

DOCKETED

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CALIFORNIA ENERGY COMMISSION

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DATE: September 7, 2018

TO: Interested Parties

FROM: John Heiser, Project Manager

**SUBJECT: Sutter Energy Center Petition to Amend
(97-AFC-02C) Staff Analysis on Petition to Amend**

On July 17, 2018, CCFC Sutter Energy, LLC (Petitioner) filed a petition to amend the Sutter Energy Center's (SEC) (97-AFC-02C) license issued by the California Energy Commission (Energy Commission). The Petitioner is requesting to modify Air Quality Condition of Certification AQ-32 to enhance operational flexibility.

The combined-cycle, 578-megawatt, natural gas-fired facility was certified by the Energy Commission on April 14, 1999, and began commercial operation on July 2, 2001. SEC is located approximately seven miles southwest of Yuba City, on South Township Road near the intersection with Best Road.

The petition requests amending existing Air Quality Condition of Certification AQ-32 to enhance operational flexibility and conformance with Sutter Energy Center's (SEC) Title V Operating Permit issued by the Feather River Air Quality Management District. The Sutter Amendment requests permission to have 800 hours of startups per year at the facility level, rather than 400 hours per turbine (for the two turbines), for a total of 800 startup hours over a year. Likewise, the amendment requests permission to have 600 hours of shutdown per year at the facility level, rather than 300 hours per turbine. This would give Sutter more operational flexibility. The changes would not increase any permitted emission limits as proposed, and the refinement to AQ-32 does not affect SEC's ability to comply with all applicable laws, ordinances, regulations and standards.

Staff reviewed the petition and assessed the impacts of this proposal on environmental quality and on public health and safety and for conformance with all applicable laws ordinances, regulations, and standards (LORS). Staff determined that **Air Quality** is the only technical area affected by the petition. Air Quality staff propose the modification of Condition of Certification **AQ-32** addressing limits to startup and shutdown hours to make it consistent with the proposed changes to SEC's permit issued by Feather River Air Quality Management District (District).

It is staff's conclusion that, with the implementation of these changes, the project would remain in compliance with applicable LORS, and the proposed modifications would not cause a significant impact on the environment. (Cal. Code Regs., tit. 20, § 1769.) Staff intends to recommend approval of the petition at the Energy Commission's September 21, 2018 Business Meeting.

The Energy Commission's webpage for this facility, <https://www.energy.ca.gov/sitingcases/sutterpower/index.html>, has a link to the petition and the staff analysis. After the Commission Decision, the Energy Commission's Order regarding this petition will also be available from the same webpage.

This notice is being mailed to the Energy Commission's list of interested parties and property owners adjacent to the facility site. It will also be emailed to the facility listserv. The listserv is an automated Energy Commission system by which information about this facility is emailed to parties who have subscribed. To subscribe, go to the Commission's webpage for this facility, cited above, scroll down the right side of the project webpage to the box labeled "Subscribe," and provide the requested contact information.

Public Comment: Those who wish to comment on the analysis are asked to submit their comments by 5:00 p.m., September 20, 2018. Those who wish to comment can use the Energy Commission's e-Commenting feature as follows: Go to the Energy Commission's SEC webpage and click on either the "Comment on this Proceeding" or "Submit e-Comment" link. In the form, provide the required information—your full name, email address, the comment title, and either a comment or an attached document. The comment title should be "[Your Name]'s Comments re SEC Petition." Type your comments into the "Comment Text" field, or upload and attach a document with your comments. The maximum upload file size is 10MB, and only .doc, .docx, or .pdf attachments will be accepted. Enter the phrase that is used to prevent spamming. Then click on the "Agree and Submit your Comments" button to submit your comments to the Energy Commission Dockets Unit. When your comments are accepted and docketed, you will receive an email with a link to them on the facility webpage.

Written comments may also be mailed or hand-delivered to:

California Energy Commission
Dockets Unit, MS-4
Docket No. 97-AFC-02C
1516 Ninth Street
Sacramento, CA 95814-5512

All filed comments and materials accepted by the Dockets Unit will be added to the facility docket log and become publically accessible on the Energy Commission's webpage for the facility.

Contact: If you have questions about this notice, please contact John Heiser, Project Manager, at (916) 653-8236, or via e-mail at John.Heiser@energy.ca.gov.

Public Participation: The Energy Commission's Public Adviser's Office is available to provide the public with an understanding of the proceedings and to make recommendations for meaningful participation. For assistance, contact Alana Mathews, Public Adviser, at (916) 654-4489, or toll free in California at (800) 822-6228, or by email at publicadviser@energy.ca.gov.

News media inquiries should be directed to the Energy Commission Media Office at (916) 654-4989, or by e-mail at mediaoffice@energy.ca.gov.

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STAFF ANALYSIS

**SUTTER ENERGY CENTER
(97-AFC-02C)**

PETITION TO AMEND

**SUTTER ENERGY CENTER
(97-AFC-02C)
PETITION TO AMEND THE COMMISSION DECISION
STAFF ANALYSIS**

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EXECUTIVE SUMMARY
John Heiser, AICP

INTRODUCTION

On July 17, 2018, CCFC Sutter Energy, LLC (Petitioner) filed a petition to amend the Sutter Energy Center's (SEC) (97-AFC-02C) license issued by the California Energy Commission (Energy Commission). The Petitioner is requesting to modify Air Quality Condition of Certification AQ-32 to enhance operational flexibility and conform to SEC's Title V Operating Permit issued by the Feather River Air Quality Management District (District). The combined-cycle, 578-megawatt, natural gas-fired facility was certified by the Energy Commission on April 14, 1999, and began commercial operation on July 2, 2001.

PROJECT LOCATION AND DESCRIPTION

SEC is a nominal 578-megawatt (MW) combined-cycle power plant that began commercial operation on July 2, 2001. SEC is located approximately 7 miles southwest of Yuba City, Sutter County, along South Township Road in a rural area that is surrounded by orchards to the east and rice fields to the west. The facility consists of two combustion turbine generators, two heat recovery steam generators with duct burners, and a steam turbine generator.

Since the original Energy Commission Decision for the SEC (CEC 1999), the Commission has approved three amendments that made changes to the Air Quality Conditions of Certification that are described in the attached staff analysis. These amended conditions are still applicable to the SEC and to the modifications proposed in the current amendment.

This petition requests modifications to Air Quality Condition of Certification **AQ-32** (CCFC 2018). If approved, the amendment would:

- Revise **AQ-32 part (5)** to allow the maximum hours of startups per year and calendar quarter. The Energy Commission Air Quality Condition of Certification **AQ-32 (5)**, which currently limits the duration of the quarterly and annual startup hourly limit per turbine, would be modified to allow these limits to apply cumulatively to both combustion turbine generators (CTGs).
- Revise **AQ-32 part (6)** to allow the maximum hours of shutdowns per year and calendar quarter. The Energy Commission Air Quality Condition of Certification **AQ-32 (6)**, which currently limits the duration of quarterly and annual shutdown hourly limit per turbine, would be modified to allow these limits to apply cumulatively to both CTGs.

NECESSITY FOR THE PROPOSED MODIFICATIONS

The modifications to Condition of Certification **AQ-32** would conform the Energy Commission's license with SEC's Title V Operating Permit issued by the Feather River Air Quality Management District (District) on April 4, 2018. In issuing the Title V Operating Permit, the District approved refinements to **AQ-32** that provide the operational flexibility needed for SEC to support reliability and integration of intermittent renewable resources.

STAFF'S ASSESSMENT OF THE PROPOSED PROJECT CHANGES

Energy Commission technical staff reviewed the petition for potential environmental effects and consistency with applicable LORS. Because the petition proposes no physical changes to SEC, staff determined that **Air Quality** is the only technical area affected. Air Quality staff concluded that Petitioner's proposed amendment to the SEC's license would not have a significant impact on the environment and the project would continue to comply with LORS. Staff's conclusions reached in each technical area are summarized in **Executive Summary Table 1**.

**Executive Summary Table 1
Summary of Impacts to Each Technical Area**

TECHNICAL AREAS REVIEWED	STAFF RESPONSE			Revised Conditions of Certification Recommended
	Technical Area Not Affected	No Significant Environmental Impact or LORS Inconsistency*	Process As Amendment	
Air Quality			X	X
Biological Resources	X			
Cultural Resources	X			
Efficiency	X			
Facility Design	X			
Geology and Paleontology	X			
Hazardous Materials Management	X			
Land Use	X			
Noise and Vibration	X			
Public Health	X			
Reliability	X			
Socioeconomics/Environmental Justice	X			
Soil and Water Resources	X			
Traffic and Transportation	X			
Transmission Line Safety & Nuisance	X			
Transmission System Engineering	X			
Visual Resources	X			
Waste Management	X			
Worker Safety and Fire Protection	X			

*There is no possibility that the modifications may have a significant effect on the environment and the modification will not result in a change or deletion of a condition adopted by the commission in the final decision or make changes that would cause the project not to comply with any applicable laws, ordinances, regulations, or standards (LORS) (Cal. Code Regs., tit. 20, § 1769 (a)(2)).

Staff has determined that the following technical or environmental areas are not affected by the proposed changes: **Biological Resources, Cultural Resources, Efficiency, Facility Design, Geology and Paleontology, Hazardous Materials Management, Land Use, Noise and Vibration, Public Health, Reliability, Socioeconomics, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Transmission System Engineering, Visual Resources, Waste Management, and Worker Safety and Fire Protection**

AIR QUALITY

The attached Air Quality analysis indicated that the Air District determined that the proposed modifications at the SEC would comply with all applicable District rules and regulations. No other permit limits, concentrations, mass emissions, or reporting requirements would change as a result of this modification.

Staff's analysis also determined the requested modifications would not increase allowable emissions, and agrees that the startup and shutdown limitations imposed by **parts 5 and 6** of Condition of Certification **AQ-32** can be modified without causing adverse environmental impacts.

Staff recommends adoption of modified air quality Condition of Certification **AQ-32, part 5 and part 6**.

The proposed modifications are not expected to impact the project's ability to comply with all applicable LORS, as confirmed by the Title V permit and this analysis.

BIOLOGICAL RESOURCES

The proposed modifications apply to Air Quality Condition of Certification (AQ-32), **AQ-32**, would not exceed permit limits, and would not result in any change to the physical environment or ground disturbance activities. Therefore, the proposed modifications would not have any impacts on biological resources.

PUBLIC HEALTH

This change allows for increased flexibility without increasing public health impacts. Therefore, the proposed modifications would not have any impacts on Public Health.

SOCIOECONOMICS

The proposed revisions of **AQ-32** related to air emission limits would not result in the need to employ more workers. The proposed modifications would not have the potential to affect socioeconomics.

TRAFFIC AND TRANSPORTATION

The proposed changes to Condition of Certification **AQ-32** would not require new infrastructure or construction of any kind, and no physical change to the environment would occur.

VISUAL RESOURCES

The proposed changes to Condition of Certification **AQ-32** would not require new infrastructure or construction of any kind, and no physical change to the environment would occur.

ENVIRONMENTAL JUSTICE (EJ)

Environmental Justice – Figure 1 shows 2010 census blocks in the six-mile radius of the Sutter Energy Center a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States Environmental Protection Agency’s *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

Based on California Department of Education data in the **Environmental Justice – Table 1** and presented in **Environmental Justice – Figure 2**, staff concluded that the percentage of those living in the school district of Yuba City Unified School District (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography, and thus are considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

**Environmental Justice – Table 1
Low Income Data within the Project Area**

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Franklin Elementary School District	478	134	28.0%
Winship Robbins Elementary School District	740	388	52.4%
Yuba City Unified School District	13,284	9,048	68.1%
REFERENCE GEOGRAPHY			
Sutter County	22,633	13,653	60.3%
<small>Source: CDE 2017. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2016-2017, <http://dq.cde.ca.gov/dataquest/>.</small>			

Staff’s environmental justice impact analysis evaluates the project’s impacts on the EJ population living within a six-mile radius of the project site. Staff uses a six-mile radius around the project site, based on the parameters for dispersion modeling used in staff’s air quality analysis, to obtain data to gain a better understanding of the demographic makeup of the communities potentially impacted by the project. Air quality impacts are generally the type of project impacts that extend the furthest from a project site. Beyond a six-mile radius air emissions have either settled out of the air column or mixed with surrounding air to the extent the potential impacts are less than significant.

ENVIRONMENTAL JUSTICE CONCLUSIONS

If affected, the following technical areas would discuss impacts to EJ populations: air quality, cultural resources (indigenous people), hazardous materials management, land use, noise and vibration, public health, socioeconomics, soil and water resources, traffic and transportation, transmission line safety and nuisance, visual resources, and waste management. None of these areas are affected by the proposed petition other than air quality. In the air quality analysis, staff proposes changes to conditions of certification.

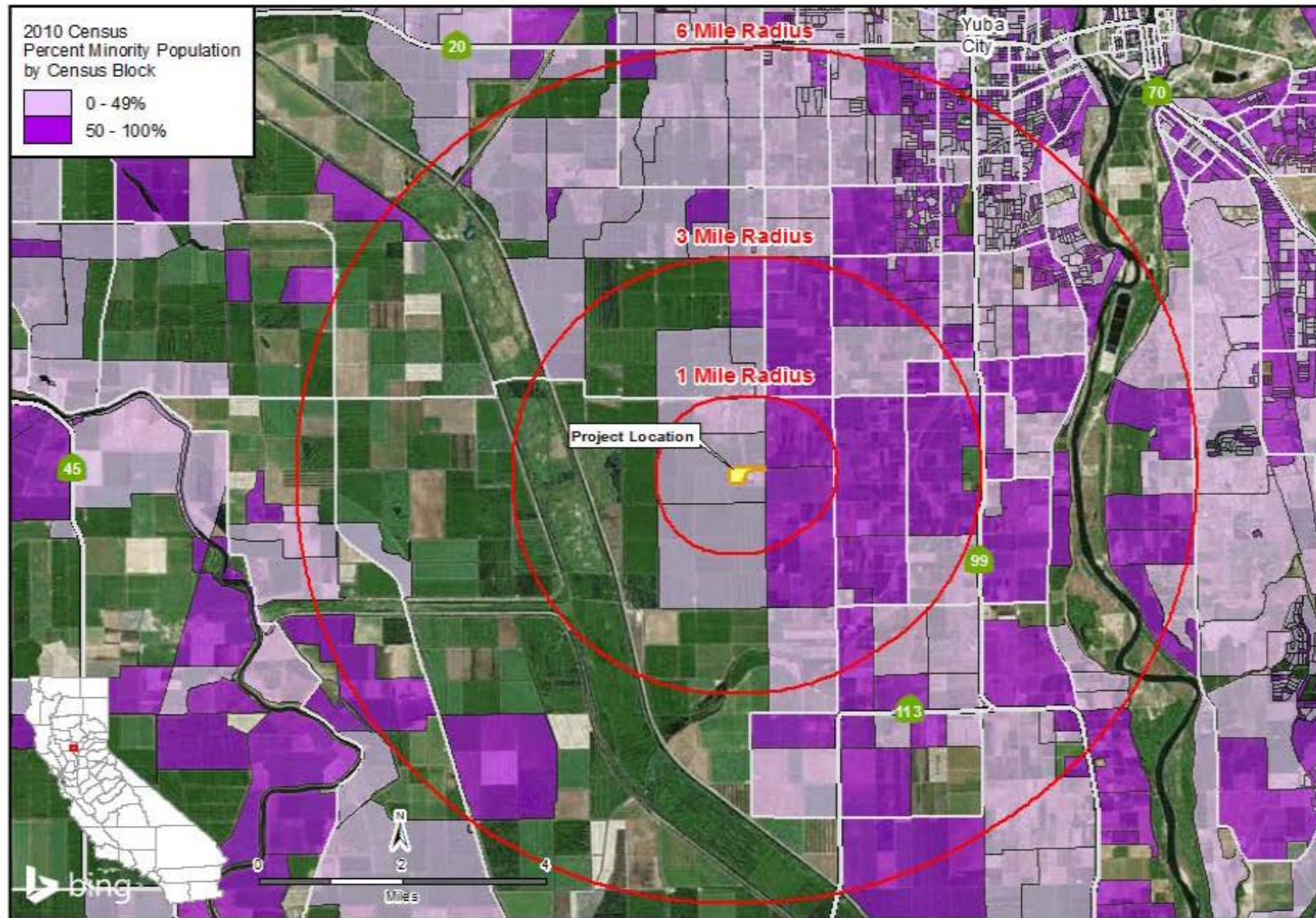
Staff has determined that by adopting the proposed changes to the existing conditions of certification, the amended project would not cause significant air quality impacts for any population in the project's six-mile radius, including the EJ population represented in **Environmental Justice – Figure 1 and Figure 2 and Table 1**.

STAFF RECOMMENDATIONS AND CONCLUSIONS

Staff concludes that the following required findings, mandated by Title 20, California Code of Regulations, section 1769 (a)(3), can be made, and staff recommends approval of the petition by the Energy Commission:

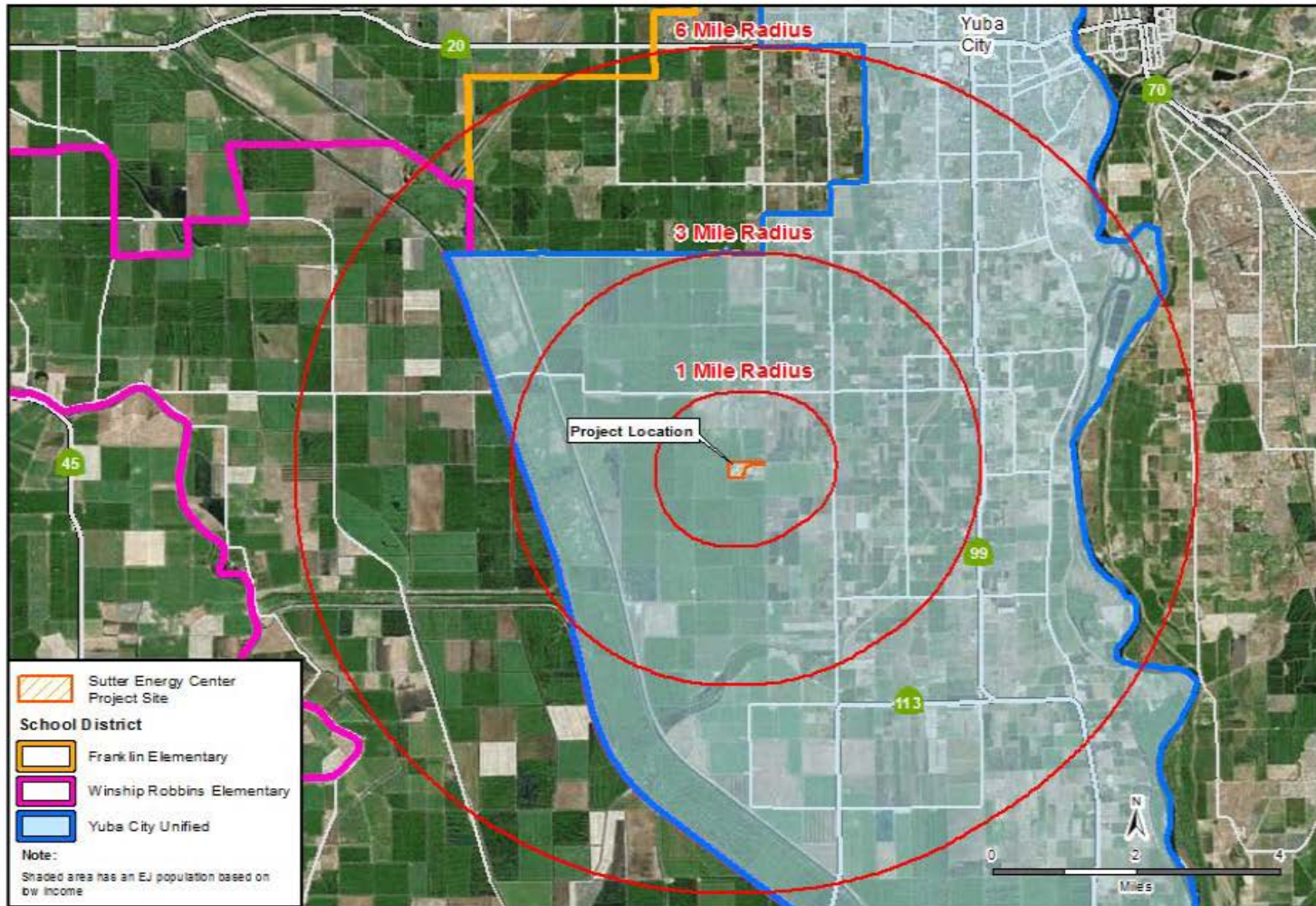
- The proposed modifications would not change the findings in the Energy Commission's Decision pursuant to Title 20, California Code of Regulations, section 1748(b)(5);
- There would be no new or additional unmitigated, significant environmental impacts associated with the proposed modification;
- The facility would remain in compliance with all applicable LORS;
- Since there would be no increase in allowable emissions, staff agrees that the startup and shutdown limitations imposed by **parts 5 and 6** of Condition of Certification **AQ-32** can be modified without causing adverse environmental impacts; and
- The proposed modifications would be beneficial to the project owner and public because it would allow SEC to operate with greater flexibility to meet California ISO's grid needs.

ENVIRONMENTAL JUSTICE - FIGURE 1
Sutter Energy Center - Census 2010 Minority Population by Census Block



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Census 2010 PL 94-171 Data

ENVIRONMENTAL JUSTICE - FIGURE 2
 Sutter Energy Center - Environmental Justice Population Based on Low Income



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
 SOURCE: TIGER Data, CA Dept of Education DataQuest

SUTTER ENERGY CENTER (97-AFC-02C)

Petition to Amend AQ-32, Part 5 and Part 6

AIR QUALITY ANALYSIS

Jacquelyn Record

INTRODUCTION

On July 17, 2018, CCFC Sutter Energy, LLC (Petitioner), filed a petition to amend (Petition) the Energy Commission's Final Decision (Decision) for the Sutter Energy Center (SEC).

Since the original Energy Commission Decision for the SEC (CEC 1999), the Commission has approved three amendments that made changes to the Air Quality Conditions of Certification. The first amendment approved changes to startup emission limits and ammonia injection rate limit and was docketed on December 21, 2000. The second amendment, approved in 2003, resulted in changes to Air Quality Conditions of Certification **AQ-7** through **AQ-41**. The most recent amendment to construct the Grimes natural gas pipeline, approved in May, 2011, added Conditions of Certification **AQ-SC1** through **AQ-SC5**. These amended conditions are still applicable to the SEC and to the modifications proposed in the current amendment.

This petition requests modifications to Air Quality Condition of Certification **AQ-32** (CCFC 2018). If approved, the amendment would:

- Revise **AQ-32 part (5)** regarding the maximum duration of combustion turbine generator (CTG) startups per year and calendar quarter. The Energy Commission Air Quality Condition of Certification **AQ-32 (5)**, which currently limits the duration of the quarterly and annual startup hourly limit per turbine, would be modified to allow these limits to apply to both CTGs combined.
- Revise **AQ-32 part (6)** regarding the maximum duration of CTG shutdowns per year and calendar quarter. The Energy Commission Air Quality Condition of Certification **AQ-32 (6)**, which currently limits the duration of quarterly and annual shutdown hourly limit per turbine, would be modified to allow these limits to apply to both CTGs combined.

In this analysis, staff evaluated the potential for air quality impacts from these proposed modifications.

BACKGROUND

The SEC was originally certified by the Energy Commission on April 14, 1999 (CEC 1999), and began commercial operation on July 2, 2001. SEC is located approximately 7 miles southwest of Yuba City, Sutter County, California. SEC is a 578-megawatt (MW), natural-gas-fired, combined-cycle facility. The design consists of two identical combustion turbine generators (CTG), two heat recovery steam generators (HRSG) with duct burners, and a steam turbine generator (STG).

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

The 1999 Decision and subsequently approved amendments concluded that, contingent on its compliance with the Commission's Conditions of Certification, the SEC would be in compliance with all applicable laws, ordinances, regulations, and standards (LORS). Staff has identified no new LORS or changes to LORS applicable to the proposed modifications.

Ambient Air Quality Standard Changes

Since the SEC's 1999 certification, changes to the federal Ambient Air Quality Standards (AAQs) have changed the categorization of air quality in the SEC area. The 1-hour nitrogen dioxide (NO₂) National Ambient Air Quality Standard (NAAQS) became effective on April 12, 2010. In addition, a new 1-hour SO₂ NAAQS was established, and the 24-hour and annual SO₂ NAAQSs were revoked on June 2, 2010.

The currently applicable federal and state AAQs are listed in **Air Quality Table 1**. As indicated in this table, the averaging times for the various standards (the duration over which they are measured) range from hourly to annually. The standards are read as a concentration, in parts per million (ppm) or parts per billion (ppb), or as a weighted mass of material per volume of air, in milligrams or micrograms of pollutant per cubic meter of air (mg/m³ and µg/m³).

**Air Quality Table 1
Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O ₃) ^a	8-hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)
	1-hour	—	0.09 ppm (180 µg/m ³)
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)
	1-hour	35 ppm (40 mg/m ³)	20 ppm (23 mg/m ³)
Nitrogen Dioxide (NO ₂)	annual	53 ppb (100 µg/m ³)	0.030 ppm (57 µg/m ³)
	1-hour	100 ppb (188 µg/m ³) ^b	0.18 ppm (339 µg/m ³)
Sulfur Dioxide (SO ₂)	24-hour	—	0.04 ppm (105 µg/m ³)
	3-hour	0.5 ppm (1300 µg/m ³)	—
	1-hour	75 ppb (196 µg/m ³) ^c	0.25 ppm (655 µg/m ³)
Respirable Particulate Matter (PM ₁₀)	annual	—	20 µg/m ³
	24-hour	150 µg/m ³	50 µg/m ³
Fine Particulate Matter (PM _{2.5})	annual	15 µg/m ³	12 µg/m ³
	24-hour	35 µg/m ³ ^d	—
Sulfates (SO ₄)	24-hour	—	25 µg/m ³
Lead	30-day average	—	1.5 µg/m ³
	rolling 3-month average	0.15 µg/m ³	—
Hydrogen Sulfide (H ₂ S)	1-hour	—	0.03 ppm (42 µg/m ³)

Pollutant	Averaging Time	Federal Standard	California Standard
Vinyl Chloride (chloroethene)	24-hour	—	0.01 ppm (26 µg/m ³)
Visibility-Reducing Particulates	8-hour	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: ARB 2018a

Notes:

a On October 1, 2015 the national 8-hour ozone primary and secondary standards were lowered from 75 parts per billion (“ppb”) to 70 ppb.

b To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average must not exceed 100 ppb.

c To attain this standard, the 3-year average of the 99th percentiles of the daily maximum 1-hour average must not exceed 75 ppb.

d To attain this standard, the 3-year average of the 98th percentile of the daily concentrations must not exceed 35 µg/m³. ppm= parts per million

Air Quality Table 2 summarizes the current attainment status of the SEC area in the Sacramento Valley Air Basin (SVAB) for various applicable state and federal AAQS. The Sutter County portion of the SVAB is designated as nonattainment for the state ozone standard and PM10 standard. The SVAB is designated as attainment or unclassified for state and federal CO, NO₂, PM2.5 and SO₂.

**Air Quality Table 2
Federal and State Attainment Status Project Area in Sacramento Valley Air Basin**

Pollutant	Attainment Status	
	Federal	State
Ozone	Unclassifiable/Attainment ^a	Nonattainment
CO	Unclassifiable/Attainment	Unclassifiable/Attainment
NO ₂	Unclassifiable/Attainment ^b	Attainment
SO ₂	Unclassifiable/Attainment ^a	Attainment
PM10	Unclassified	Nonattainment
PM2.5	Attainment ^c	Attainment

Source: ARB 2018a, U.S. EPA 2018a

Notes:

^a For the project site area only, not the entire SVAB.

^b On February 17, 2012 U.S. EPA designated all of California as “unclassifiable/attainment” for the short-term NO₂ standard.

^c The ARB PM2.5 area designation recommendation for federal PM2.5 released October 28, 2013 redesignated the project area of the Sacramento Valley Air Basin from a nonattainment status to attainment.

ANALYSIS OF POTENTIAL AIR QUALITY IMPACTS FROM MODIFICATION OF CONDITION OF CERTIFICATION AQ-32, PARTS 5 AND 6

The petitioner proposes to modify two parts of the Energy Commission Air Quality Condition of Certification **AQ-32**. If this is approved, the following limits on the two identical existing CTGs would be changed as follows:

- Revise **AQ-32 part (5)** which currently limits for each turbine the maximum hours of startups per year and calendar quarter. **Part 5** currently limits the duration of the quarterly and annual startup hours per turbine, rather than the request to apply this limit to both turbines combined.
- Revise **AQ-32 part (6)** which currently limits for each turbine the maximum hours of shutdowns per year and calendar quarter. **Part 6** currently limits the duration of the quarterly and annual shutdown hours per turbine, rather than the request to allow for both turbines combined.

The Feather River Air Quality Management District (District) is the local air pollution control district for the SEC site. The District issued their amended Title V permit on August 9, 2018. The Petitioner has requested to make the air quality conditions of certification consistent with the amended Title V permit. The proposed modifications would “provide the operational flexibility needed for SEC to support reliability and integration of intermittent renewable resources” (SEC 2018, page 1).

In an amendment to the SEC’s license approved in 2000 (CEC 2000), a limitation on the type of startup was removed and combined into the current version of air quality Condition of Certification **AQ-32**. This change was implemented because of concerns about the definition of a “cold start” versus a “warm start” as described below. As stated in the staff analysis for that amendment:

“There were certain assumptions made concerning hot and cold startups based on information available at the time. A key assumption was that for up to a 72-hour period after shutdown, a restart of a combustion gas turbine (CTG) could be considered a warm startup, and that the emissions would be lower than for a cold startup, defined as a restart occurring more than 72 hours after a CTG shutdown. In reviewing this assumption with the primary equipment vendors, it was determined that it was erroneous. In fact, it was determined that a CTG would cool down much more rapidly than estimated and be in a cold startup mode well before 72 hours had elapsed from the last shutdown event. Therefore, the assumption that hourly emissions would be lower within that entire 72-hour period of time was erroneous. In order to correct this problem, SEC could have requested that the definition of hot and cold startups be revised to reflect a lesser period of time from the previous CTG shutdown. The reason that SEC asked to replace the hot and cold start definitions with a single set of emission limits to cover all starts was for simplicity of operation and monitoring.”

The applicant proposed eliminating the distinction between hot and cold startups and instead having a single set of emission limits for all startups. The emission limits that are proposed use the higher hourly levels for cold startups. However, the total emission limits per startup use the lower limit for hot startups. The daily limits for emissions remain unchanged. By having one set of startup emission limits, compliance with and enforceability of this condition becomes easier because the operator does not have to distinguish cold starts from hot starts every time turbine operation is initiated. The quantity of required air emission offsets is based on the daily and annual emission limits for the project. The daily and annual emission limits will remain the same, and therefore, the offsets specified in the Commission Decision will remain adequate if the proposed modifications of Condition of Certification AQ-32 are approved.¹” (CEC 2000.)

Energy Commission **Air Quality** Condition of Certification **AQ-32 part (5)** currently limits the maximum duration for startups for each combustion turbine generator (CTG) to 400 hours per year and 102 hours per calendar quarter. The proposed modification would allow the two combined CTGs to have the maximum number of hours of startups total 800 hours per year and 204 hours per calendar quarter. Similarly, Energy Commission Air Quality Condition of Certification **AQ-32 part (6)**, currently limits the maximum duration for shutdowns for each combustion turbine generator (CTG) to 300 hours per year and 76 hours per calendar quarter. The proposed modification would allow the two combined CTGs to have the maximum number of hours of shutdowns total 600 hours per year and 152 hours per calendar quarter.

The facility would still be required to comply with all other daily, quarterly, and annual (calendar year) mass emission limits at all times. Compliance with the CO and NO_x limitations would be verified by a CEMS that would be in operation during all operating modes, including startup and shutdown. Compliance with the VOC, sulfur oxides (SO_x), and PM₁₀ mass emission limits would be verified through source testing.

To further describe the emissions profile during startup and shutdown, the existing permit limits for each turbine are as follows:

¹ http://www.energy.ca.gov/sitingcases/sutterpower/documents/2000-10-26_STAFF_ANALYSIS.PDF

**Air Quality Table 1
Maximum Allowable Hourly Emissions
from Each Gas Turbine/Duct Burner (lbs/hour)**

Pollutant	In All Modes of Operation, Except Startup and Shutdown (lbs/hour)	Startup (lbs/hour)	Startup (lbs/startup)	Shutdown (lbs/shutdown)
VOC	3.51 (a)	16 (b)	59	16
NO _x (as NO ₂)	19.1 (b)	175 (b)	680	80
SO _x (as SO ₂)	4.02 (a)	3.7 (b)	22.2	3.7
PM ₁₀	11.5 (a)	9 (b)	54	9
CO	34.3 (a)	902 (a)	2,514	100

Source: CCFC 2018, Feather River Air Quality Management District Title V Operating Permit, **AQ-32 (11)**

(a) Based on 3-hour rolling average, clock hour basis.

(b) Based on 1-hour average, clock hour basis

The Petitioner has requested to retain the existing permitted mass emission limits per startup and shutdown. There are several Air Quality Conditions of Certification that are currently limiting mass emissions per startup and shutdown. Air Quality Condition of Certification **AQ-32 part 11** through **part 14** would continue to limit permitted hourly, daily, quarterly, and annual mass emissions on the CTGs. Similarly, Air Quality Condition of Certification **AQ-32 part 1** through **part 3** would continue to limit maximum concentrations for the CTGs.

Since there would be no increase in SEC’s potential to emit (PTE), there are no potentially significant adverse effects on the environment that would result from the proposed modification. Staff recommends modifying Air Quality Condition of Certification **AQ-32, part 5** and **part 6** as described below.

ENVIRONMENTAL JUSTICE

Staff has not identified any significant adverse direct or cumulative air quality impacts resulting from the operation of the proposed SEC modification, including impacts to the identified extant environmental justice population. Therefore, there are no air quality environmental justice issues related to this change, and no minority or low-income populations would be significantly or adversely impacted.

CUMULATIVE IMPACTS

The proposed SEC amendment would not change any mitigation measures designed to reduce potential air quality impacts from the original siting proceeding for SEC that were previously concluded to be less-than-significant impacts. No cumulative adverse impacts would occur as a result of the proposed changes to the SEC.

CONCLUSIONS AND RECOMMENDATIONS

The District issued the facility's current Title V Operating Permit (Title V) on August 9, 2018. This modification did not require a public comment period, however a public notice was issued for the permit renewal and no comments have been received. In the Title V permit analysis, the District determined that the proposed modifications at the SEC would comply with all applicable District rules and regulations. No other permit limits, concentrations, mass emissions, or reporting requirements would change as a result of this modification.

With this modification the Petitioner has requested to maintain the existing facility-level permitted emission limits per startup and shutdown. The Petitioner has also requested to maintain the permitted hourly, daily, quarterly, and annual mass emission limits and concentration emission limits as they currently exist in the Air Quality Conditions of Certification. This modification would allow SEC to have more operating flexibility. Since there would be no increase in allowable emissions, staff agrees that the startup and shutdown limitations imposed by **parts 5 and 6** of Condition of Certification **AQ-32** can be modified without causing adverse environmental impacts.

The modification would maintain the permitted hourly, daily, quarterly, and annual mass emission limits and concentration emission limits as they currently exist in the air quality conditions of certification. Staff concludes that for greenhouse gas emissions (GHGs), the project would continue to comply with existing mandatory Air Resources Board (ARB) GHG emissions reporting regulations (Cal. Code of Regs., tit. 17, § 95100 et. seq.) and future GHG regulations formulated by the EPA or the ARB, such as any expanded cap-and-trade requirements for GHG emissions.

There would be no increase in SEC's PTE and no other changes to permitted emissions limits are proposed. Therefore, there is no potentially significant adverse effects on the environment that would result from the proposed condition of certification modifications. Staff recommends adoption of the modified air quality Condition of Certification **AQ-32**, **part 5** and **part 6**.

The proposed modifications are not expected to impact the project's ability to comply with all applicable LORS, as confirmed by the Title V permit and this analysis.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

The modified condition, shown in **underline and bold** below, are proposed to ensure that the SEC complies with all applicable local, state, and federal regulations. This modification to the Conditions of Certification **AQ-32** would be consistent with current Feather River Air Quality Management District Title V permit requirements (Attachment A, P.4 CCFC 2018). ~~Strikethrough~~ is used to indicate the deleted language (**parts 5 and 6**) in Condition of Certification **AQ-32**. All other portions of Condition of Certification **AQ-32** would remain unchanged.

Revisions to Air Quality Condition of Certification AQ-32

AQ-32 The following definitions and limitations shall apply.

1. CTG startups are defined as the time period commencing with the introduction of fuel flow to the gas turbine and ending at the start of the first hour period when the NOx concentrations do not exceed 2.5 ppmvd (parts per million volume dry) at 15% O₂, averaged over 1 hour, and the CO concentrations do not exceed 4.0 ppm at 15% O₂, averaged over 1 hour.
2. For each CTG, a startup shall not exceed 360 consecutive minutes.
3. Shutdowns are defined as the time period commencing with a 15-minute period during which the 15-minute average NOx concentrations exceed 2.5 ppmvd at 15% O₂, or the 15-minute average CO concentration exceeds 4.0 ppm at 15% O₂, and ending when the fuel flow to the gas turbine is discontinued.
4. For each CTG, a shutdown shall not exceed 60 consecutive minutes.
5. The maximum duration of startups ~~per~~ **for both** CTGs shall be ~~400~~ **800** hours per year and ~~102~~ **204** hours per calendar quarter.
6. The maximum duration of shutdowns ~~per~~ **for both** CTGs shall be ~~300~~ **600** hours per year, and ~~76~~ **152** hours per calendar quarter.
7. Compliance with the above yearly limits shall be calculated based on a rolling 12-month average.
8. All emissions during startups and shutdowns shall be included in all calculations of daily, quarterly, and annual mass emissions required by this permit.
9. For each duct burner the total hours of combusting fuel shall not exceed 5,460 per calendar year.
10. For each CTG the total hours of Power Augmentation Steam Injection shall not exceed 2,000 hours per calendar year.
11. The maximum hourly emissions from each gas turbine/duct burner are given in the table below and shall be averaged over a rolling three-hour period, except for the NOx emissions and all hourly startup emission rates, which shall be averaged over a one-hour period. Additionally,

excepting the total emissions per startup and total emissions per shutdown which are not averaged over any time frame.

Pollutant	Maximum Allowable Hourly Emissions from Each Gas Turbine/Duct Burner (lbs/hour)			
	In All Modes of Operation, Except Startup and Shutdown (lbs/hour)	Startup (lbs/hour)	Startup (lbs/startup)	Shutdown (lbs/shutdown)
NOx (as NO ₂)	19.1 (b)	175 (b)	680	80
CO	34.3 (a)	902 (a)	2514	100
VOC	3.51 (a)	16 (b)	59	16
SOx (as SO ₂)	4.02 (a)	3.7 (b)	22.2	3.7
PM10	11.5 (a)	9 (b)	54	9

(a) Based on 3-hour rolling average, clock hour basis.

(b) Based on 1-hour average, clock hour basis.

12. For maximum project daily emissions (lbs/day) are given in the table below:

Pollutant	Maximum Allowable Daily Emissions from the Facility ^a (lbs/day)
NOx	1,817
CO	6,528
VOC	158
SO ₂	179
PM10	541

^a Includes both combustion turbines and both duct burners.

13. The maximum quarterly emissions for the facility are given in the table below:

Pollutant	Maximum Allowable Quarterly Emissions from the Facility ^a			
	January- March (lbs/quarter)	April- June (lbs/quarter)	July- September (lbs/quarter)	October- December (lbs/quarter)
NOx	102,500	102,500	102,500	102,500
CO	241,600	241,600	241,600	241,600
VOC	11,850	11,850	11,850	11,850
SO ₂	15,750	15,750	15,750	15,750
PM10	46,200	46,200	46,200	46,200

^a Includes both combustion turbines and both duct burners.

14. The maximum annual calendar year emissions (tons/year) for the facility are given in the table below:

Pollutant	Maximum Allowable Calendar Year Emissions from the Facility ^a (tons/yr)
NO _x	205.0
CO	483.2
VOC	23.7
SO ₂	31.5
PM ₁₀	92.4

^a Includes both combustion turbines and both duct burners.

Verification: As part of the Quarterly Air Quality Report (as required by AQ-40), the facility owner shall provide all data required in this condition. In the Quarterly Air Quality Reports (as required by AQ-40), the facility owner shall indicate the date, time, and duration of any violation to the NO_x and VOC limits presented in this condition. The facility owner shall include in the Quarterly Air Quality Reports (as required by AQ-40) daily and annual emissions as required in this condition.

REFERENCES

ARB 2018a—California Air Resources Board. Air Designation Maps, ARB website, <http://www.arb.ca.gov/degis/adm/adm.htm>. Accessed August 2018.

ARB 2018b—California Air Resources Board. California Ambient Air Quality Data Statistics, ARB website, <http://www.arb.ca.gov/adam/welcome.html>. Accessed August, 2018.

CCFC 2018—CCFC Sutter Energy, LLC (TN223836). Petition for Modification (Revised) to the Sutter Energy Center (97-AFC-02). Docketed June 15, 2018.

CEC 2000—California Energy Commission. Sutter Power Project Amendment Draft Staff Analysis. Dated October 26, 2000.
http://www.energy.ca.gov/sitingcases/sutterpower/documents/2000-10-26_STAFF_ANALYSIS.PDF