ATTACHMENT J

Comments and Responses to Proposed Amendments of BACT Guidelines

Public meetings were held on February 25, July 22, and October 27, 2020 with the BACT Scientific Review Committee to present and discuss the proposed amendments to the BACT Guidelines. The following written comments, questions, and staff responses are from letters and e-mails received during the 30-day comment period starting July 22, 2020.

A. Comment Letter A – Gary Rubenstein, Foulweather Consulting / BACT SRC member

B. Comment Letter B – Wayne Miller, Associate Director CE-CERT / BACT SRC member

C. Comment Letter C – Joy Brooks, Senior Manager - SCE / BACT SRC member

D. Comment Letter D – Daniel McGivney, Environmental Affairs Program Manager SoCalGas Company / BACT SRC member

Comment Letter A (Mr. Rubenstein)

July 20, 2020

To: Al Baez, SCAQMD
Bahareh Farahani, SCAQMD

From: Gary Rubenstein

Subject: Comments on Materials for July 22 BACT SRC Meeting

Following are my comments on the materials prepared for the July 22 BACT SRC meeting. As I indicated to you a couple of weeks ago, I have a conflict this Wednesday that prevents me from participating in the virtual meeting.

Part B Guidelines Proposed Determinations

A1 A2 A3

- A/N 526607, Duct burner: It is unclear what is being established as BACT in this listing. The burner is described in section 1.G as a "Low-NOx Burner", and in Section 5.C as an "Ultra-low NOx burner", but there are no NOx limits shown in Section 4. Section 6.A indicates that compliance is demonstrated by "CEMS Data", but is not possible using a CEMS to distinguish emissions generated by a duct burner from emissions from the upstream source (in this case, a gas turbine). If this BACT determination merely addresses fuel sulfur content (as suggested in Part 4.B, I question whether such a determination is appropriate given the variable sulfur content and quantity of refinery fuel gas available at different facilities. If the BACT determination is based on the use of sulfur-removal techniques or blending with pipeline-quality natural gas, those bases should be stated so that future reviewers can evaluate the comparability of this listing with other facilities that might be subject to BACT for SOx emissions.

Response to Comment Letter A (Mr. Rubenstein)

Response A1:

Since this BACT determination is for SOx emissions not NOx, staff removed "low-NOx burner" in Section 5.C of the BACT determination form.

In addition, Section 4.B describes the BACT requirements for Total Reduced Sulfur (TRS) concentration of refinery fuel gas and Section 4.D defines that the sulfur limit is to limit the SOx emissions.

Response A2:

To address the received comments about CEMS data in Section 6.A of the LAER Determination form, staff has added the following language:

> "*Compliance demonstrated by maintaining the CEMS to continuously monitor the total reduced sulfur compounds calculated as H2S concentration in the fuel gases.*"

Response A3:

Staff concurs with this comment and has added the following clarification to Section 5.C of the LAER Determination form:

> "*The total reduced sulfur concentration limit must be measured in the refinery fuel gas before blending with natural gas for all but 72 hours per year. The total reduced sulfur concentration of the refinery fuel gas may be measured after blending with natural gas for a maximum of 72 hours per year.*"

Comment Letter B (Dr. Miller - UCR)

From: Wayne Miller
Sent: Wednesday, July 22, 2020 9:54 PM
To: Al Baez <abaez@aqmd.gov>; Bahareh Farahani <bbrumand@aqmd.gov>
Subject: RE: Proposed Draft Updates to the BACT Guidelines and Minutes from 2/25/20 BACT SRC meeting

Al and Bahareh …you sure are prepared for the meetings ..thanks

B1 I was concerned about the terminal emissions as to ROG from a light HC (solvent terminal) vs a heavy HC (crude oil terminal). I know the BACT deals with emissions from the destruction unit …did not know if the working unit has a ROG limit…perhaps in the permit?

B2 The other question was about monitoring sulfur in the fuel to estimate sulfur in the exhaust. If NG +refinery gas, then there is mercaptan sulfur in the NG and may not be counted…but NG-sulfur likely to be a minor constituent so OK. It was not clear if the limits were for sulfur as sulfur ….or sulfur as H2S …or sulfur as SO2+H2SO4.

My other concern was the sulfur leaves the combustion zone as SO2 and H2SO4 with the later contributing to PM release in a non-attainment area .. maybe not a concern for BACT

B3 Last question was about chrome plating and demisting agents. As you know some plants use the effective PFAS family and now PFAS is considered a health hazard so being reduced in the environment. For example, levels in drinking water have to be below 10parts per trillion (yes trillion!) Are we looking at the release of PFAS as part of the BACT?

Respectfully

Wayne Miller

Adjunct Professor CEE &

Associate Director

Response to Comment Letter B (Dr. Miller - UCR)

Response B1:

Flare (Thermal Oxidizer) - Liquid Transfer and Handling Marine Loading
There is a condition in the permit which limit the VOC and the facility has to meet the VOC limit regardless of the product loaded. An hourly throughput limit is tagged R1303(b)(2) offsets.

Response B2:

Duct Burner – Refinery Fuel Gas
The owner or operator of an effected fuel gas combustion device shall comply with either stack gas SO2 concentration limits or fuel gas H2S concentration limits. Since the duct burner exhaust gas is diluted by the exhaust gas from the gas turbine, the fuel directed to the Duct Burner must comply with the fuel gas H2S limits. The limit is for Total Reduced Sulfur as H2S. In this BACT determination we are limiting the TRS as H2S in the fuel gas not the stack gas SO2. Total reduced sulfur (TRS) content of the refinery fuel mix drum is be measured with a fuel sulfur GC.

Response B3:

Chrome plating and demisting agents
From air quality perspective, the emissions testing of one of the fume suppressants, Macuplex STR NPFX, which contains highest amount of PFAS demonstrated that air exposure to PFAS is 0.000775 mg/amp-hr (very small) for approximately 4 gallons used per year. According to our Planning & Rule staff, at this time we are not proposing a ban on PFAS containing chemical fume suppressants. It is an ongoing discussion and one of the goals is to encourage the installation of pollution controls for smaller facilities in anticipation of ban from any agency.

Comment Letter C (Ms. Brooks - SCE)

SOUTHERN CALIFORNIA EDISON
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August 21, 2020

Al Baez
Program Supervisor, Science and Technology Advancement
South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765
Via email at: abaez@aqmd.gov; BACT_Team@aqmd.gov

Subject: **Proposed Updates to Best Control available Control Technology (BACT) Guidelines**

Dear Mr. Baez:

Southern California Edison (SCE) appreciates the opportunity to comment on the South Coast Air Quality Management District's (District) proposed updates to the BACT guidelines. The guidelines would establish new BACT limits on major and non-major source facilities and update Maximum Cost Effectiveness Criteria for non-major source facilities.

C1 SCE understands the needs to maintain BACT consistency with the recent changes to the District's rules and maintain the current BACT list. However, SCE has significant concerns about the proposed limits for nitrogen oxides (NOx) and carbon monoxide (CO) on the natural gas-fired simple-cycle gas turbines. The District proposed to lower the NOx limit from 2.5 to 2.3 ppmvd (parts per million by volume, dry) and the CO limit from 6 to 4 ppmvd at 15% O_2. These limits were based on two natural gas-fired simple-cycle turbines operated by the City of Riverside Public Utilities Department. Because of the lack of available public information on these units, it is unclear if these gas turbines' designs and operating conditions are representative of a typical simple-cycle gas turbine.

C2 Given that the BACT limits are being proposed based on very few units, SCE requests that the District release additional information on these units, such as detailed information on the units' design, operating conditions, historical data on emissions exceedances, and detailed source test results, which will allow SCE and other operators to perform a more complete analysis and provide more substantive comments and input. SCE will continue to review the available data, as well as any additional data the District can provide, and will provide additional technical comments before the upcoming working group meeting in October.

Thank you for your consideration. If you have any questions or concerns regarding this letter, please contact Kendra Jucksch, Senior Advisor, with any questions at 626-302-7384 or kendra.jucksch@sce.com.

Very truly yours,

Joy Brooks
Senior Manager, Air Quality
Southern California Edison

cc: Terry Maddox, SCE
Tammy Yamasaki, SCE
Kendra Jucksch, SCE

Response to Comment Letter C (Ms. Brooks - SCE)

Proposed LAER Determination for 49.8 MW Simple Cycle Gas Turbine

Staff had a meeting with SCE on September 8, 2020 to address their concerns and questions. Here is a summary of the discussed topics:

Response C1:

This is a proposed LAER Determination applicable to major sources which has met all the criteria for achieved in practice LAER in accordance with Part A of the BACT Guidelines. The proposed determination is based on two 49.8 MW peaker units permitted at 2.3 PPM NOx and 4 ppm CO at a local utility. Both gas turbines have been in operation several years and showed compliance with permitted limits and verified through source tests and CEMS data. Both Simple Cycle Gas Turbines are operating as typical peaker units. For clarification, staff has added the following language to Section 1.D of the LAER Determination form:

> "*The equipment is at a "Peaker" plant to support California Independent System Operator (CAISO) during periods of high electricity demand.*"

In addition, in Feb. 2019 a LAER Determination was posted on Part B regarding a 100 MW Simple Cycle Gas Turbine which achieved 4 ppm CO.

Response C2:

Section 5 of the proposed LAER Determination form includes detailed information on the Gas Turbines and SCR control system. In addition, the most recent RATA test results were added to Section 6.

RATA Test Date	Unit 3	RATA Test Date	Unit 4
4/15/20	NOx = 1.83 ppm CO = 3.58 ppm	**4/16/20**	NOx = 2.13 ppm CO = 2.71 ppm
9/10/19	NOx = 2.14 ppm CO = 2.97 ppm	**10/3/19**	NOx = 2.23 ppm CO = 2.28 ppm
8/14/18	NOx = 2.01 ppm CO = 2.98 ppm	**2/2/18**	NOx = 2.26 ppm CO = 2.95 ppm

Staff reviewed the CEMS data for a period of one year (2019) for both units. The results show that the NOx and CO emissions from both units are in compliance with the permit limits. Additional detailed information on both units may be requested through the Public Records request process.

Comment Letter D (Mr. McGivney - SoCal Gas)

From: McGivney, Daniel
Sent: Thursday, September 3, 2020 10:28 AM
To: Al Baez <abaez@aqmd.gov>
Cc: Arney, Gregg
Subject: Discuss Rich-Burn Engine Elec Generation BACT Determination for SoCalGas Tecogen Retrofitted Generators

D1 { Al, I hope you are doing well. I wanted to see if you and your team might be available to discuss the BACT determination for SoCalGas' Tecogen emission control system retrofit on rich-burn ICE-electric generation units? We are available on Wednesday, September 9 from 3-5 p.m. (or a bit later), or Thursday, September 10 between 8 and 10 a.m. We understand the 30-day comment period has ended, but we would really like to provide some technical background in regard the installation and some of the descriptions contained in the BACT determination. Please let me know. Thank you.

Daniel McGivney
Environmental Affairs Program Manager
Southern California Gas Company

Response to Comment Letter D (Mr. McGivney - SoCal Gas)

Proposed LAER Determination for I.C. Engine, Stationary, Non-Emergency, Electrical Generator

Response D1:

Per the meeting and discussion held on 9/10/20 with representatives from Southern California Gas Company staff has agreed to include additional clarification language in the following sections of the proposed LAER Determination form:

Section 1. "Equipment Information"

Item D "Function"

"*SoCalGas' Aliso Canyon Storage Facility is an underground natural gas storage site. This is one of four prime engines generating electrical power to remote sites where various equipment is located, such as pumps and/or compressors and/or controls.*"

Item L "Equipment Information Coments"

"*Tecogen Ultra Emissions Kit" to "Tecogen Ultera Retrofit Emissions Kit."*

Section 5. "Control Technology"

Item C "Description"

Revise to "*Tecogen Ultera Emissions Retrofit Kit control system, comprised of Three-Way Catalyst (DCL) with Air/Fuel Ratio Controller (Continental Controls Air/Fuel Ratio Controller Model EGO2) and Oxidation Catalyst (Tecogen proprietary).*"

Item G "Control Technology Comments"

Remove "Tecogen system will not override current NSCR and AFRC setup on engine, it will only be an "add-on" to the emission control system." The existing system was removed and replaced by the Tecogen Ultera emissions retrofit kit. Replacing with "This system is retrofitted with an electrical load bank, which must be operated in order to continuously meet permitted emissions limits. Catalyst life has been short due to system back pressure, condensation, and high exhaust temperatures."