

DOCKETED

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CALIFORNIA ENERGY COMMISSION

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

In the Matter of:

**MIDWAY SUNSET COGENERATION
PROJECT**

)

) **Docket No. 85-AFC-3C**

)

) **Order No.14-0514-3**

)

**MIDWAY SUNSET COGENERATION
COMPANY, LLC**

)

) **ORDER APPROVING a Petition to Upgrade
the Existing Combustion Systems of Units
A & B and Update Air Quality Conditions
of Certification**

)

On November 21, 2013, Midway Sunset Cogeneration Company, LLC (MSCC), the owner of the Midway Sunset Cogeneration project, submitted a petition requesting to upgrade the existing Dry low-NOx 9 (DLN9) combustion systems of Units A and B to have the latest revision DLN1+Turndown Enhance combustion systems. The modification will allow the project owner to meet the permitted 5ppm oxides of nitrogen emission limit when operated in non-cogeneration bypass mode as peaking units, without the use of the selective catalytic reduction and allow more flexibility to operate at reduced loads. The requested modifications will also accommodate the declining steam demands of MSCC's steam host while maintaining the availability of electric power to the grid with Units A and B operating as peaking units when cogeneration steam is not required.

The SJVAPCD issued an Authority to Construct (ATC) permit on December 20, 2013, demonstrating that the proposed changes comply with all applicable LORS. This ATC permit would become applicable only if the Energy Commission approves this amendment request.

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 Midway Sunset Cogeneration Company's petition to modify the Midway Sunset Cogeneration project and amend related Conditions of Certification AQ-49, AQ-52, and AQ-53. Staff also recommends administrative changes to several other conditions of certification applicable to the current project. **AQ-5, AQ-8, AQ-9, AQ-19, AQ-26, and AQ-35** have been modified or deleted to update outdated language that no longer applies to the current facility; **AQ-18 and AQ-22** have been updated to reflect

current reporting requirements, and **AQ-6** and **AQ-7** would bring the facility into compliance with current operating requirements.

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 modifications will be beneficial to the project owner because it will accommodate the declining steam demands of MSCC's steam host while maintaining the availability of electric power to the grid with Unit A and Unit B as peaking units; and
- There has been a substantial change in circumstances since the Energy Commission certification justifying the modification(s) based on information that was not available to the parties prior to Energy Commission certification in that DLN1+TE technology was not available during the certification process.

CONCLUSION AND ORDER

The California Energy Commission hereby adopts staff's recommendations and approves the following changes to the Commission Decision for the Midway Sunset Cogeneration project. New language is shown as **bold and underlined**, and deleted language is shown in ~~striketrough~~.

CONDITIONS OF CERTIFICATION

The following is a list of all conditions of certification, including conditions that are currently being proposed for modification. ~~Striketrough~~ is used to indicate proposed deleted language and **underline** is used for proposed new language. ~~Double Striketrough~~ is used to show conditions that have been deleted in previous Energy Commission orders.

AQ-1 Before implementing any major change in the Air Emissions Control Systems (AECS), Emissions Monitoring System (EMS), the Computer Control System (CCS), or the emission offsets of Requirement 4**AQ-26**, the project owner shall submit the proposed change for approval. Examples of major changes are the use of an alternative AECS, EMS, or CCS, or a major change to the emissions offset package.

Verification: Sixty days before implementing any major change identified above, the project owner shall submit to the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and the California Energy Commission (CEC) the design details of the proposed change and a discussion of the potential change in air emissions from the project or the changes to the proposed offsets for the project. The project owner shall receive written approval from the SJVUAPCD and the CEC **Energy Commission** prior to implementing any major change.

AQ-2 The project owner shall obtain from the U.S. Environmental Protection Agency (EPA) a Prevention of Significant Deterioration (PSD) permit or exemption.

Verification: Within 30 days of receipt of the PSD permit or PSD exemption notification from the EPA, the project owner shall submit a copy of the PSD permit or exemption notification to the CEC **Energy Commission** and the SJVUAPCD.

AQ-3 All areas disturbed by construction in the immediate vicinity, and under the project owner responsibility during the construction phase, shall be properly and routinely treated for dust control by water application or paving (for access roads and construction sites), with the intent of meeting the requirements of SJVUAPCD nuisance rule.

Verification: The project owner shall make the construction site available to the SJVUAPCD and the CEC **Energy Commission** for inspection and monitoring. If any dust suppressant other than water is proposed, the project owner shall obtain approval from the SJVUAPCD.

AQ-4 The SJVUAPCD shall monitor compliance of the site preparation, construction, and operation of the Midway-Sunset Project cogeneration plant with the Conditions for Certification contained in the CEC **Energy Commission** Decision on the Midway-Sunset Cogeneration Project, as they relate to air quality laws. The SJVUAPCD shall perform all duties and functions normally conducted by the SJVUAPCD and shall have the authority to issue a Permit to Operate. The conditions of the Permit to Operate shall be consistent with the CEC **Energy Commission** Certification Conditions.

Verification: The SJVUAPCD and the CEC **Energy Commission** staff will, at the request of either party, meet to review the status of project Compliance. The CEC **Energy Commission** staff shall be allowed to review the SJVUAPCD's enforcement

and project files except for "trade secrets" which will be managed as set forth in SJVUAPCD rules.

AQ-5 The project owner shall design the Midway-Sunset project using the following design Conditions:

- ~~a. Combustion turbine generator (CTG) water injection systems for NO_x control shall be capable of supplying at least 1,420 pounds of water per minute to each CTG combustor. [Deleted in Order No. 99-0317-1]~~
- ~~b. CTG's shall be equipped with multiple nozzle "quiet combustor" dual fuel combustion systems.~~
- c. Each CTG shall have the following instrumentation: 1) fuel consumption monitor/recorder accurate to +/- 3 percent, 2) water injection monitor/recorder, and 3) water to fuel ratio monitor/recorder accurate to +/- 5 percent.
- d. Continuous emission monitoring systems for SO_x (as SO₂), NO_x (as NO₂) and CO shall serve each CTG flue gas stream and shall conform to SJVUAPCD Rules.
- e. Each heat recovery steam generator (HRSG) exhaust stack shall be equipped with permanent stack sampling provisions adequate to facilitate testing consistent with Environmental Protection Agency (EPA) Reference Methods.
- f. Flue gas ducting from CTG's through the HRSG's **stacks** to the atmosphere shall have no provisions for introduction of dilution air.
- g. Lube oil cooler/accumulator vent(s) shall be equipped with control device(s) approved by the Air Pollution Control Officer (APCO) sufficient to prevent emissions.
- ~~h. Truck and rail car fuel oil unloading and transfer systems shall be equipped with dry break connections. [Deleted in Order No. 99-1117-03]~~
- ~~i. Fuel oil tank floating roofs and seals shall meet all applicable SJVUAPCD Rules. [Deleted in Order No. 99-1117-03]~~

Verification: The project owner shall maintain and make available for inspection the "Approved for Construction Drawings" to the SJVUAPCD, the California Air Resources Board (CARB), and the ~~CEC~~ **Energy Commission** upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays). The project owner shall make the site available for inspection by the SJVUAPCD, CARB, and the ~~CEC~~ **Energy Commission** during both construction and operation upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays).

AQ-6 Natural gas sulfur content shall not exceed ~~0.75~~**0.31** grains/100 standard cubic foot.

Verification: The project owner shall maintain an operational log on site for inspection by the SJVUAPCD, GARB and the CEC Energy Commission. The log shall contain records of the fuel purchased, lower heating value (LHV), sulfur content, and daily fuel consumed.

AQ-7 Fuel oil natural gas sulfur content shall not exceed ~~0.05~~0.017% by weight.

Verification: The project owner shall maintain a fuel purchase and consumption log on-site for inspection by SJVUAPCD, GARB and CEC Energy Commission. The log shall contain records of the fuel purchased, lower heating value (LHV), sulfur content, API gravity specification, and daily fuel consumed.

~~**AQ-8** Entire facility fuel oil consumption rate shall not exceed 5,568 bbl/day of 0.08 percent sulfur fuel at 30° API gravity, or equivalent.~~

~~**Verification:** As per Verification for Requirement 4-7.~~

~~**AQ-9** CTG water injection systems shall be used as required to control NOx emissions.~~

~~**Verification:** The project owner shall maintain records on the operation of the water injection systems for the turbines as a part of the operational log. The project owner shall provide the SJVUAPCD and the CEC with copies of the log upon request.~~

AQ-10 All tank welds, seams, gauge hatches, sampling ports, pressure relief valves, etc. shall be gas-tight and shall have no detectable emissions.

Verification: The project owner shall provide access to the SJVUAPCD to inspect tank welds seams, gauge hatches, sampling ports, and pressure relief valves.

AQ-11 Tankage water draw offs, if any, shall consist of closed piping to the existing water treatment plant.

Verification: The project owner shall provide access to the SJVUAPCD to inspect the tankage water system.

~~**AQ-12** Potential sources of fugitive emissions in all railcar and truck fuel oil unloading areas and all fuel oil transfer facilities shall be inspected and maintained on a regular schedule, approved by the APCO, to prevent hydrocarbon emissions.
[Deleted in Order No. 99-1117-03]~~

~~**Verification:** The project owner shall maintain records of inspections of the fuel oil transfer system as a part of the operational logs. The project owner shall provide the SJVUAPCD and the CEC with copies of the log upon request.~~

AQ-13 All new or existing wells producing from zones newly steamed or new wells producing from a currently steamed zone shall be served by an APCO-approved well head casing vent vapor recovery system or alternatively, well casing vents may be shut in.

Verification: MSCC shall ensure the following: Six months prior to the anticipated startup date of the cogeneration facility, Sun E&P shall prepare a technical analysis of the well head casing vent vapor recovery and disposal systems that will be used to mitigate hydrocarbon emissions from the Midway-Sunset cogeneration project. This analysis shall be provided to SJVUAPCD and ~~CEC~~ **Energy Commission** for of certification. Sun E&P shall maintain and make available for inspection the "Approved for Construction Drawings" of the well head casing vent vapor recovery system to the SJVUAPCD, CARB, and the ~~CEC~~ **Energy Commission** upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays). Sun E&P shall make the site available for inspection by the SJVUAPCD, CARB, and the ~~CEC~~ **Energy Commission** during both construction and operation upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays). MSCC shall provide SJVUAPCD and the ~~CEC~~ **Energy Commission** with well numbers and Verification that the vessels receiving produced fluids from the wells are pressure vessels. Otherwise, all vessels receiving produced fluids from these wells must be vented to a SJVUAPCD-approved vapor control system.

AQ-14 Steam produced by this project shall only be utilized by an APCO approved recipient unless prior APCO approval is granted.

Verification: Prior to selling steam to steam users other than the APCO approved steam recipient, MSCC shall make application to the SJVUAPCD for a revised permit naming the new steam users. MSCC shall provide the ~~CEC~~ **Energy Commission** with copies of such requests.

AQ-15 The Midway-Sunset project facility shall operate as a cogeneration facility pursuant to Public Resources Code Section 25134 for thermally enhanced oil recovery operations unless prior SJVUAPCD and ~~CEC~~ **Energy Commission** approval is granted to operate otherwise.

Verification: The project owner shall maintain records on steam production as a portion of the operational log required in Requirement ~~4AQ-6~~. The record shall include, but is not limited-to, hours of operation of the turbines and HRSGs, pounds per hour of steam produced, and temperature and pressure of steam produced.

AQ-16 The project owner may increase emissions from approved emission limits upon approval of additional offsets in an amount sufficient to offset the increased levels, provided that in no case shall the facility be operated at any emission rate which would exceed any limits contained in SJVUAPCD regulations. Future revisions resulting in emission decreases will be approvable pursuant to the requirements of SJVUAPCD Rules.

Verification: Sixty days before implementing any changes to the emission sampling limits (Requirement **4AQ-18**), the project owner shall submit to the SJVUAPCD and the **GEG Energy Commission** the design details of the proposed emission sampling limits changes and the rationale and justification for those changes. The project owner shall receive written approval from the SJVUAPCD and the **GEG Energy Commission** prior to operating the turbines at emission levels greater than those indicated in Requirement **4AQ-18**.

AQ-17 Lube oil cooler/accumulator vent(s) shall not have detectable emissions.

Verification: As part of the performance test plan required by Requirement-Verification **4AQ-18a**, the project owner shall provide provisions for source testing the lube oil cooler/accumulator vent(s). Source testing of the lube oil cooler/accumulator vent(s) shall take place according to the requirements of Requirement-Verification **4AQ-18b, c, and d**.

AQ-18 Pollutant emissions from the Stack of each combustion turbine shall not exceed the following limits (in pounds mass per hour, lbm/hr) except during times of start-up or shutdown (as described in Condition of Certification **AQ-44**):

Particulate	9.98	lbm/hr
Sulfur Compounds	0.92	lbm/hr as SO ₂
Oxides of Nitrogen	17.66	lbm/hr as NO ₂
Hydrocarbons (nonmethane)	9.00	lbm/hr
Carbon Monoxide	54.91	lbm/hr

Verification: To demonstrate compliance with the emission limits provided, the owner/operator shall provide initial and on-going performance tests as follows:

- a. At least 60 days before commercial operation date of the power cogeneration facility, or ~~60~~**30** days before the permit to operate anniversary date, the owners shall submit to the SJVUAPCD, GARB and the **GEG Energy Commission** a detailed performance test plan for the power plant's AECS. The performance test will be funded by the owners and conducted by a third party approved by the SJVUAPCD and GARB. The SJVUAPCD will notify the owners and the **GEG Energy Commission** of its approval, disapproval, or proposed modifications to the plan within 30 days of receipt of the plan. The owners shall incorporate the SJVUAPCD and the **Energy Commission's** comments or modifications to the plan.
- b. The owners shall notify the SJVUAPCD and the **GEG Energy Commission**, within five days, before the facility begins commercial operation. The owners shall also notify the SJVUAPCD one week prior to the beginning of testing to allow the SJVUAPCD to observe and/or conduct concurrent sampling.

- c. Compliance with emission limits shall be demonstrated by a SJVUAPCD witnessed sample collection performed by an independent testing laboratory within 60 days after startup of this equipment and annually within 60 days prior to permit anniversary date.
- d. The owners shall submit the results of the compliance test within 60 days of completion of the tests. The owners shall submit to the SJVUAPCD, its application for a Permit to Operate via registered mail. The owners shall submit a copy of the application to the ~~CEG~~ **Energy Commission** within 10 days of its submittal to the SJVUAPCD. The SJVUAPCD shall approve or disapprove the application as prescribed in the SJVUAPCD rules.
- e. The owners shall include all Excursions in the Quarterly Emissions Report as a separate section (such as “breakdowns” or “excess emissions”) as well as including them in all daily and annual emission calculations.

AQ-19 Nonparallel flow in the exhaust stacks shall be verified immediately prior to compliance testing, or APCO-approved testing methods for nonparallel flow shall be utilized. (~~KGAPCD Rule 108.1~~)

Verification: As part of the performance test plan as required by Requirement-Verification ~~4AQ-18a~~, the project owner shall evaluate any non- parallel cyclonic) flow problem in the emission stacks and provide recommendations of EPA-approved testing methods for cyclonic flow circumstances that will be used at the Midway-Sunset project.

AQ-20 All continuous emission monitoring systems shall be calibrated and operated according to EPA guidelines as specified in Title 40, CFR, Part 60, Appendix B.

Verification: The project owner shall submit to the SJVUAPCD and the ~~CEG~~ **Energy Commission**, 120 days before the startup of the facility, a continuous emission monitoring plan. The plan shall describe the monitoring equipment, monitoring locations, calibration techniques as specified by Title 40, CFR, Part 60, Appendix B. and reporting format, procedures, and schedules. Within 60 days of receipt of the plan, the SJVUAPCD shall advise the project owner and the ~~CEG~~ **Energy Commission** of the acceptability of the plan.

AQ-21 Quarterly continuous monitoring reports shall be submitted to the APCO as required by EPA regulations as specified in Title 40, CFR, Part 60, Appendix B.

Verification: Reports shall be submitted to the SJVUAPCD and the ~~CEG~~ **Energy Commission** on a quarterly basis per the above requirement.

AQ-22 Audits of all monitors shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed by the SJVUAPCD, and reports shall be submitted to the SJVUAPCD within ~~30~~**60** days of such audit.

Verification: The audits for all continuous monitors shall be funded by the project owner and performed by an independent laboratory in accordance with EPA monitoring

guidelines. The SJVUAPCD, CARB, and GEG Energy Commission staff shall be allowed to witness the audit testing. The audit reports shall be submitted to the SJVUAPCD within 30 days of each audit.

~~**AQ-23** The project owner shall provide to the SJVUAPCD a fuel oil sulfur content analysis each day the turbines are oil fired and the SO2 continuous emission monitoring system is inoperative. [Deleted in Order No. 99-1117-03]~~

~~**Verification:** The project owner shall provide the fuel analysis, including but not limited to, sulfur content, quantity, and Btu content (LHV), within 30 days of purchase of each lot of fuel.~~

AQ-24 All notification, record keeping, performance tests, reporting requirements, and compliance test requirements of SJVUAPCD Rules shall be satisfied.

Verification: The annual compliance report to the GEG Energy Commission shall contain a statement on the status of applicable compliance with SJVUAPCD Rules.

AQ-25 Design details, as they relate to air contaminant generation or emission control potential, CTG combustion systems; NOx control systems; and lube oil vent controls shall be submitted to and approved by the APCO prior to installation.

Verification: The project owner shall provide the above information to the SJVUAPCD and the GEG Energy Commission 60 days before installation of the equipment identified in Requirement 4AQ-25.

- AQ-26** a. Of the original 52 steam generators and heaters used for mitigation, ~~six~~ **four** steam generators and heaters (Permit Numbers: S-1135-115, '446, '119, '420, '122 and '123) shall be shutdown while all three turbines at Midway-Sunset are in operation. The remaining forty six steam generators and heaters (Permit numbers for original Oryx equipment under the now non-existent Kern County Air Pollution Control District: 4014002, '006, '013, '019, '020, '036, '049, '051, '052, '054, '055, '058, '059, '067, '068, '069, '070, '072, '080, '081, '087, '093, '094, '097, '131, '137, and '142) (Permit numbers for SJVUAPCD: S-1135-98, '99, '100, '101, '102, '103, '104, '105, '106, '107, '108, '109, '110, '111, '112, '113, '114, '117 and '121) have been surrendered to the SJVUAPCD and are no longer in operation.
- b. When one or more of the three turbines at the Midway-Sunset Cogeneration facility is shutdown, then any combination of the following ~~64~~ field steam generators may be operated to produce steam in its place (field steam generator permit numbers: S-1135-115, '446, '119, '420, '122 and '123).

Verification: The project owner shall maintain operational logs for the above steam generators and shall make these logs available for inspection by the SJVUAPCD, CARB, and the GEG Energy Commission. These logs shall be included in the quarterly compliance reports submitted to the GEG Energy Commission. The

SJVUAPCD and CEG **Energy Commission** shall receive immediate written notification of planned operational status changes of the offset sources listed above.

AQ-27 Operational records including fuel type, fuel characteristics, and consumption shall be maintained and shall be made immediately available to SJVUAPCD staff upon request.

Verification: The project owner shall maintain a fuel purchase and consumption log on site for inspection by the SJVUAPCD, CARB, and the CEG **Energy Commission**. The log shall contain records of the fuel purchased, lower heating value (LHV), sulfur content, and daily fuel consumed.

AQ-28 Accurate records of SO_x (as SO₂), NO_x (as NO₂), and CO flue gas concentrations corrected to 15 percent O₂ and CTG fuel sulfur content shall be maintained as described by applicable SJVUAPCD Rules and shall be reported upon request.

Verification: The project owner shall make the continuous emission monitors and recorded measurements as well as fuel consumption records available to the SJVUAPCD, CARB, and the CEG **Energy Commission** upon request.

AQ-29 The project owner shall receive, prior to installation of this equipment, APCO approval of a comprehensive plan detailing how compliance with emission limits and offset requirements will be achieved and documented at all turbine operating conditions (including operation of one or two turbines).

Verification: As per Verifications for Requirements **4AQ-18** and **4AQ-26**.

AQ-30 Before commencement of construction, the project owner shall receive APCO approval of a comprehensive plan detailing how compliance with the **emission sampling limits** ~~EMISSION SAMPLING LIMITS~~ will be achieved, continuously documented and continuously reported. At a minimum, the plan shall include the use of continuous emissions monitors serving the whole plant; fuel In consumption data; and a micro-computer system to continuously determine emission rates, compare measured emission rates to emission sampling limits, provide instantaneous display and demonstration of compliance, and, record and report results. Compliance with individual turbine limits (as opposed to whole facility limits) would preclude the necessity of this plan.

Verification: Six months prior to the commencement of construction of the cogeneration facility (or a lesser period mutually agreeable to the SJVUAPCD and the CEG **Energy Commission**), the project owner shall provide the above mentioned emission limit compliance plan to the SJVUAPCD and the CEG **Energy Commission** for approval. The plan shall include, but not be limited to, equipment specifications, "Approved for Construction" drawings, manufacturers' literature, and any other

supporting documentation necessary to verify the accuracy and reliability of the selected equipment.

AQ-31 The project owner shall not bank or use in calculating the net accumulated emissions change for the remainder of the stationary source, any reductions, on either specific limiting condition basis or actual emissions basis, from any steam generators and heaters which have been shutdown pursuant to Requirement **4AQ-26**.

Verification:

- a. The project owner shall submit to the SJVUAPCD and the ~~CEC~~ **Energy Commission** a certificate of dedication for the emission reductions realized from the shutdown of fifty-two steam generators and boilers specified in operating conditions gg of the final DOC dated January 13, 1987 (~~CEC~~ **Energy Commission** Condition ~~for~~ **of** Certification Requirement **4AQ-26**) which exceed the actual emission reductions from the shutdown, as calculated pursuant to the methodology used by the CARB in its review of the project owner AFC amendment dated October 6, 1986. The project owner shall be responsible for submitting any and all data and information required by the SJVUAPCD to validate the dedication.
- b. The certificate of dedication shall include written conditions of use which state that the excess emission reduction credits which reflect the difference between calculating the emission reductions achieved using permitted emissions and calculating the reductions using actual emissions are, for the life of the project, dedicated to the project and/or the fifty-two steam generator sand boilers specified in operating conditions gg (~~CEC~~ **Energy Commission** Condition ~~for~~ **of** Certification Requirement **4AQ-26**) of the final DOC. Appropriate modifications shall be included on the permits of the fifty-two affected steam generators and boilers to ensure that the ERCs are surplus, permanent, quantifiable, and enforceable by the SJVUAPCD.
- c. The project owner shall not take any action to invalidate or otherwise inactivate the certificate of dedication as conditioned so long as the project retains a valid permit to operate.

~~**AQ-32** If the project owner plans to operate two or three turbines during the emergency firing of distillate oil, prior to commencing such operations the owner shall demonstrate to the CEC and SJVUAPCD that a NOx emissions level for the facility of 243 lbm/hr, an SO4 emissions level for the facility of 7.96 lbm/hr, and an SO2 emissions level for the facility of 100 lbm/hr can be consistently maintained without adversely affecting emissions of CO, NMHC, and TSP or the reliability of the turbines. The project owner shall not operate any turbine firing distillate oil prior to obtaining CEC and SJVUAPCD approval. [Deleted in Order No. 99-1117-03]~~

Verification:

~~a) The project owner shall submit the following information to the SJVUAPCD and the CEG for approval, 60 days before the startup of the facility: Emissions data for NO_x, SO₂, CO, and NMHC from the turbine vendor to substantiate the NO_x turbine emissions will not exceed 243 lbm/hr total for the facility, SO₄ turbine emissions will not exceed 7.96 lbm/hr total for the facility and SO₂ turbine emissions will not exceed 100 lbm/hr total for the facility for a minimum period of 24 hours. Information from the turbine vendor on the measures required to achieve the above NO_x, SO₂ and SO₄ emissions levels and their effects on turbine reliability.~~

~~b) As part of the source test requirements of Requirement Verification 4-18e, the project owner shall demonstrate that, while firing distillate oil, the facility can meet a total NO_x emission level of 243 lbm/hr, total SO₂ emission level of 100 lbm/hr and a total SO₄ emission of 7.96 lbm/hr for a minimum period of 24 consecutive hours. This compliance test shall also demonstrate compliance with the emission levels for particulates, hydrocarbons and carbon monoxide in Requirement 4-18.~~

4AQ-33 Rock bed gravel shall completely cover steam exhaust manifold of the Steam Pit-Rock Muffler unit.

Verification: The project owner shall make the site available for inspection by the APCO, CARB, and the CEG **Energy Commission** during both construction and operation upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays).

AQ-34 The Steam Pit-Rock Muffler Permit unit shall be equipped with sampling provisions consistent with EPA and SJVUAPCD requirements.

Verification: MSCC shall submit to the SJVUAPCD and the CEG **Energy Commission** CPM, 20 days after commencement of operation of the Steam Pit-Rock Muffler unit, an emissions sampling plan. The plan shall describe the sampling equipment, sampling locations, sampling techniques, and reporting format, procedures and schedules. Within 20 days of receipt of the plan, the SJVUAPCD shall advise MSCC and CEG **Energy Commission** CPM of the acceptability of the plan.

AQ-35 The Steam Pit-Rock Muffler unit shall receive steam only from MSCC cogeneration units SJVUAPCD permit numbers 4014800, ...801 and ...802S-1135-224, -225, -226.

Verification: MSCC shall make the site available for inspection by the SJVUAPCD, CARB, and the CEG **Energy Commission** during both construction and operation upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays).

AQ-36 The Steam Pit-Rock Muffler unit shall not be used on any day when any of the 52 steam generators and heater treaters, curtailed to provide cogeneration project offsets, are operated unless these units are operated in accordance with the project's SJVUAPCD approved Emissions Offset Compliance Plan.

Verification: The project owner shall monitor per-approved steam recipient operation of the 52 steam generators and heater treaters (Condition ~~4~~**AQ-26**) to ensure that only the equipment listed in the Plan as allowable for a one turbine outage, two-turbine outage or three turbine outage is used during the type of outage.

AQ-37 The Steam Pit-Rock Muffler unit shall not be used for more than six hours in any one day.

Verification: See Condition No. **AQ-38**.

AQ-38 The project owner shall keep accurate daily records indicating hours of Steam Pit-Rock Muffler unit usage.

Verification: Records shall be available for District and ~~CEC~~ **Energy Commission** staff review on request. The records shall provide data for no less than one year from the date of request.

AQ-39 Emissions from this Steam Pit-Rock Muffler unit operation shall not constitute a nuisance.

Verification: In their quarterly compliance report, MSCC shall provide a copy of any reports of nuisance resulting from the operation of the rock muffler that have been filed by or with the SJVUAPCD.

AQ-40 H2S emissions from the Steam Pit-Rock Muffler unit shall not exceed 19 lbm/hr.

Verification: Compliance with sampling limits shall be demonstrated by SJVUAPCD witnessed sample collection by independent testing laboratory within 60 days after startup, and official test results and field data submitted within 30 days after collection.

AQ-41 Only treated water shall be used as steam generator feed water.

Verification: MSCC shall submit annual compliance reports detailing the quantities of reclaimed produced water used and the quantities of fresh water purchased from the West Kern Water District for the use at the Midway-Sunset Cogeneration facility (Same as the verification for Water Resources Condition 2).

AQ-42 Pollutant emissions from the Steam Pit-Rock Muffler shall not exceed the following limits (in pounds mass per hour, lbm/hr):

Particulate matter	8.40 lbm/hr
Sulfur Compounds	64.00 lbm/hr(as SO4)
Hydrocarbons	1.00 lbm/hr

Verification: Compliance with sampling limits shall be demonstrated by SJVUAPCD witnessed sample collection by independent testing laboratory within 60 days after startup, and official test results and field data submitted within 30 days after collection.

AQ-43 No more than one turbine at a time shall discharge into the Steam Pit-Rock Muffler. This discharge shall not exceed 30 minutes in any one hour.

Verification: Same as Air Quality Condition Verification #**AQ-38**.

AQ-44 Start-ups/Shutdowns at the Midway-Sunset Cogeneration Facility shall not exceed more than 2 hours in duration and are not subject to the operational hourly emission limits stated in Condition **4AQ-18**.

Verification: See the Verification for Condition **4AQ-45**

AQ-45 During periods of start-up or shutdown at the Midway-Sunset Cogeneration Facility, the following emission limits will apply averaged over the two hour permitted duration (see Condition **4AQ-44**).

Gas-fired case: per turbine train	
Oxides of Nitrogen	140 lbm/hr averaged over 2 hours as NO ₂
Carbon Monoxide	94 lbm/hr averaged over 2 hours

Verification: The owner/operator shall include in the annual and quarterly reports a balance of emissions for periods of start-up or shutdown from the CEM system demonstrating compliance.

AQ-46 Periods of reduced load are defined as the time duration which the gas turbines at the Midway-Sunset Cogeneration Facility is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate and is not to exceed one hour in duration.

Verification: See Verification for Condition **4AQ-47**.

AQ-47 During periods of reduced loads as defined by Condition **4AQ-46**, only the following emission limits will apply.

Gas-fired case: per turbine train	
Oxides of Nitrogen	140 lbm/hr as NO ₂
Carbon Monoxide	94 lbm/hr

Verification: The owner/operator shall include in the annual and quarterly reports a balance of emissions for periods of reduced load from the CEM system demonstrating compliance.

AQ-48 The emission of unreacted ammonia slip from any exhaust stack shall not exceed the following limits:

10 ppm	@ 15% O ₂	averaged over 24 hours
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Verification: The owner shall monitor and record the ammonia slip from each exhaust stack as required in Conditions of Certification AQ-49 through AQ-54. The owner shall report the ammonia slip as part of the quarterly emission report required by Condition of Certification AQ-21.

AQ-49 Each CTG shall be equipped with a continuously recording emission monitor preceding the SCR module measuring NO_x concentration for the purpose of calculating ammonia slip. The owner shall check, record and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours) **when the SCR is operated**. The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5 percent. If either the zero or high-level CD exceeds 5 percent for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10 percent during any CD check, the analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the owner shall take appropriate corrective action and then repeat the CD check.

Verification: The owner shall report the CD checks for each day as part of the quarterly emission report required by Condition of Certification AQ-21.

AQ-50 Each ammonia injection grid shall be equipped with an operational ammonia flow-meter and injection pressure indicator.

Verification: The owner shall make the site available for inspection by the SJVUAPCD, CARB and the CEC **Energy Commission** during construction and operation with reasonable notice.

AQ-51 Each heat recovery steam generator design shall provide for additional selective catalytic reduction and oxidation catalyst if required to meet NO_x and CO emission limits.

Verification: The owner shall make the site available for inspection by the SJVUAPCD, CARB and the CEC **Energy Commission** during construction and operation with reasonable notice.

AQ-52 **When SCR is operated, the** owner shall monitor and record the exhaust gas temperature at the selective catalytic reduction and oxidation catalyst inlets.

Verification: The owner shall report the inlet temperature as recorded as part of the quarterly emission report required by Condition of Certification AQ-21.

AQ-53 When SCR is operated, Ammonia shall be injected whenever the selective catalytic reduction system catalyst exceeds the minimum ammonia injection temperature recommended by the manufacturer.

Verification: The owner shall report the ammonia injection rate as part of the quarterly emission report required by Condition of Certification AQ-21.

AQ-54 Compliance with the ammonia slip limits (Condition of Certification AQ-48) shall be demonstrated by using the following calculation procedure:

$$A_s = ((a-(bxc/1,000,000)) \times 1,000,000 / b) \times d$$

where: A_s = ammonia slip (ppmv @15 percent O2)

a = ammonia injection rate (lbs/hr)/17(lbs/lb. mol)

b = dry exhaust gas flow rate (lbs/hr)/(29(lbs/lb. mol)

c = change in measured NOx concentration across the catalyst (ppmv @ 15 percent O2), and

d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip.

Verification: The owner shall report ammonia slip required in Condition of Certification AQ-48 via the indicated calculation procedure. The owner shall submit for approval the ammonia source testing protocols no later than 30 days prior to the annual ammonia slip source-testing date. The owner shall notify the CEC Energy Commission and the SJVUAPCD no later than 10 days prior to the date of the annual ammonia source test. The owner shall submit for approval the results of the annual ammonia source test including any changes to the correction factor "d" above within 90 days of the completion of the annual ammonia source test.

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 May 14, 2014.

AYE: Weisenmiller, Douglas, McAllister, Hochschild, Scott

NAY: None

ABSENT: None

ABSTAIN: None



Harriet Kallemeyn, Secretariat