powers a pump.**

**E010384: Year of Manufacture 2012, Tier III, One John Deere, Diesel fired internal combustion engine, Model No. 6068HFC48, and Serial number PE6068L228483, After Cooled, Direct Injected, Turbo Charged, producing 316 bhp with 6 cylinders at 2,350 rpm (or equiv.) while consuming a maximum of 12.2 gal/hr. This equipment powers a pump.**

Condition **AQ-16** applies separately to the three emergency fire pump engines unless otherwise specified.

**AQ-16** This unit shall be limited to use for emergency purposes power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than 0.5 1.0 hours per day for a total of 50 hours per year for testing and maintenance. The 50 hour limit can be

<sup>1</sup> Verb tense for this condition and the similar ones that follow is correct because only the changed conditions are shown here. There is more than one condition in the full set of conditions.

exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine when operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. [[District Rule 1302(C)(2)(a) and Rule 1304 (D)(1)(a)] and 17 CCR 93115.3(n)] [Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.]

**Verification:** During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.

***THE FOLLOWING CONDITIONS ARE APPLICABLE TO IVANPAH 1 I, 2 H, AND 3 H (THREE - 3) EMERGENCY GENERATORS, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; 00009313 (E010381), 00009316 (E010379), AND 00009317 (E010382), EACH CONSISTING OF:***

**Equipment Description:**

Year of Manufacture 2010, Tier II, ~~One~~ **Three** Caterpillar, Diesel fired internal combustion engines, Model No. 3512C, and Serial Nos. ~~the~~ **EBG00874, EBG00875, and EBG00864**, After Cooled, Direct Injected, Turbo Charged, producing ~~22502,206~~ **22502,206** bhp with 16 cylinders at 1,800 rpm while consuming a maximum of 105 gal/hr. This equipment powers a Generator.

Condition **AQ-24** applies separately to the three emergency fire pump generators engines unless otherwise specified.

**AQ-24** This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than ~~0.5~~ **1.0** hours per day for a total of 50 hours per year [NSR and 17 CCR 93115] [Hours allowed by 60.42(f) streamlined out.]

**Verification:** During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.

***THE FOLLOWING CONDITIONS ARE APPLICABLE TO COMMON AREA EMERGENCY GENERATOR, MDAQMD APPLICATION NUMBER/PERMIT NUMBER; MD100000061 (E011546), CONSISTING OF:***

**Equipment Description:**

Year of Manufacture ~~2010~~ **2011**, Tier III, Located in the Common Logistics Area; One ~~TBD~~ **Caterpillar**, Diesel fired internal combustion engine Model No. ~~TBDC9~~ and Serial No. ~~TBDS9L03837~~, producing ~~333398~~ **333398** bhp with ~~TBD6~~ cylinders at ~~TBD1,800~~ rpm while consuming a maximum of ~~TBD19.4~~ gm/bhp-hr.

Condition **AQ-39** applies separately to the three emergency fire pump generator engines unless otherwise specified.

**AQ-39** This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than ~~0.5~~ **1.0** hrs per day for a total of 50 hours per year for testing and maintenance. [NSR and 17 CCR 93115] [Hours allowed by 60.42(f) streamlined out.]

**Verification:** During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.

**THE FOLLOWING CONDITIONS ARE APPLICABLE TO THE COMMON AREA EMERGENCY FIRE PUMP, MDAQMD APPLICATION NUMBER/PERMIT NUMBER; MD10000062 (E011547), CONSISTING OF:**

**Equipment Description:**

Year of Manufacture ~~TBD~~**2011**, Tier III; Located in the Common Logistics Area; One ~~Clarke (or equiv.)~~ **John Deere**, Diesel fired internal combustion engine Model No. **4045HFC28A,B,C,D** and Serial No. ~~tbd~~**PE4045L162845**, Direct Injected, producing ~~406.5~~**156.9** bhp with 4 cylinders at 1760 rpm while consuming a maximum of ~~8.59~~ gal/hr.

Condition **AQ-45** applies separately to the three emergency fire pump engines unless otherwise specified.

**AQ-45** This unit shall be limited to use for emergency purposes ~~power, defined as in response to a fire or when commercially available power has been interrupted.~~ In addition, this unit shall be operated no more than ~~0.5~~ **1.0** hrs per day for a total of 50 hours per year for testing and maintenance. The 50 hour limit can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. [[District Rule 1302(C)(2)(a) and Rule 1304 (D)(1)(a)] and 17 CCR 93115.3(n)] [Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.]

**Verification:** During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.



