DOCKETED

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Project Title:	Midway-Sunset Cogeneration AFC (225 MW)
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Description:	Summary of Additional Proposed Administrative AQ Changes pertaining to DLN1+ AQ Amendment
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SOMMARY

MIDWAY-SUNSET COGENERATION PROJECT

AMENDED 9/20/95

Conditions 1 through 4, 31 and 32 are CEC staff conditions while Conditions 5 through 30 are KCAPCD conditions included in the Determination of Compliance (DOC).

4-1 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 4-26, 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 prior to implementing any major change.

4-2 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 and the SJVUAPCD.

4-3 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 for inspection and monitoring. If any dust suppressant other than water is proposed, the project owner shall obtain approval from the SJVUAPCD.

4-4 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

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 Certification Conditions.

Verification: The SJVUAPCD and the CEC staff will, at the request of either party, meet to review the status of project Compliance. The CEC 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 AMENDED 11/17/99 The owner/operators shall design the Midway-Sunset project using the following design conditions:

a. and b. DELETED.

c. Each CTG shall have the following instrumentation: 1) fuel consumption monitor/recorder accurate to + 3 percent, 2) where water injection is used water injection monitor/recorder, and 3) where water injection is used, water to fuel ratio monitor/recorder accurate to +5 percent.

d. Continuous emission monitoring systems for SOx (as SO2), NOx (as NO2) and CO shall serve each CTG flue gas stream and shall conform to ~~KCAPCD~~ 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. * DELETE

i. Fuel oil tank floating roofs and seals shall meet all applicable SJVUAPCD Rules. * DELETE

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

0.31 PTO # 13

4-6 Natural gas sulfur content shall not exceed ~~0.75~~ grains/100 standard cubic foot.

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

PTO S-1135-231 #7

0.0015% PTO S-1135-235 #9

4-7 Fuel oil sulfur content shall not exceed ~~0.05~~% by weight.

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

4-8 Entire facility fuel oil consumption rate shall not exceed 5,568 bbl/day of 0.08 percent sulfur fuel at 30ø API gravity, or equivalent. * DELETE

Verification: As per Verification for Requirement 4-7.

4-9 CTG water injection systems shall be used as required to control NOx emissions. * DELETE

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.

4-10 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.

4-11 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.

4-12 DELETED 11/17/99

4-13 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 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 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 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 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.

4-14 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 with copies of such requests.

4-15 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 approval is granted to operate otherwise.

OUR CORRENT AMENDMENT ADDRESSES THIS

Verification: The project owner shall maintain records on steam production as a portion of the operational log required in Requirement 4-6. 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.

4-16 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 4-18), the project owner shall submit to the SJVUAPCD and the CEC 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 CEC prior to operating the turbines at emission levels greater than those indicated in Requirement 4-18.

4-17 Lube oil cooler/accumulator vent(s) shall not have detectable emissions.

Verification: As part of the performance test plan required by Requirement-Verification 4-18a, 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 4-18b, c, and d.

AQ-18 AMENDED 10/30/06 Pollutant emissions from each SCR-controlled 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):

Gas-Fired Case:

Particulate	9.98	lbm/hr
Sulfur Compounds	0.92	lbm/hr as SO2
Oxides of Nitrogen	17.66	lbm/hr as NO2
Hydrocarbons (nonmethane)	9.00	lbm/hr
Carbon Monoxide	54.91	lbm/hr

OK

~~Pollutant emissions from each combustion turbine with the Evolution Rotor installed, shall not exceed the following limits (in pounds mass per hour) with the exceptions given below.~~

~~Gas-Fired Case:~~

~~Particulate~~	~~9.98~~	~~lbm/hr~~
~~Sulfur Compounds~~	~~0.92~~	~~lbm/hr as SO2~~
~~Oxides of Nitrogen~~	~~7.06~~	~~lbm/hr as NO2~~
~~Hydrocarbons (nonmethane)~~	~~9.00~~	~~lbm/hr~~
~~Carbon Monoxide~~	~~13.18~~	~~lbm/hr~~

~~1. NOx emission concentrations during steady state operation shall not exceed 7.06 lbs/hr over a one-hour average (clock-hour basis). Steady state operation refers to any period that is not a startup or~~

* DELETE THIS AMENDMENT WAS NOT IMPLEMENTED

shutdown (as described in Condition of Certification AQ-44). A clock hour in a one-hour average will commence at the top of the hour.

2. Compliance with the NOx emission limitations during steady-state operation shall not be required during short-term excursions limited to a cumulative total of 10 hours per rolling 12-month period.

3. Short-term excursions are defined as 15-minute periods designated by the owner/operator (and approved by the CPM) that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods when the 15-minute average NOX concentration exceeds 2.0 ppmvd @ 15 percent O2. The maximum three-hour average NOx concentration for periods that include short-term excursions shall not exceed 5 ppmvd @ 15 percent O2. The maximum three-hour CO concentration for periods that include short-term excursions shall not exceed 25 ppmvd @ 15 percent O2.

4. Examples of transient load conditions include, but are not limited to the following: initiation or shutdown of combustion turbine inlet air cooling, or rapid combustion turbine load changes. All emissions during short-term excursions shall accrue towards the daily and annual emissions limitations of this permit and shall be included in all calculations of daily and annual mass emission rates as required by this permit.

5. All emissions during short-term excursions shall accrue towards the hourly, daily and annual emissions limitations of these conditions and shall be included in all calculations of hourly, daily, and annual mass emission rates as required herein.

* DELETE

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 ~~60~~ 30 PTO #27 commercial operation date of the power cogeneration facility, or ~~60~~ days before the permit to operate anniversary date, the owners shall submit to the SJVUAPCD, CARB and the CEC 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 CARB. The SJVUAPCD will notify the owners and the CEC 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 Commission's comments or modifications to the plan.

b. The owners shall notify the SJVUAPCD and the CEC, 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 ~~30~~ 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 CEC 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.

PTO #30 THIS WAS REQUESTED AS PART OF THE DLW14 AMENDMENT THAT WAS NEVER IMPLEMENTED

4-19 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. ~~(KCAPCD Rule 108.1)~~

Verification: As part of the performance test plan as required by Requirement-Verification 4-18a, 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.

4-20 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 CEC, 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 CEC of the acceptability of the plan.

4-21 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 CEC on a quarterly basis per the above Requirement.

4-22 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 PTO #30 (SEE PREVIOUS PAGE) 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 CEC staff shall be allowed to witness the audit testing. The audit reports shall be submitted to the SJVUAPCD within 30 days of each audit.

4-23 DELETED 11/17/99

4-24 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 CEC shall contain a statement on the status of applicable compliance with SJVUAPCD Rules.

4-25 AMENDED 11/17/99 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 CEC 60 days before installation of the equipment identified in Requirement 4-25.

4-26 a. Of the original 52 steam generators and heaters used for mitigation, ~~six~~ 4 steam generators and heaters (Permit Numbers: S-1135-115, ~~'116~~, ~~'119~~, ~~'120~~, '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 4 field steam generators may be operated to produce steam in its place (field steam generator permit numbers:S-1135-115, ~~'116~~, '119, ~~'120~~, '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 CEC. These logs shall be included in the quarterly compliance reports submitted to the CEC. The SJVUAPCD and CEC shall receive immediate written notification of planned operational status changes of the offset sources listed above.

4-27 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 CEC. The log shall contain records of the fuel purchased, lower heating value (LHV), sulfur content, and daily fuel consumed.

4-28 Accurate records of SOx (as SO2). NOx (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 CEC upon request.

4-29 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 4-18 and 4-26.

4-30 Before commencement of construction, the project owner shall receive APCO approval of a comprehensive plan detailing how compliance with the 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 CEC), the project owner shall provide the above mentioned emission limit compliance plan to the SJVUAPCD and the CEC 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.

4-31 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 4-26.

Verification:

a. The project owner shall submit to the SJVUAPCD and the CEC 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 Condition for Certification Requirement 4-26) 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 Condition for Certification Requirement 4-26) 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.

4-32 DELETED 11/17/99

4-33 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 CEC during both construction and operation upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays).

4-34 The Steam Pit-Rock Muffler Permit unit shall be equipped with sampling provisions consistent with EPA and SJVUAPCD requirements.

See CC-503

Verification: MSCC shall submit to the SJVUAPCD and the CEC 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 CEC CPM of the acceptability of the plan.

4-35 The Steam Pit-Rock Muffler unit shall receive steam only from MSCC cogeneration units SJVUAPCD permit numbers 4014800 ...801 and ...802. S-1135-224, -225, -226

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

4-36 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 4-26) 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.

4-37 The Steam Pit-Rock Muffler unit shall not be used for more than six hours in any one day.

Verification: See Condition No. 38.

4-38 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 staff review on request. The records shall provide data for no less than one year from the date of request.

4-39 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.

4-40 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.

4-41 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).

4-42 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.

4-43 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 #38.

4-44 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 4-18.

Verification: See the Verification for Condition 4-45

4-45 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 4-44).

Gas-fired Case: per turbine train
Oxides of Nitrogen 140 lbm/hr averaged over 2 hours as NO2
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.

4-46 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 4-47.

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

Gas-fired case: per turbine train
Oxides of Nitrogen 140 lbm/hr as NO2
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 AMENDED 9/26/07 The emission of unreacted ammonia slip from any exhaust stack shall not exceed the following limits:

10 ppm @ 15% O2 averaged over 24 hours

Verification: The owner shall monitor and record the ammonia slip from each exhaust stack as required in Conditions of Certification (COC) AQ-49 through AQ-54. The owner shall report the ammonia slip as part of the quarterly emission report required by COC AQ-21.

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

ADD SCR

STATE OF CALIFORNIA
State Energy Resources
Conservation and Development Commission

In the Matter of:	)	Docket No. 85-AFC-3C
	)	Order No. 03-0909-02
Midway Sunset Cogeneration Company	)	
MIDWAY SUNSET COGENERATION	)	ORDER APPROVING a Petition
PROJECT	)	to Add Selective Catalytic
	)	Reduction Systems

The Midway Sunset Cogeneration Company (MSCC), the owner/operator of the Midway Sunset Cogeneration Project, has requested to modify the facility by adding Selective Catalytic Reduction systems. The modifications will result in revisions to the California Energy Commission's Decision (Condition of Certification AQ-18 will be modified and Conditions of Certification AQ-48 through AQ-54 will be added). The modifications to the facility will allow MSCC to reduce NOx emissions and meet the San Joaquin Valley Air Pollution Control District's NOx compliance limit of 5 ppm at 15 percent O_2 (District Rule 4703, *"Stationary Gas Turbines" [amended April 25, 2002] Standard, Tier 2*).

COMMISSION FINDINGS

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

A. There will be no new or additional unmitigated significant environmental impacts associated with the proposed change.

B. The facility will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code section 25523.

C. The changes will be beneficial to the public, as the modification will result in an overall net air quality benefit for NOx.

D. There has been a substantial change in circumstances resulting in information that was not available to the parties prior to the Energy Commission certification. Specifically, improved SCR systems can now control NOx emissions to below 5 ppm at 15 percent O_2.

CONCLUSION AND ORDER

The Energy Commission approves and hereby adopts MSCC's amendment petition and the proposed modified and added conditions in accordance with Title 20, Section 1769 (a) (3) of the California Code of Regulations. The following changes to the Midway Sunset Cogeneration Project Decision are shown as **bold** and underlined; deleted language is in ~~strikethrough~~.

AQ-18 ~~Pollutant emissions from each water injection 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):~~

~~Gas-Fired Case:~~

~~Particulate~~	~~9.98~~	~~lbm/hr~~
~~Sulfur Compounds~~	~~0.92~~	~~lbm/hr as SO2~~
~~Oxides of Nitrogen~~	~~79.01~~	~~lbm/hr as NO2~~
~~Hydrocarbons (nonmethane)~~	~~9.00~~	~~lbm/hr~~
~~Carbon Monoxide~~	~~94.00~~	~~lbm/hr~~

~~Pollutant emissions from each DLN-15 dry-low-NOx 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):~~

~~Gas-Fired Case:~~

~~Particulate~~	~~9.98~~	~~lbm/hr~~
~~Sulfur Compounds~~	~~0.92~~	~~lbm/hr as SO2~~
~~Oxides of Nitrogen~~	~~59.90~~	~~lbm/hr as NO2~~
~~Hydrocarbons (nonmethane)~~	~~9.00~~	~~lbm/hr~~
~~Carbon Monoxide~~	~~54.91~~	~~lbm/hr~~

SEE 10/30/06 AMENDMENT PAGE 5 OF 13

Pollutant emissions from each DLN-9 dry-low NOx combustion turbine without SCR controls 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):

Gas-Fired Case:

Particulate	9.98	lbm/hr
Sulfur Compounds	0.92	lbm/hr as SO2
Oxides of Nitrogen	36.08	lbm/hr as NO2
Hydrocarbons (nonmethane)	9.00	lbm/hr
Carbon Monoxide	54.91	lbm/hr

Pollutant emissions from each SCR controlled 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):

Gas-Fired Case:

Particulate	9.98	lbm/hr
Sulfur Compounds	0.92	lbm/hr as SO2
Oxides of Nitrogen	18.04	lbm/hr as NO2
Hydrocarbons (nonmethane)	9.00	lbm/hr
Carbon Monoxide	54.91	lbm/hr

Verification: ~~The combustion turbine identified as Unit B shall have completed the installation and testing of DLN-9 technology no later than January 31, 2001. The combustion turbine identified as Unit A shall have completed the installation and testing of DLN-9 technology no later than May 31, 2001. The combustion turbine identified as Unit C shall have completed the installation and testing of DLN-9 technology no later than June 30, 2001.~~ The combustion turbines identified as Units A and B shall have completed the installation and testing of the SCR system no later than April 30, 2004. The combustion turbine identified as Unit C shall have completed the installation and testing of SCR system no later than April 30, 2005.

a. At least 60 days before the commercial operation date of the power cogeneration facility, or 60 days before the permit to operate anniversary date, the project owner shall submit to the SJVUAPCD, CARB and the CEC a detailed performance test plan for the power plant's AECS. The performance test will be funded by the project owner and conducted by a third party approved by the SJVUAPCD and CARB. The SJVUAPCD will notify the project owner and the CEC of its approval, disapproval, or proposed modifications to the plan within 30 days of receipt of the plan. The project owner shall incorporate the SJVUAPCD and the Energy Commission's comments or modifications to the plan.

b. The project owner shall notify the SJVUAPCD and the CEC, within five days, before the facility begins commercial operation. The project owner 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 project owner shall submit the results of the compliance test within 30 days of completion of the tests. The project owner shall submit to the SJVUAPCD, its application for a Permit to Operate via registered mail. The project owner shall submit a copy of the application to the CEC within 10 days of its submittal to the SJVUAPCD. The SJVUAPCD shall approve or disapprove the application as prescribed in the SJVUAPCD rules.

AQ-48 The emission of unreacted ammonia slip from any exhaust stack shall not exceed ~~5~~ 10 ppm @ 15 percent O_2 averaged over 24 hours.

* SEE ATTACHED REVISED AQ-48. PAGE 1 OF 1

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 NOx 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). The calibration shall be adjusted when ever 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 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 NOx and CO emission limits.

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

AQ-52 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 Ammonia shall be injected whenever the selective catalytic reduction system catalyst exceeds the minimum ammonia injection temperature recommended by the manufacturer. ADDRESSED IN CURRENT AMENDMENT.

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 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.

STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND
DEVELOPMENT COMMISSION

_____
DATE

_____
WILLIAM J. KEESE, Chairman

Project Decision are shown as **bold** and underlined; deleted language is in ~~strikethrough~~.

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

10 ppm	**@ 15% O2**	**averaged over 24 hours**
~~5 ppm~~	~~@ 15% O2~~	~~averaged over 24 hours~~

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.

IT IS SO ORDERED.

STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND
DEVELOPMENT COMMISSION

September 26, 2007
DATE

Jackalyne Pfannenstiel, Chairman