

DOCKETED

Docket Number:	85-AFC-03
Project Title:	Midway-Sunset Cogeneration AFC (225 MW)
TN #:	201867
Document Title:	01-13-2014 Midway Sunset - AQ Staff Questions with Owner Responses
Description:	AQ Staff Questions (Pertaining to DLN1+TE Amendment) with Owner Responses
Filer:	Mary Dyas
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	3/12/2014 2:23:42 PM
Docketed Date:	3/12/2014

Dyas, Mary@Energy

From: Ray Smith [RSmith@midwaysunset.com]
Sent: Monday, January 13, 2014 1:11 PM
To: Hughes, Joseph@Energy
Cc: Dyas, Mary@Energy; Dave Faiella; Greg Jans; Sandra Henriksen
Subject: FW: Questions for Midway Sunset AQ Petition to Amend

Joseph,

I hope the following responses will satisfy the CEC's questions concerning MSCC's proposed amendment to replace Units A&B existing combustion systems with DLN1+TE combustion systems.

1. The original design of the combustion turbine units (CTGs) included bypass stacks for the heat recovery steam generators (HRSGs). The HRSGs require flowing water in order to operate without damaging the heat recovery tubes. When the facility was first permitted, the bypass stacks allowed the CTGs to continue to operate, supplying power to the grid, on the rare instances that produced water from the oil field was not available for the HRSGs. Eventually, the permitted NOx limits were reduced to the point that SCR was required. When SCR grids were installed inside the evaporator sections of the HRSGs, the bypass stacks could no longer be utilized without exceeding the permitted NOx limit. The change out to the DLN1+TE combustion systems will allow Units A&B to utilize the bypass stacks once again.
2. In order to take full advantage of the DLN1+TE combustion systems, MSCC is installing a continuous emissions monitor (CEM) grid with testing and sampling ports upstream of the bypass stack. The grid will cover a wider area of the stack and will mitigate any stratification that might occur. The existing SCR cogeneration stack sample system will remain in place and be annually certified in preparation of the unlikely event that ammonia injection is required during a cogeneration operation.
3. The DLN1+TE is, currently, leading edge technology. If it works as presented, MSCC's permitted NOx limits will be obtained without the use of the SCR system. If there are any problems, MSCC wishes to preserve the option of activating the SCR system.
4. If the DLN1+TE combustion system performs as designed, MSCC would have no reason to inject ammonia, and a financial incentive to not inject ammonia. Ammonia injection will be avoided to the extent feasible.
5. The SCR grid is basically inert unless ammonia is injected. The CTG exhaust passing through the SCR grid upstream of the main exhaust stack (HRSG) will have no effect on the SCR.
6. Other than eliminating ammonia slip, the change out to DLN1+TE combustion systems will have no effect on any CTG emissions. As peaking units, Units A&B will operate less than base loaded cogeneration units and subsequent emissions will be correspondingly less.

Thanks again, Joseph, for your efforts on MSCC's petition. If the CEC has any other questions or concerns, please contact me.

From: Hughes, Joseph@Energy [<mailto:Joseph.Hughes@energy.ca.gov>]
Sent: Monday, January 06, 2014 2:29 PM
To: Ray Smith
Cc: Dyas, Mary@Energy
Subject: Questions for Midway Sunset AQ Petition to Amend

Mr. Smith,

Per our recent conversation, can you please provide confirmation or clarifications on the following questions pertaining to the Midway Sunset air quality Petition to Amend to Replace Units A&B combustion systems with DLN1+TE combustion systems?

1. Please confirm that in addition to the three GE frame 7E combustion turbine generators (CTGs) and three heat recovery steam generators (HRSGs), Midway Sunset also consist of three existing bypass valves and stacks that were utilized for operation in simple cycle mode when cogeneration operation was not needed.
2. Please confirm that in order to utilize the bypass stacks, one sampling port and one test port would need to be installed on each of the bypass stacks to remain in compliance with all LORS.
3. Please explain how and when the use of the Selective Catalytic Reduction (SCR) system would be used if the DLN1+TE system is capable of achieving 5ppm NOx emission limit?
4. Would ammonia injection be avoided to the extent feasible?
5. Can the HRSGs, or more specifically, the SCR be operated without injecting ammonia?
6. Please describe how this petition to amend (operation as simple cycle or cogeneration) would affect GHG emissions. Would there be an expected increase in facility operations?

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