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Petition for Post-certification License Amendment

Axial Fuel Staging Installation Project

for the

Cosumnes Power Plant

Sacramento, California
(01-AFC-19C)

Submitted to the:

California Energy Commission

Submitted by:

Sacramento Municipal Utility District Financing Authority

January 2025

With Technical Assistance by:

JACOBS

and

Trinity Consultants

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Executive Summary

The Sacramento Municipal Utility District Financing Authority (SFA) respectfully submits this petition to the California Energy Commission (CEC) for post-certification license modification for the Cosumnes Power Plant (CPP) (01-AFC-19C). The CPP consists of two General Electric (GE) combustion turbines (CT) with unfired heat recovery steam generators (HRSG), a condensing steam turbine (STG), an 8-cell cooling tower, and ancillary facilities. Each CT has a rated generating capacity of 198 megawatts (MW). The STG has a rated capacity of 207 MWs, for a facility total electrical generation rate of 603 MWs.

This petition for post-certification license amendment (Petition to Amend) proposes to add a new flexible operation upgrade to these turbines based on the DLN 2.6+ combustion hardware by enabling Axial Fuel Staging (AFS) technology. This DLN 2.6+ AFS Combustor Upgrade Project (the Project) will allow for additional turn down from 40% to 26% of turbine load while maintaining current oxides of nitrogen (NOx) and carbon monoxide (CO) emission concentrations. According to GE, this modification reduces the minimum fuel burn up to 25% and expands the Facility's lower load range by approximately 100 MW total for the plant. The AFS technology modified the existing DLN 2.6+ turbine combustors previously approved by the CEC. The proposed change is not expected to result in an increase in either criteria or toxic air emissions.

The Project will require the addition of CO analyzers upstream of the oxidation catalysts for each turbine. These new CO analyzers are required by GE for combustion tuning only and are not for CO emissions compliance determinations because they are not measuring stack CO levels going to atmosphere. These new CO analyzers will require analyzer rack replacements in both CPP CEMS buildings.

SFA has submitted a permit modification application to the Sacramento Metropolitan Air Quality Management District (SMAQMD) and expects the SMAQMD to issue a Determination of Compliance (DOC) that will result in the modification of the Air Quality Conditions of Certifications (COC). As such, SFA is not proposing changes to the Air Quality COCs, but will wait for the SMAQMD to issue the DOC with revised permit conditions.

The environmental impacts assessment presented in Section 3 concludes that there will be no significant environmental impacts associated with the implementation of the actions specified in this Petition to Amend, and that the project, as modified, will comply with all applicable laws, ordinances, regulations, and standards.

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1. Introduction

1.1 Background

The CEC approved the CPP project in September 2003 (CEC, 2003a). The project is located adjacent to the former Rancho Seco Nuclear Plant in southern Sacramento County. Submitted in September 2001, the Application for Certification (AFC) for the CPP analyzed the impacts associated with four GE Model 7241FA CTs exhausting into four unfired HRSG units (01-AFC-19) (SMUD, 2001). The initial operation of Phase 1 of the CPP (two gas turbines, two HRSGs, one condensing steam turbine, one cooling tower) began in October 2005 and this phase of the project has been in commercial operation since February 2006.

SFA submitted a Petition to Amend the CEC license in November 2007. The purpose of the Amendment was to make the CPP project description and air quality Conditions of Certification (COC) consistent with the modified cooling tower specifications and operating parameters. The CEC approved the Petition to Amend in June 2008 (CEC, 2008).

SFA submitted a Petition to Amend in February 2009 to address increased total suspended and dissolved solids in the water supply. The Petition to Amend was approved by the CEC in April 2009 (CEC, 2009).

SFA submitted a Petition to Amend in December 2010 to allow the use of digester gas in the natural gas supply line serving CPP, refine the total dissolved solids levels in the cooling tower recirculation water to match the water filtration system's performance, and to remove the peak flow condition from the Conditions of Certification. The Petition to Amend was approved by the CEC in November 2011.

SFA submitted a Petition to Amend to install and operate the Advanced Gas Path upgrade and DLN 2.6+ combustors. The Petition to Amend was approved in January 2019 (Order No. 18-1210-04)

SFA submitted two requested changes to the candle filter press and the zero liquid discharge evaporator and sump vessel, which were both staff approved changes in February and August 2019.

CEC Staff issued a Statement of Staff Approval to Modify Condition of Certification AQ-30 to correct a typographical error in Staff's 2018 analysis for Order 18-1210-04.

SFA requested an administrative change to rename the project Cosumnes Power Plant in July 2021.

SFA Submitted a Petition to Amend to operate the combustion turbines in simple-cycle mode while extended maintenance on the steam turbine was performed. Staff issued a staff approved change in July 2022.

1.2 Overview of Proposed Amendments

This Petition to Amend addresses the operational impacts associated with the installation of the AFS upgrade components and installation of a carbon monoxide continuous emissions monitoring system upstream of the oxidation catalyst.

The AFS system will modify the existing turbine combustors to allow for additional turn down from 40% to 26% of turbine load while maintaining current NOx and CO emission concentrations. According to GE, this modification reduces the minimum fuel burn up to 25% and expands the Facility's lower load range by approximately 100 MW total for the plant's 2 turbine by 1 HRSG configuration. No ground disturbance beyond the use of existing graveled laydown and construction parking is expected.

Detailed descriptions of the proposed modifications are included in Section 2.

This Petition to Amend contains all of the information that is required pursuant to the CEC's Siting Regulations (California Code of Regulations [CCR] Title 20, Section 1769, Post Certification Amendments

and Changes). The information necessary to fulfill the requirements of Section 1769 is contained in Sections 1 through 6 as summarized in Table 1.2-1.

TABLE 1.2-1
Informational Requirements for Post-certification Modifications

Section 1769 Requirement	Section of Petition Fulfilling Requirement
(A) A complete description of the proposed change, including new language for any conditions of certification that will be affected	Sections 2 and 3
(B) A discussion of the necessity for the proposed change and an explanation of why the change should be permitted	Section 1.3
(C) A description of any new information or change in circumstances that necessitated the change	Section 1.3
(D) An analysis of the effects that the proposed change to the project may have on the environment and proposed measures to mitigate any significant environmental effects	Sections 1.5 and 3.0
(E) An analysis of how the proposed change would affect the project's compliance with applicable laws, ordinances, regulations, and standards	Section 3
(F) A discussion of how the proposed change would affect the public	Section 4
(G) A list of current assessor's parcel numbers and owners' names and addresses for all parcels within 500 feet of any affected project linears and 1000 feet of the project site	Section 4
(H) A discussion of the potential effect of the proposed change on nearby property owners, residents, and the public	Section 4
(I) A discussion of any exemptions from the California Environmental Quality Act, commencing with section 21000 of the Public Resources Code, that the project owner believes may apply to approval of the proposed change.	Section 5

1.3 Necessity of Proposed Changes

The CEC Siting Regulations require a discussion of the necessity for the proposed revisions to CPP certification and whether the amendment is based on information known by the petitioner during the certification proceeding (Title 20, CCR, Sections 1769 (a)(1)(B), and (C)). This Petition to Amend proposes to upgrade existing equipment manufacturer combustor components, and this upgrade was not available at the time of licensing.

1.4 Consistency of Changes with Certification

The CEC Siting Regulations also require a discussion of the consistency of the proposed project revision with the applicable laws, ordinances, regulations, and standards (LORS) and whether the modifications are based on new information that changes or undermines the assumptions, rationale, findings, or other basis of the final decision (Title 20, CCR Section 1769 (a)(1)(D)). If the project is no longer consistent with the certification, the Petition to Amend must provide an explanation why the modification should be permitted.

The proposed project modifications are consistent with all applicable LORS, as discussed in Section 3, and this Petition to Amend is not based on new information that changes or undermines any basis for the

final decision. The proposed project change would allow the CPP facility to continue to run efficiently, and to meet environmental goals and the current increased demand for electricity. The CPP facility would continue to operate in compliance with all applicable LORS. Therefore, the findings and conclusions contained in the Commission Decision for CPP (CEC, 2003a) and subsequent amendments would remain applicable to the project, as modified.

1.5 Summary of Environmental Impacts

The CEC Siting Regulations require that an analysis be conducted to address the potential impacts the proposed modifications may have on the environment and proposed measures to mitigate any potentially significant adverse impacts (Title 20, CCR, Section 1769 (a)(1)(E)). The regulations also require a discussion of the impact of the modification on the facility's ability to comply with applicable LORS (Section 1769 (1)(a)(F)). The proposed change is not expected to result in an increase in either criteria or toxic air emissions.

Section 3 of this Petition to Amend includes a discussion of the potential environmental impacts associated with the modifications as well as a discussion of the consistency of the modification with LORS. Section 3 also includes updated environmental baseline information if changes have occurred since the AFC was prepared that would have a bearing on the environmental analysis of this Petition to Amend. Section 3 concludes that there will be no significant environmental impacts associated with implementing the actions specified in this Petition to Amend and that the project, as modified, will comply with all applicable LORS.

1.6 Conditions of Certification

This Petition to Amend proposes to change the Air Quality COCs based on the SMAQMD's issuance of a DOC with revised permit conditions. No other changes to any other COCs are proposed in this post-certification amendment.

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2. Description of Proposed Amendments

This section includes a description of the proposed project modifications, consistent with CEC Siting Regulations (Title 20, CCR, Section 1769 (a)(1)(A)).

SFA installed upgraded advanced gas path (AGP) and DLN 2.6+ components recently and proposes to install GE's Axial Fuel Staging Technology which modifies the existing AGP/DLN 2.6+ combustor components to enhance turbine performance and operating profile. In addition, SFA will install a carbon monoxide monitor sampling location upstream of the oxidation catalyst system to provide GE with data necessary to tune the combustors after completion of the AFS installation. The following sections describe the proposed changes.

2.1 Axial Fuel Staging Technology (AFS) and Carbon Monoxide Analyzer Installation

2.1.1 Axial Fuel Staging Technology

SFA is now proposing to add a new flexible operation upgrade to these turbines based on the DLN 2.6+ combustion hardware by enabling Axial Fuel Staging (AFS) technology. The installation of the DLN 2.6+ combustion hardware was approved by the Commission in January 2019 and subsequently installed. This DLN 2.6+ AFS Combustor Upgrade Project will allow for additional turn down from 40% to 26% of turbine load while maintaining current NOx and CO emission concentrations. According to GE, this modification reduces the minimum fuel burn up to 25% and expands the turbine lower load range by approximately 100 MW. The proposed change is not expected to result in an increase in either criteria or toxic air emissions.

The installation of the AFS upgrade will not require any ground disturbance and will use existing onsite equipment laydown/parking used during construction of CPP. Installation of the upgraded AFS components will require approximately 35 days to complete and will include approximately 40 workers. Construction equipment will include 2 cranes, welding units, and other handheld construction equipment as needed. Work will commence on both turbines at the same time.

2.1.2 Carbon Monoxide Analyzer

SFA will also be upgrading the continuous emissions monitoring systems to include a carbon monoxide analyzer in each HRSG to measure upstream of the oxidation catalysts using existing sampling lines. These analyzers are not relied on for regulatory compliance but are being installed to allow for combustor tuning. The upgrade includes installation of new equipment racks in the existing CEMS buildings and makes changes to the sample conditioning system and the data acquisition and handling system (DAHS).

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3. Environmental Analysis of Proposed Amendments

The proposed modifications to the CPP would be limited to the installation and operational impacts associated with the AFS upgrade components and the carbon monoxide monitors. No excavation is proposed. As a result, the environmental analysis for most of the environmental disciplines does not differ significantly from that described in the AFC and the impacts associated with this Petition to Amend would be less than significant. However, for completeness, a review of the impacts and LORS compliance is provided for applicable topic areas.

The following subsections present a discussion of the potential impacts that the proposed changes may have on the environmental analysis as presented in applicable sections of the AFC. Each discussion includes an environmental analysis, an assessment of compliance with applicable LORS, proposed mitigation measures, and, if applicable, proposed changes to the COCs that are necessary as a result of project modifications.

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3.1 Air Quality and Greenhouse Gases

3.1.1 Environmental Baseline Information

The baseline conditions for the project are presented in Attachment 3.1, the air quality permit to modify application submitted to the Sacramento Metropolitan Air Quality Management District (SMAQMD).

3.1.2 Environmental Consequences

Construction Consequences

As noted in Section 2.1.1 above, the installation of the AFS components and the carbon monoxide analyzers will require approximately 35 days to complete with a staff of up to 40 workers and relatively few pieces of construction equipment. This level of activity is consistent with other maintenance events occurring at the site and is therefore not expected to result in significant air quality impacts beyond those analyzed in the Commission Decision.

Operational Consequences

Table 2-1 of Attachment 3.1 shows that the proposed change is not expected to result in an increase in either criteria or toxic air emissions. Therefore, no operational air quality impacts beyond those analyzed in the Commission Decision and subsequent amendments are expected.

3.1.3 Mitigation Measures

With the implementation of Conditions of Certification AQ-SC1, AQ-SC2, AQ-SC3, AQ-SC4, and AQ-SC6, construction air quality impacts will be mitigated.

The proposed CPP modifications will not create a significant air quality or greenhouse gas (GHG) impact and will not require additional mitigation measures.

3.1.4 Consistency with LORS

The CPP will continue to comply with applicable federal, state, and local air quality LORS after the implementation of the proposed changes.

3.1.5 Conditions of Certification

SFA is not proposing changes to the Conditions of Certification (COC) as the SMAQMD will issue a Determination of Compliance with revised COCs. The CEC staff will incorporate these revised air quality COCs into the Staff Assessment.

3.1.6 Reference

Trinity Consultants CPP Authority to Construct Permit Application, January 2025, Rev. 1.

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3.2 Biological Resources

3.2.1 Environmental Baseline Information

This Petition to Amend does not require changes to the biological resources baseline information described in the AFC.

3.2.2 Environmental Consequences

The proposed CPP modifications will occur entirely within the fenced project site and will not result in ground disturbance, excavations, earth moving, or foundation installation. Therefore, no impacts to biological resources are expected.

3.2.3 Mitigation Measures

The proposed CPP modifications will not create a significant impact to biological resources that require additional mitigation measures.

3.2.4 Conditions of Certification

The proposed modifications do not require changes to the COCs for biological resources.

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3.3 Cultural and Tribal Resources

3.3.1 Environmental Baseline Information

This Petition to Amend does not require changes to the cultural and tribal resources information as described in the AFC.

3.3.2 Environmental Consequences

The proposed CPP modifications will not impact native soils and no excavations or earth moving are expected. Therefore, no impacts to cultural or tribal resources are expected.

3.3.3 Mitigation Measures

The proposed CPP modifications will not create a significant cultural resource impact and will not require additional mitigation measures.

3.3.4 Consistency with LORS

CPP intends to continue to implement the cultural resource COCs during installation and operation of the AFS components and carbon monoxide analyzers. Therefore, the project conforms to applicable laws related to cultural resources.

3.3.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for cultural or tribal resources.

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3.4 Geologic Hazards and Resources

3.4.1 Environmental Baseline Information

This Petition to Amend does not require changes to the geologic hazards and resources information as described in the AFC.

3.4.2 Environmental Consequences

The proposed CPP modifications will not result in ground disturbance, excavations, earth moving, or foundation installation. No additional geologic resources or geologic hazards have been identified in the project area. Therefore, no impacts to geologic hazards and resources are expected.

3.4.3 Mitigation Measures

The proposed CPP modifications will not create a significant impact to geologic resources, and new geologic hazards have not been identified that require additional mitigation measures.

3.4.4 Consistency with LORS

The project conforms to applicable laws related to geologic hazards and resources.

3.4.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for geologic hazards and resources.

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3.5 Hazardous Materials Handling

3.5.1 Environmental Baseline Information

This Petition to Amend does not require changes to the hazardous materials handling information provided in the AFC.

3.5.2 Environmental Consequences

The proposed CPP modifications will not result in the use of a new hazardous material onsite or increase the amount or delivery frequency of hazardous materials use. Therefore, no impacts from hazardous materials handling are expected.

3.5.3 Mitigation Measures

The proposed CPP modifications will not create a significant impact from hazardous materials handling that will require additional mitigation measures.

3.5.4 Consistency with LORS

The project conforms to applicable laws related to hazardous materials handling.

3.5.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for hazardous materials handling.

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3.6 Land Use

3.6.1 Environmental Baseline Information

This Petition to Amend does not require changes to the land use information described in the AFC.

3.6.2 Environmental Consequences

The project does not constitute a loss of lands as it occurs entirely within the existing CPP site. The project is consistent with existing land uses, the policy for consistent land use designation/zoning district, and policies related to the siting of public utilities for energy generation.

CPP has been in operation for approximately a decade and was determined to be an allowable use within the Public/Quasi-Public land use designation and the parcel's AG-80 zoning during licensing.

The proposed project is consistent with goals and policies of the Sacramento County General Plan, Public Facilities Element and is consistent with existing land uses in the vicinity, including the former Rancho Seco Plant, transmission lines, water supply pipeline, solar generating plant, and electrical switchyard located nearby. The project is located away from planned residential development. Adequate buffering from residential developments is achieved through existing land use designations surrounding the project vicinity.

3.6.3 Mitigation Measures

The proposed CPP modifications will not create a significant impact to land use that requires additional mitigation measures.

3.6.4 Consistency with LORS

The project conforms to applicable laws related to land use.

3.6.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for land use.

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3.7 Noise and Vibration

3.7.1 Environmental Baseline Information

This Petition to Amend does not require changes to the noise and vibration information provided in the AFC.

3.7.2 Environmental Consequences

The proposed CPP modifications will not increase noise-producing activities at the site once installation has been completed.

3.7.3 Mitigation Measures

The proposed CPP modifications will not increase noise and vibration to a point that requires additional mitigation measures.

3.7.4 Consistency with LORS

The project conforms to applicable laws related to noise and vibration.

3.7.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for noise and vibration.

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3.8 Paleontological Resources

3.8.1 Environmental Baseline Information

This Petition to Amend does not require changes to the paleontological resources information described in the AFC.

3.8.2 Environmental Consequences

No excavations or earth moving are expected due to the proposed project. Therefore, no impacts to paleontological resources are expected.

3.8.3 Mitigation Measures

The proposed CPP modifications will not create a significant paleontological resource impact and will not require additional mitigation measures.

3.8.4 Consistency with LORS

The proposed changes at CPP are consistent with applicable paleontological LORS. Therefore, the project conforms to applicable laws related to paleontological resources.

3.8.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for paleontological resources.

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3.9 Public Health

3.9.1 Environmental Baseline Information

This Petition to Amend does not require changes to the Public Health information provided in the AFC. The proposed project will not result in an increase in public health impacts beyond those analyzed in the Commission Decision or subsequently approved petitions to amend.

3.9.2 Environmental Consequences

Construction Consequences

As noted in Section 2.1.1 above, the installation of the AFS components and the carbon monoxide analyzers will require approximately 35 days to complete with a staff of up to 40 workers and relatively few pieces of construction equipment. This level of activity is consistent with other maintenance events occurring at the site and is therefore not expected to result in significant public health impacts beyond those analyzed in the Commission Decision.

Operational Consequences

Attachment 3.1 shows that the proposed change is not expected to result in an increase in either criteria or toxic air emissions. Therefore, no operational public health impacts beyond those analyzed in the Commission Decision and subsequent amendments are expected.

3.9.3 Mitigation Measures

The CPP impacts on public health will remain less than significant, and, therefore, will not require additional mitigation measures.

3.9.4 Consistency with LORS

The project conforms to applicable laws related to public health.

3.9.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for public health.

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3.10 Socioeconomics

3.10.1 Environmental Baseline Information

This Petition to Amend does not require changes to the socioeconomic information described in the AFC.

3.10.2 Environmental Consequences

CPP was licensed as a 1,000 MW project consisting of two power blocks of 500 MWs each. To date, SFA has only constructed one of the power blocks. Therefore, the proposed change to CPP is well within the electrical generation envisioned for the site. Therefore, no significant, negative socioeconomic impacts are expected.

3.10.3 Mitigation Measures

The proposed CPP modifications will not create a significant, negative impact to socioeconomics that requires additional mitigation measures.

3.10.4 Consistency with LORS

The project conforms to applicable laws related to socioeconomics.

3.10.5 Conditions of Certification

The Commission Decision did not include COCs for socioeconomics.

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3.11 Soils and Agriculture

3.11.1 Environmental Baseline Information

This Petition to Amend does not require changes to the soils and agricultural information described in the AFC.

3.11.2 Environmental Consequences

The proposed CPP modifications will not entail any ground disturbance or excavations and occur entirely within the developed project site. Therefore, no impacts to soils or agriculture are expected.

3.11.3 Mitigation Measures

The proposed CPP modifications will not create a significant impact to soils or agriculture that requires additional mitigation measures.

3.11.4 Consistency with LORS

The project conforms to applicable laws related to soils and agriculture.

3.11.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for soils and agriculture.

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3.12 Traffic and Transportation

3.12.1 Environmental Baseline Information

This Petition to Amend does not require changes to the traffic and transportation environmental baseline information as described in the AFC.

3.12.2 Environmental Consequences

The installation of the AFS components and carbon monoxide analyzers will require approximately 35 days to complete with a staff of up to 40 workers and relatively few pieces of construction equipment. Therefore, the proposed CPP modifications will not result in a substantial increase in worker or material delivery trips to the site, but there will be temporary impacts due to worker commutes and equipment component delivery during installation. Only temporary, minor impacts to traffic or transportation are expected.

3.12.3 Mitigation Measures

The proposed CPP modifications will not create a significant impact to traffic or transportation that requires additional mitigation measures.

3.12.4 Consistency with LORS

The project conforms to applicable laws related to traffic and transportation.

3.12.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for traffic and transportation.

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3.13 Visual Resources

3.13.1 Environmental Baseline Information

This Petition to Amend does not require changes to the visual resources information described in the AFC.

3.13.2 Environmental Consequences

The proposed CPP modifications will not result in the physical alteration of the CPP appearance. The replaced combustion turbine components are internal to these pieces of equipment and cannot be seen. The additional carbon monoxide monitoring system is not expected to be discernable from the project fence line. Therefore, no impacts to visual resources are expected.

3.13.3 Mitigation Measures

The proposed CPP modifications will not create a significant impact to visual resources that requires additional mitigation measures.

3.13.4 Consistency with LORS

The project conforms to applicable laws related to visual resources.

3.13.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for visual resources.

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3.14 Waste Management

3.14.1 Environmental Baseline Information

This Petition to Amend does not require changes to the waste management information as described in the AFC.

3.14.2 Environmental Consequences

The proposed CPP modifications will not result in an increase waste generation at the site. Therefore, no impacts to waste management are expected.

3.14.3 Mitigation Measures

The proposed CPP modifications will not create a significant waste management impact and will not require additional mitigation measures.

3.14.4 Consistency with LORS

The project conforms to applicable laws related to waste management.

3.14.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for waste management.

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3.15 Water Resources

3.15.1 Environmental Baseline Information

This Petition to Amend does not require changes to the water resources information as described in the Commission Decision and Amendments.

3.15.2 Environmental Consequences

The proposed CPP modifications will not result in an increase in water use or alter storm water drainage onsite. Therefore, this Petition to Amend will not result in water resources impacts different than those analyzed by the CEC during the licensing of the project.

3.15.3 Mitigation Measures

The CPP impacts on water resources with the proposed modifications are less than significant, and therefore, will not require additional mitigation measures.

3.15.4 Consistency with LORS

The project conforms to applicable laws related to water resources.

3.15.5 Conditions of Certification

The proposed modifications do not require changes to the COCs for water resources.

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4. Potential Effects on Property Owners, the Public, and Parties in the Proceeding

This section addresses potential effects of the project changes proposed in this Petition to Amend on nearby property owners, the public, and parties in the application proceeding, in accordance with CEC Siting Regulations (Title 20, CCR, Section 1769 (a)(1)(F) and (a)(1)(I)).

The project as modified will not differ significantly in potential effects on adjacent land owners, compared with the project as previously certified. Operation of the CPP utilizing the AFS capabilities will have no adverse effect on nearby property owners, the public, or other parties. Operation of the carbon monoxide monitoring system will not impact adjacent property owners, the public, and parties in the proceeding. The project, therefore, would have no adverse effects on nearby property owners, the public, or other parties in the application proceeding.

A list of the property owners in accordance with the CEC Siting Regulations (Title 20, CCR, Section 1769(a)(1)(G)) whose property is located within 1,000 feet of CPP is provided under separate cover.

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5. California Environmental Quality Act Exemptions

This section describes any potential exemptions from the California Environmental Quality Act, in accordance with CEC Siting Regulations (Title 20, CCR, Section 1769 (a)(1)(I).

The proposed project does not qualify for any exemptions from the California Environmental Quality Act that may apply to approval of the proposed change.

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Attachment 3.1
CPP Air Permit Application

AFS TURBINE UPGRADE PROJECT

Application for Authority to Construct and Permit to Operate / SMAQMD

SACRAMENTO MUNICIPAL UTILITY DISTRICT FINANCING AUTHORITY
P.O. Box 15830, Sacramento, CA 95852-1830

SMUD Financing Authority / Cosumnes Power Plant

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1. EXECUTIVE SUMMARY

The Sacramento Municipal Utility District Financing Authority (SFA) operates an electric generating station, referred to as the Cosumnes Power Plant (CPP), located at 14295 Clay East Road in Herald, California (the Facility). SFA operates the Facility under the Title V Permit (the Permit) issued by the Sacramento Metropolitan Air Quality Management District (SMAQMD) on December 24, 2013. CPP's Application for Certification was approved by the California Energy Commission on September 9, 2003.

SFA operates two GE Model 7FA combined cycle combustion turbines (CT No. 2 and CT No. 3), each equipped with the GE "Power FlexEfficiency Package" consisting of Advanced Gas Path (AGP) and Dry-Low-NOx2.6+ (DLN2.6+) combustion upgrades. Each unit has a selective catalytic reduction (SCR) system with ammonia injection for NOx control and an oxidation catalyst for CO and VOC control. Each gas turbine combusts natural gas and digester gas with no emergency backup fuel and exhausts to a single unfired heat recovery steam generator (HRSG). The total electrical power produced by the facility is approximately 591 MW and is delivered into the Sacramento Municipal Utility District's (SMUD's) electric grid.

SFA is now proposing to add a new flexible operation upgrade to these turbines based on the DLN 2.6+ combustion hardware by enabling Axial Fuel Staging (AFS) technology. This DLN 2.6+ AFS Combustor Upgrade Project (the Project) will allow for additional turn down from 40% to 26% of turbine load while maintaining current NOx and CO emission concentrations. According to GE, this modification reduces the minimum fuel burn up to 25% and expands the Facility's lower load range by approximately 100 MW total for the plant's 2 turbine X 1 HRSG configuration.

The Project will require the addition of CO analyzers upstream of the oxidation catalysts for each turbine. These new CO analyzers are required by GE for combustion tuning only and are not for CO emissions compliance determinations because they are not measuring stack CO levels going to atmosphere. These new CO analyzers will require analyzer rack replacements in both CPP CEMS buildings.

As required by SMAQMD Rule 201, SFA is submitting this Authority to Construct (ATC) Application (the Application) to SMAQMD in order to obtain SMAQMD approval to construct the proposed Project. All information required under SMAQMD Form G101 and associated "Lists and Criteria Identifying Information Required of Applicants Seeking a Permit to Construct from the Sacramento Metropolitan Air Quality Management District" is included in this Application. Appendix A of this Application includes all required SMAQMD forms.

SFA will pay all required application fees upon invoicing by SMAQMD.

This Application is organized as follows:

Section 1: Executive Summary
Section 2: Emission Calculations
Section 3: Regulatory Analysis

2. EMISSION CALCULATIONS

2.1 Operating Conditions

It is anticipated that the operating schedules for CT No. 2 and CT No. 3 will not be affected following completion of the Project, including the number of actual turbine startup (SU) and shutdown (SD) events. Any change in operating schedule will be the result of market demand and not a result of the Project. SFA is not anticipating any change in the emission levels as a result of the Project, and CT No. 2 and CT No. 3 will continue to comply with current permitted emissions and operational limits. Annual emission limits for NOx and CO will be reduced to avoid triggering Rule 202 major modification requirements as described in Section 3.1.1.2 of this application. Proposed changes to CPP annual emission limits are summarized in Table 2-1.

Table 2-1. Proposed Changes to CPP Annual Emission Limits

Pollutant	CPP Current Emission Limits (tpy)	CPP Proposed Emission Limits (tpy)	Change in Emission Limits (tpy)	% Change in Annual Emission Limits
VOC	30.0	30.0	0.0	0.0%
NOx	96.0	95.5	-0.5	-0.5%
CO	123.1	99.9	-23.2	-18.8%
PM_{10}	80.6	80.6	0.0	0.0%
SOx	16.7	16.7	0.0	0.0%

SFA proposes to use the existing continuous emission monitoring system (CEMS), data acquisition and handling system (DAHS), and balance of plant controls to monitor and document that the modified turbines are in compliance with their permitted emission and operating limits.

2.2 Emission Estimates

2.2.1 Regulated Pollutants

As discussed above, the Project will result in no change in the potential to emit (PTE) of CT No. 2 and CT No. 3 for VOC, SOx, PM_{10}, and $PM_{2.5}$. SFA is proposing to reduce the annual emission limits for NOx and CO in order to avoid major modification requirements under SMAQMD Rule 202 (see discussion in Section 3.1.1.2).

Historic actual emissions are estimated based on the actual emissions from each combustion turbine that occurred during a representative 24-month period within the five-year period immediately preceding the date of application. The emissions reported in the SFA's Annual Emission Reports (AERs) to the SMAQMD were based on CEMS data (for NO_x and CO) or fuel use and emission factors (for VOC, PM_{10} and SOx). Therefore, historic actual emissions for CT No. 2 and CT No. 3 are estimated using the reported values in the AERs as described in Section 3 of this application.

The hourly, daily, quarterly, and annual emissions from the CTs are presented in SMAQMD Permits to Operate Nos. 25800 and 25801 and in Section 3 of this application. Additionally, there will be no change in the toxic air contaminant (TAC) PTE from CT No. 2 and CT No. 3.

2.2.2 Prevention of Significant Deterioration (PSD) Emission Calculations

CPP is located in an attainment area for NO_2, CO, PM_{10}, and SO_2. The proposed Project does not trigger PSD applicability because CPP is no longer a PSD major stationary source after reducing its annual CO emission limit to 99.9 tons per year. Refer to Section 3.1.1.3 for additional details on the applicability of the PSD permitting program. Detailed emissions calculations are included in Appendix B.

3. REGULATORY ANALYSIS

The Facility is subject to federal and SMAQMD air regulations. This section summarizes the air permitting requirements and the key air quality regulations that apply to the emission units impacted by the Project.

3.1 SMAQMD Requirements

3.1.1 Regulation 2 – Permits

3.1.1.1 Rule 201 – General Permit Requirements

Rule 201 states that any facility building, erecting, installing, altering, or replacing non-exempt equipment that causes or controls the emission of air pollutants must first obtain an authority to construct from the SMAQMD. Because CT No. 2 and CT No. 3 will be altered as a result of this Project, SFA is submitting this application for an authority to construct.

3.1.1.2 Rule 202 – New Source Review

The SMAQMD adopted Rule 202 to provide for preconstruction review of new or modified facilities, to ensure that affected sources do not interfere with the attainment of ambient air quality standards. In general, Rule 202 contains three separate elements as part of a New Source Review (NSR) analysis:

- Best Available Control Technology (BACT);
- Emission Offsets; and
- Air Quality Impact Analysis.

In order to determine which of these NSR elements is applicable to the project, we must first determine if CPP is a "major stationary source" and then whether the Project is a "major modification."

CPP is a "major stationary source" per Rule 202, section 228 for NOx, VOC, $PM_{2.5}$ and CO per the information presented in Table 3-1.

Table 3-1. SMAQMD Major Stationary Source Applicability Determination

Pollutant	Major Source Threshold (tpy)	Current CPP Facility Annual Permit Limit (tpy)	Major Source?
VOC	25	30.0	**YES**
NOx	25 (or 100 tpy as $PM_{2.5}$ precursor)	96.0	**YES**
SO_2	100	16.7	**NO**
PM_{10}	100	80.6	**NO**
$PM_{2.5}$	100	79.3	**NO**
CO	100	123.1	**YES**

For the pollutants SO_2, PM_{10}, and $PM_{2.5}$, which do not result in a "major stationary source" determination, emission increases are calculated pursuant to Rule 202, Sections 411 and 225 based on a comparison of "historic potential emissions" to future potential emissions. Since SFA is not proposing to change its permitted emission limits for these pollutants, there will be no increase in emissions of these pollutants under Rule 202.

For the pollutants resulting in a major stationary source determination, it must be determined whether the project is a "major modification" for these pollutants even with no proposed increase in permitted emissions.

Emission increases are determined by the calculation method in Rule 202, Section 411.5:

> *The sum of the Potential to Emit for the project minus the Historic Actual Emissions, as defined in Section 224.1, for the project. However, the potential to emit, instead of historic actual emissions, can be used for emissions units if either of the following conditions applies:*
>
> *a. Actual emissions are at least 80% of the potential to emit limit, or*
> *b. The emissions unit was fully offset for any emissions increase during the 5 year period prior to the date that the application is deemed complete.*

CPP has not had a permitted project at the site that required offsets in the last five years. Therefore, the next step is to check whether "actual emissions are at least 80% of the potential to emit limit." SMAQMD regulations do not specify how this "actual emissions" value is calculated. "Actual emissions" are defined as follows in Rule 202 and do not include a time period reference:

> *201* ***ACTUAL EMISSIONS:*** *Measured or estimated emissions which most accurately represent the emissions from an emissions unit.*

Nonetheless, despite this broad definition, SMAQMD staff have interpreted this definition to mean that "actual emissions" are determined the same way as "historic actual emissions." "Historic Actual Emissions" are defined in Section 224 as follows for existing emissions units:

> *224.1* ***Existing emissions units****: Historic actual emissions for the existing emissions unit averaged over the two year period immediately preceding the date of application for an Authority to Construct.*
>
> *a. If the last two years are unrepresentative of normal source operations as determined by the Air Pollution Control Officer, then any two consecutive years of the last five years that represent normal source operation may be used.*

Therefore, the Project must first compare the two-year (24-consecutive month) average actual emission rates for the "major" pollutants to the CPP annual emission limits. If the total annual (12-month average) emission rate is less than 80% of the CPP annual permit limit, the Project must then use these baseline "historic actual emissions" to determine whether a "major modification" has occurred.

A "major modification" is defined in Rule 202, Section 227 as any physical change, change in method of operation, or addition to any stationary source classified as a "major source" that results in emission increases above the levels specified in Section 227. The emission increase calculation is

based on the same Section 411.5 procedure described above for determining the 80% of potential to emit value.

Appendix B includes the two-year baseline emissions calculation. As noted in Appendix B, the previous two-year period ending December 31, 2024 results in an average 12-month baseline of 128,266 lb/yr NOx for the 2 turbines combined. The average 12-month baseline for the previous 60-month (five-year) period ending December 31, 2024 is 101,535 lb/yr NOx.

However, both the 5-year average and the previous 24-month baselines incorporate a one-year time period from March 2022 through February 2023 when the CPP steam turbine generator was down for repairs and the CPP turbines were authorized by an SMAQMD Hearing Board variance order to run in simple cycle mode. The terms of the variance order required that CPP *minimize operations* during the simple cycle operating period. This unusual operating event has affected the 2-year baseline for all periods after February 2023 and rendered this recent data unrepresentative.

Therefore, the two-year period preceding application submittal is "unrepresentative of normal source operations" pursuant to Rule 202, Section 224.1, and, consequently, the Project may use "any two consecutive years of the last 5-years that represent normal source operation." SFA is proposing that the representative baseline period include the two-year period immediately prior to the steam turbine generator outage (March 2020 through February 2022). During this two-year period immediately prior to the steam turbine generator outage, the 12-month average NOx, VOC, and CO emissions over the prior 24 months were as follows:

- VOC emissions were 41,035 lb/yr (20.5 tons/yr);
- NOx emissions were 141,257 lb/yr (70.6 tons/yr); and
- CO emissions were 5,838 lb/yr (2.9 tons/yr).

Table 3-2 compares these historic actual emission values to the potential to emit for the facility for comparison to the 80% threshold.

Table 3-2. SMAQMD Rule 202 80% of Potential to Emit Comparison

Pollutant	CPP Actual Emissions Baseline (tpy)[1]	CPP Turbines PTE Permit Limit (tpy)	Percent of Potential to Emit	Actual at Least 80% of PTE?
VOC	20.5	30.0	**68%**	**NO**
NOx	70.6	96.0	**74%**	**NO**
CO	2.9	123.1	**2%**	**NO**

Note: [1] Baseline period March 2020 through February 2022

As indicated in Table 3-2, no pollutant emissions are greater than 80% of the CPP facility potential to emit during the baseline period; therefore, the next step is to compare the "emission increase" calculated by subtracting the historic actual emissions from the potential (permitted) emissions and comparing this difference to the "major modification" emission increase thresholds in Rule 202, Section 227. Table 3-3 below shows this comparison.

Table 3-3. SMAQMD Major Modification Applicability Determination

Pollutant	CPP Actual Emissions (tpy)[1]	Current CPP Potential to Emit (tpy)	Actual to Potential Increase (tpy)	Major Modification Threshold (tpy)	Major Modification?
VOC	20.5	30.0	9.5	25	**NO**
NOx	70.6	96.0	25.4	25	**YES**
CO	2.9	123.1	120.2	100	**YES**

Note: [1] Baseline period March 2020 through February 2022

As indicated in Table 3-3, the Project would be a major modification for NOx and CO. Therefore, the Project would result in a "major modification" and would trigger BACT, offsets, air quality impact analysis, and public notification requirements.

However, SFA is proposing to decrease the annual emissions limit for NOx and CO in order to avoid triggering a major modification. Annual NOx emissions will be limited to 95.5 tons/year (0.5 tpy decrease) and CO emissions will be limited to 99.9 tons per year (23.2 tpy decrease; see Table 2-1 above). Table 3-4 shows the revised major modification applicability determination.

Table 3-4. Revised Major Modification Applicability Determination

Pollutant	CPP Actual Emissions (tpy)[1]	Proposed CPP Potential to Emit (tpy)	Actual to Potential Increase (tpy)	Major Modification Threshold (tpy)	Major Modification?
VOC	20.5	30.0	9.5	25	**NO**
NOx	70.6	95.5	24.9	25	**NO**
CO	2.9	99.9	97	100	**NO**

Note: [1] Baseline period March 2020 through February 2022

After the changes to the annual emission limits for NOx and CO, the Project does not result in a major modification under SMAQMD Rule 202. Hourly, daily, and quarterly CPP emission limits for all pollutants will not change from the current permitted values in PTO Nos. 25800 and 25801.

3.1.1.3 Rule 203 – Prevention of Significant Deterioration

Rule 203 incorporates the Federal Prevention of Significant Deterioration (PSD) program by reference (40 CFR 52.21). The PSD program requires pre-construction review and permitting of new or modified major stationary sources of air pollution to prevent significant deterioration of ambient air quality. PSD applies to pollutants for which ambient concentrations do not exceed the corresponding National Ambient Air Quality Standards (i.e., attainment pollutants). For the proposed AFS Turbine Upgrade Project, the emitted pollutants are NOx, SOx, CO, VOC, and $PM_{10}/PM_{2.5}$. While the SMAQMD is classified as an attainment area for NOx, SOx, CO, and PM_{10}, the SMAQMD is a nonattainment area with respect to the $PM_{2.5}$ and ozone (VOC) National Ambient Air Quality Standards. Consequently, the PSD regulations do not apply to VOC and $PM_{2.5}$ emissions from the project.

The federal PSD requirements apply on a pollutant-specific basis to any project that is a new major stationary source or a major modification to an existing major stationary source (these terms are

defined in the PSD regulations at 40 CFR 52.21). CPP is no longer an existing PSD major source because its emissions are no longer permitted to exceed 100 tons per year for CO per the discussion regarding the Rule 202 "major modification" requirements above. Therefore, no PSD significant increase determination is required because the facility is no longer a PSD major stationary source.

3.1.1.4 Rule 207 – Title V Federal Operating Permit Program

CPP is an existing Title V facility with combustion turbine PTO Nos. 25800 and 25801. The proposed AFS Turbine Upgrade Project will require a significant modification to CPP's Title V permit, because NOx and CO emission limits and associated permit conditions will be revised as a result of the Project.

SFA requests that the SMAQMD process this application and Title V permit modification as a significant Title V amendment. SFA will submit the SMAQMD application forms necessary for this modification to the CPP Title V permit at a later date.

3.1.1.5 Rule 217 – Public Notification Requirements for Permits

Rule 217, Section 102 notes that notification requirements shall not apply if the application is for any new or modified emissions unit where the combined potential to emit from the project would have an increase in potential to emit less than the amounts listed below (and provided that offsets are not triggered).

Volatile organic compounds	5,000 pounds per quarter
Nitrogen oxides	5,000 pounds per quarter
Sulfur oxides	9,200 pounds per quarter
PM_{10}	7,300 pounds per quarter
$PM_{2.5}$	10 tons per year
Carbon monoxide	49,500 pounds per quarter

There will be no increase in potential to emit from the CPP AFS Turbine Upgrade Project and offsets are not triggered by the Project. Therefore, the AFS Turbine Upgrade Project does not trigger the Rule 217 public notice requirements. However, publication and public notification are required under Rule 207, the Title V Federal Operating Permit Program.

In addition to the notification requirements of Rule 217, California Health and Safety Code Section 42301.6 requires that an additional public notice be distributed whenever an Authority to Construct is issued that would allow increased toxic air contaminant emissions within 1,000 feet of the outer boundary of a school site. However, the Project is not within 1,000 feet of the outer boundary of a school site and does not result in an increase in toxic air contaminant emissions; therefore, notification is not required under Section 42301.6.

3.1.2 Regulation 3 – Fees

3.1.2.1 Rule 301 – Stationary Source Permit Fees

The AFS Turbine Upgrade Project permit application is subject to the permit fees established by Rule 301. The initial permit fee is determined in accordance with SMAQMD Rule 301 based on Sections 301 and 306.2 as follows:

301 ***AUTHORITY TO CONSTRUCT FEE:*** *Every applicant for an authority to construct shall pay one half of the estimated initial permit fee in Section 308 of this rule upon filing the application.*

. . .

306.2 When an application is filed for a revision of conditions on a permit to operate or any alteration or addition, but no increase or change is made in rating, capacity or number of nozzles, and no increases in emissions or health risk, the applicant shall pay a permit fee of $1,206.28 or the initial permit fee in Section 308, whichever is lower.

Separately, Title V permit fees are listed in Rule 301, Section 313 as follows:

313 TITLE V OPERATING PERMIT FEES:

313.1 Permit Evaluation and Processing Fees

a. When a Title V application is submitted to the Air Pollution Control Officer pursuant to Rule 207, TITLE V – FEDERAL OPERATING PERMIT PROGRAM, the applicant shall pay a filing fee of $1,843.80 per Title V application. In addition, the applicant shall pay the respective fee shown below for the following type of Title V application:

Type of Title V Application	***Fee***
. . .	
Significant Title V permit modification	*$4,892.86 per permit to operate modified or added*
. . .	
Administrative Title V permit amendment	
*Enhanced New Source Review (NSR)**	*$1,310.45 per permit to operate modified or added*
. . .	

SFA understands that per Section 313.1.b. SMAQMD may charge additional fees based on actual review hours spent by District staff and for modification of the Title V Permit to Operate. Table 3-5 Summarizes the SMAQMD fees for the Project.

Table 3-5. SMAQMD Fees for the Proposed CPP AFS Project

Fee Description	SMAQMD Rule 301 Reference	Number of Permit Units	Fee per Permit Unit	Fee
ATC Fee when there is no increase in rating, emissions, or health risk	Section 306.2	2	$1,206.28	$2,412.56
Base Filing Fee per Title V Permit	Section 313.1.a.	1	$1,843.80	$1,843.80
Significant Title V Permit Modification Fee per Title V Permit	Section 313.1.a.3	1	$4,892.86	$4,892.86
Enhanced NSR Fee per Title V Permit	Section 313.1.a.5.1	1	$1,310.45	$1,310.45
			Total Fee[1] =	$10,459.67

Note: [1] Total Fee does not include online surcharge of 3% (here $313.79) for online payment using a credit card.

3.1.3 Regulation 4 – Prohibitions

3.1.3.1 Rule 401 – Ringelmann Chart/Opacity

Rule 401 prohibits the emission of air contaminants that are darker than Ringelmann No. 1 or 20% opacity for more than 3-minutes in a 1-hour period. Water vapor is not included in an opacity determination. The gas-fired turbines will not create visible emissions in excess of the limits of this rule.

3.1.3.2 Rule 402 – Nuisance

This rule prohibits the discharge of air contaminants in quantities that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. The SMAQMD regulates new and modified sources of TACs under this rule by implementing its HRA Modeling Guidelines dated February 2016. These guidelines implement what is commonly known as "Toxics New Source Review."

Under the SMAQMD's toxics policy, modified projects with TAC emission increases are required to perform a screening-level health risk assessment. CPP was evaluated for health risk when it was originally permitted and the AFS Turbine Upgrade Project will not result in an increase in TAC emissions above the levels evaluated in that original permit application. Therefore, no further toxics review is required.

3.1.3.3 Rule 404 – Particulate Matter

Rule 404 prohibits emissions of particulate matter (PM) in excess of 0.1 gr/dscf. The exhaust PM concentration from the gas turbines has been measured on multiple occasions during annual source tests and demonstrated compliance with this requirement. The AFS Turbine Upgrade Project is not expected to change turbine PM emission rates. Therefore, the Project will comply with the Rule 404 PM emission limit.

3.1.3.4 Rule 406 – Specific Contaminants

Rule 406 prohibits emissions of combustion contaminants in excess of 0.1 gr/dscf @ 12% CO_2. As noted above, the exhaust PM concentration from the turbines has been measured on multiple occasions during annual source tests and has demonstrated compliance with this requirement.

Rule 406 also prohibits emissions of sulfur compounds in excess of 0.2% by volume, or 2,000 ppmv. The exhaust SOx concentration from the turbines is significantly less than 2,000 ppmv and has been measured during annual source tests and demonstrated compliance with this requirement. The AFS Turbine Upgrade Project will not change turbine SOx emission rates. Therefore, the Project will comply with the Rule 406 PM and sulfur compound emission limits.

3.1.3.5 Rule 413 – Stationary Gas Turbines

Rule 413 prohibits NOx emissions in excess of 9 ppmv @ 15% O_2 based on a 15-min average, with exceptions for excursions, from gaseous fuel-fired turbines with a maximum electrical output rating of 10 MW or greater operating 877 hours or more per year. Rule 413 is applicable to the CPP turbines, which have a maximum electrical output rating of 195 MW and operate up to 8760 hours/year. At a permitted NOx concentration of 2 ppmv @ 15% O_2 averaged over one hour, the CPP turbines comply with the Rule 413 NOx limit.

3.1.4 Regulation 8 – Standards of Performance for New Stationary Sources (NSPS)

Rule 801 incorporates, by reference, the federal Standards of Performance for New Stationary Sources (NSPS). NSPS applies to certain types of equipment that are newly constructed, modified, or reconstructed after specified applicability dates. Only the NSPS subparts that may be potentially applicable to CT No. 2 and CT No. 3 are addressed in this section.

3.1.4.1 40 CFR 60 Subpart A – General Provisions

All affected sources are subject to the general provisions of NSPS Subpart A unless specifically excluded by the source-specific NSPS. Subpart A requires initial notification and performance testing, recordkeeping, monitoring; provides reference methods; and mandates general control device requirements for all other subparts as applicable. SFA will continue to meet all applicable requirements of the general provisions outlined in 40 CFR 60 Subpart A.

3.1.4.2 40 CFR Part 60 Subpart KKKK – NSPS for Stationary Gas Turbines

NSPS KKKK, *Standards of Performance for Stationary Gas Turbines*, applies to stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the lower heating value of the fuel fired. Based on the construction/modification date (after February 2005) and the heat input at peak loads, the combustion turbines at CPP are subject to NSPS Subpart KKKK. The project is not a "modification" under NSPS because it does not result in an increase in hourly emissions of a regulated NSPS pollutant per 40 CFR 60.14. SFA will continue to comply with all applicable NSPS Subpart KKKK requirements as outlined in the current Title V permit.

3.1.4.3 40 CFR Part 60 Subpart TTTT and TTTTa – Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units

NSPS TTTT, *Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units*, applies to electric generating units that commenced construction after January 8, 2014 but before May 23, 2023 and/or commenced reconstruction after June 18, 2014 but before May 23, 2023. The combustion turbines at CPP were constructed prior to January 8, 2014, and have not undergone any reconstruction since the original installation. As such, NSPS Subpart TTTT does not apply to the existing units at CPP.

The GHG standards included in NSPS subpart TTTTa apply to any stationary combustion turbine that commences construction or reconstruction after May 23, 2023. The CPP turbines were not constructed or reconstructed after May 23, 2023, and therefore subpart TTTTa does not apply to these turbines.

3.1.5 California Environmental Quality Act (CEQA)

Under Rule 202, Section 307, the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate if the Air Pollution Control Officer finds that the project which is the subject of an application would not comply with CEQA. Because CPP underwent review/approval by the CEC as an Application for Certification (AFC), and this project will not require amendment to this AFC, we expect that CEC staff will determine that this project will not require CEC review. Therefore, the SMAQMD will not be required to issue either a preliminary or a final determination of compliance (PDOC/FDOC) prior to issuing the final Authority to Construct permit for the Project.

APPENDIX A. SMAQMD FORMS

777 12th Street, 3rd Floor
Sacramento, CA 95814-1908

Sacramento Metropolitan
Air Quality Management District

(916) 874-4800
Fax (916) 874-4899

FORM G100
APPLICATION FOR AUTHORITY TO CONSTRUCT AND/OR PERMIT TO OPERATE

A SEPARATE APPLICATION AND FORM(S) SPECIFIC TO THE PROCESS
OR EQUIPMENT MUST BE COMPLETED FOR **EACH** PROCESS OR PIECE OF EQUIPMENT

A. Both pages of this application must be completed; an original signature (not a facsimile or copy) is required.
B. The appropriate permit fee must be submitted with the application (refer to SMAQMD Rule 301 or 310 for fee schedule).

1. Name of business or organization that is to receive the permit: SMUD Financing Authority

Business type: ☐ Sole Proprietorship ☐ Limited Liability Company ☐ Partnership
☐ Corporation ☐ Wholly-owned Subsidiary ☐ Government ☑ Other

2. Employer Identification Number (E.I.N.): __ __ __ __ __ __ __ __ __ __

3. Number of Employees: >1,000 4. NAICS Classification No.: 2 2 1 1 1 2

5. Does this business (including its affiliates) have annual receipts in excess of $750,000? ☑ Yes ☐ No

6. Mailing address: P.O. Box 15830 Sacramento CA 95852
NUMBER STREET CITY STATE ZIP CODE PHONE NO.

7. Location Address (where the equipment will be operated, if different than above)
14295 Clay East Road Herald CA 95638
NUMBER STREET CITY STATE ZIP CODE PHONE NO.

8. Name of Facility that will Operate the Equipment (if different than above):

DBA: _____

9. Description of equipment/process to be permitted: Turbine Unit 2 AFS Upgrade Project

_____

☐ Constructing/installing new equipment
Estimated startup date for new equipment: _____

☐ Initial permit for existing equipment
Date Operation First Commenced: _____

☑ Modification of existing permitted equipment or permit conditions
Estimated completion date for modification: 4Q 2025 Previous Permit No.: 25801

☐ Change of Ownership
Change of ownership date: _____ Previous Permit No.: _____

10. Is this permit application being submitted in response to a Notice of Violation (NOV) or Notice to Correct (NTC) issued by the SMAQMD? ☐ Yes ☑ No If Yes, NOV or NTC #: _____

DO NOT WRITE BELOW (SMAQMD USE ONLY)

DATE STAMP	PERMIT NUMBER	A/C FEE	A/C RECEIPT
	PREVIOUS P/O	P/O FEE	P/O RECEIPT

777 12th Street, 3rd Floor
Sacramento, CA 95814-1908

Sacramento Metropolitan Air Quality Management District

(916) 874-4800
Fax (916) 874-4899

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A. Both pages of this application must be completed; an original signature (not a facsimile or copy) is required.
B. The appropriate permit fee must be submitted with the application (refer to the SMAQMD Rules or fee schedule).

11. All information submitted to obtain an Authority to Construct/Permit to Operate is considered public information as defined by section 6254.7 of the California Government Code unless specifically marked as trade secret by the applicant. Each document containing trade secrets must be separated from all non-privileged documents. Each document which is claimed to contain trade secrets must indicate each section or paragraph that contains trade secret information and must have attached a declaration stating with specificity the reason this document contains trade secret information. All emission data is subject to disclosure regardless of any claim of trade secret.

Are trade secret documents are included with this application? ☐ Yes ☑ No

12. Pursuant to Section 42301.6(f) of the Health and Safety Code, I hereby certify that emission sources in this permit application:

(*Check appropriate box*) ☐ **ARE** OR ☑ **ARE NOT** within 1,000 feet of the outer boundary of a school

Pursuant to section 42301.9(a) of the Health and Safety Code, "School" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

13. Required information, analyses, plans and/or specifications needed to complete this application are being collected under authority granted by California Health & Safety Code (CH&SC) section 42303. In addition, CH&SC section 42303.5 states that *No person shall knowingly make any false statements in any application for a permit, or in any information, plans, or specifications submitted in conjunction with the application or at the request of the Air Pollution Control Officer.* Violations of the CH&SC may result in criminal or civil penalties, as specified in CH&SC sections 42400 through 42402.3. By signing below, I certify that all information is true and accurate and complete, to the best of my knowledge and ability.

Please be advised that constructing, installing, or operating air pollutant emitting equipment prior to receiving an Authority to Construct from the Air District is a violation of air pollution regulations and is subject to civil or criminal penalties prescribed in the California Health and Safety Code.

Signature of responsible officer, partner or proprietor of firm _____

Printed Name: Pedro Juarez Title: Manager Thermal Generation Assets Date: 01/08/2025

Phone number: (916) 732-6139 Fax number: _____ E-mail address: pedro.juarez@smud.org

14. Contact person for information submitted with this application (if different from above):

Name: Jeffrey Adkins Title: Principal Consultant

Phone number: (916) 273-5127 Fax number: _____ E-mail address: jadkins@trinityconsultants.com

15. Receipt of future rules and planning notices affecting your permit and facility; check one box:

☑ Please send e-mail notices to Rene Toledo (Rene.Toledo@smud.org)

☐ I will sign up myself at www.airquality.org/listserve/ to receive e-mailed notices.

☐ I want the District to mail notices to the address on this application.

☐ I am already subscribed.

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FORM G100
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B. The appropriate permit fee must be submitted with the application (refer to SMAQMD Rule 301 or 310 for fee schedule).

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Business type: ☐ Sole Proprietorship ☐ Limited Liability Company ☐ Partnership ☐ Corporation ☐ Wholly-owned Subsidiary ☐ Government ☑ Other

2. Employer Identification Number (E.I.N.): _ _ _ _ _ _ _ _ _ _

3. Number of Employees: >1,000 4. NAICS Classification No.: 2 2 1 1 1 2

5. Does this business (including its affiliates) have annual receipts in excess of $750,000? ☑ Yes ☐ No

6. Mailing address: P.O. Box 15830 Sacramento CA 95852
NUMBER STREET CITY STATE ZIP CODE PHONE NO.

7. Location Address (where the equipment will be operated, if different than above)
14295 Clay East Road Herald CA 95638
NUMBER STREET CITY STATE ZIP CODE PHONE NO.

8. Name of Facility that will Operate the Equipment (if different than above):

DBA: _____

9. Description of equipment/process to be permitted: Turbine Unit 3 AFS Upgrade Project

_____

☐ Constructing/installing new equipment
Estimated startup date for new equipment: _____

☐ Initial permit for existing equipment
Date Operation First Commenced: _____

☑ Modification of existing permitted equipment or permit conditions
Estimated completion date for modification: 4Q 2025 Previous Permit No.: 25800

☐ Change of Ownership
Change of ownership date: _____ Previous Permit No.: _____

10. Is this permit application being submitted in response to a Notice of Violation (NOV) or Notice to Correct (NTC) issued by the SMAQMD? ☐ Yes ☑ No If Yes, NOV or NTC #: _____

DO NOT WRITE BELOW (SMAQMD USE ONLY)

DATE STAMP	PERMIT NUMBER	A/C FEE	A/C RECEIPT
	PREVIOUS P/O	P/O FEE	P/O RECEIPT

777 12th Street, 3rd Floor
Sacramento, CA 95814-1908

Sacramento Metropolitan Air Quality Management District

(916) 874-4800
Fax (916) 874-4899

APPLICATION FOR AUTHORITY TO CONSTRUCT AND/OR PERMIT TO OPERATE

A SEPARATE APPLICATION AND FORM(S) SPECIFIC TO THE PROCESS OR EQUIPMENT MUST BE COMPLETED FOR **EACH** PROCESS OR PIECE OF EQUIPMENT

A. Both pages of this application must be completed; an original signature (not a facsimile or copy) is required.
B. The appropriate permit fee must be submitted with the application (refer to the SMAQMD Rules or fee schedule).

11. All information submitted to obtain an Authority to Construct/Permit to Operate is considered public information as defined by section 6254.7 of the California Government Code unless specifically marked as trade secret by the applicant. Each document containing trade secrets must be separated from all non-privileged documents. Each document which is claimed to contain trade secrets must indicate each section or paragraph that contains trade secret information and must have attached a declaration stating with specificity the reason this document contains trade secret information. All emission data is subject to disclosure regardless of any claim of trade secret.

Are trade secret documents are included with this application? ☐ Yes ☑ No

12. Pursuant to Section 42301.6(f) of the Health and Safety Code, I hereby certify that emission sources in this permit application:

(*Check appropriate box*) ☐ **ARE** OR ☑ **ARE NOT** within 1,000 feet of the outer boundary of a school

Pursuant to section 42301.9(a) of the Health and Safety Code, "School" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

13. Required information, analyses, plans and/or specifications needed to complete this application are being collected under authority granted by California Health & Safety Code (CH&SC) section 42303. In addition, CH&SC section 42303.5 states that *No person shall knowingly make any false statements in any application for a permit, or in any information, plans, or specifications submitted in conjunction with the application or at the request of the Air Pollution Control Officer.* Violations of the CH&SC may result in criminal or civil penalties, as specified in CH&SC sections 42400 through 42402.3. By signing below, I certify that all information is true and accurate and complete, to the best of my knowledge and ability.

Please be advised that constructing, installing, or operating air pollutant emitting equipment prior to receiving an Authority to Construct from the Air District is a violation of air pollution regulations and is subject to civil or criminal penalties prescribed in the California Health and Safety Code.

Signature of responsible officer, partner or proprietor of firm _____

Printed Name: Pedro Juarez Title: Manager Thermal Generation Assets Date: 01/08/2025

Phone number: (916) 732-6139 Fax number: _____ E-mail address: pedro.juarez@smud.org

14. Contact person for information submitted with this application (if different from above):

Name: Jeffrey Adkins Title: Principal Consultant

Phone number: (916) 273-5127 Fax number: _____ E-mail address: jadkins@trinityconsultants.com

15. Receipt of future rules and planning notices affecting your permit and facility; check one box:

☑ Please send e-mail notices to Rene Toledo (Rene.Toledo@smud.org)

☐ I will sign up myself at www.airquality.org/listserve/ to receive e-mailed notices.

☐ I want the District to mail notices to the address on this application.

☐ I am already subscribed.

APPENDIX B. EMISSION CALCULATIONS

Table B-1. CPP Units 2 and 3 Five-Year Baseline Emissions

		Unit 2										Unit 3										Combined Unit 2 and Unit 3				
Month#	Date	CO (LB)		NOX (LB)		PM10 (LB)		SO2 (LB)		VOC (LB)		CO (LB)		NOX (LB)		PM10 (LB)		SO2 (LB)		VOC (LB)		CO (LB)	NOX (LB)	PM10 (LB)	SO2 (LB)	VOC (LB)
		lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	lb/mo	24mo avg	24mo avg	24mo avg	24mo avg	24mo avg	24mo avg
1	01/20	600.1	N/A	5,309.0	N/A	4,509.4	N/A	661.4	N/A	1,652.5	N/A	177.9	N/A	5,773.1	N/A	5,175.1	N/A	759.0	N/A	1,896.5	N/A	N/A	N/A	N/A	N/A	N/A
2	02/20	275.0	N/A	5,196.8	N/A	4,621.5	N/A	677.8	N/A	1,693.9	N/A	576.1	N/A	5,366.7	N/A	4,719.9	N/A	692.2	N/A	1,730.0	N/A	N/A	N/A	N/A	N/A	N/A
3	03/20	49.8	N/A	4,862.6	N/A	4,472.1	N/A	655.9	N/A	1,640.4	N/A	94.3	N/A	4,812.7	N/A	4,451.6	N/A	652.9	N/A	1,632.9	N/A	N/A	N/A	N/A	N/A	N/A
4	04/20	637.4	N/A	1,906.7	N/A	1,347.3	N/A	197.6	N/A	494.0	N/A	757.9	N/A	1,699.5	N/A	1,311.9	N/A	192.4	N/A	481.0	N/A	N/A	N/A	N/A	N/A	N/A
5	05/20	434.3	N/A	5,072.2	N/A	4,381.0	N/A	642.5	N/A	1,606.3	N/A	463.7	N/A	4,527.6	N/A	4,302.0	N/A	631.0	N/A	1,577.4	N/A	N/A	N/A	N/A	N/A	N/A
6	06/20	58.6	N/A	5,276.3	N/A	4,727.8	N/A	693.4	N/A	1,733.1	N/A	112.0	N/A	5,098.1	N/A	4,698.0	N/A	689.0	N/A	1,722.2	N/A	N/A	N/A	N/A	N/A	N/A
7	07/20	300.8	N/A	4,989.3	N/A	4,573.9	N/A	670.8	N/A	1,676.0	N/A	190.4	N/A	4,961.9	N/A	4,781.1	N/A	701.2	N/A	1,751.8	N/A	N/A	N/A	N/A	N/A	N/A
8	08/20	72.6	N/A	5,626.2	N/A	4,948.7	N/A	725.8	N/A	1,815.0	N/A	144.0	N/A	5,083.9	N/A	4,903.7	N/A	719.2	N/A	1,798.5	N/A	N/A	N/A	N/A	N/A	N/A
9	09/20	82.3	N/A	5,279.9	N/A	4,763.1	N/A	698.6	N/A	1,746.4	N/A	161.0	N/A	4,807.7	N/A	4,645.8	N/A	681.4	N/A	1,703.4	N/A	N/A	N/A	N/A	N/A	N/A
10	10/20	429.3	N/A	5,198.8	N/A	4,571.3	N/A	670.4	N/A	1,676.1	N/A	209.7	N/A	5,014.0	N/A	4,567.1	N/A	669.8	N/A	1,674.6	N/A	N/A	N/A	N/A	N/A	N/A
11	11/20	480.9	N/A	5,470.5	N/A	4,537.1	N/A	665.4	N/A	1,682.0	N/A	335.7	N/A	5,497.5	N/A	4,761.0	N/A	698.3	N/A	1,765.0	N/A	N/A	N/A	N/A	N/A	N/A
12	12/20	104.4	N/A	8,032.6	N/A	5,754.1	N/A	843.9	N/A	2,111.1	N/A	309.7	N/A	8,002.4	N/A	5,723.0	N/A	839.4	N/A	2,099.7	N/A	N/A	N/A	N/A	N/A	N/A
13	01/21	320.9	N/A	7,163.8	N/A	5,361.3	N/A	786.3	N/A	1,964.1	N/A	242.5	N/A	7,117.8	N/A	5,260.7	N/A	771.6	N/A	1,927.2	N/A	N/A	N/A	N/A	N/A	N/A
14	02/21	72.2	N/A	6,418.7	N/A	4,750.1	N/A	696.7	N/A	1,741.6	N/A	297.6	N/A	6,240.6	N/A	4,704.3	N/A	689.9	N/A	1,724.8	N/A	N/A	N/A	N/A	N/A	N/A
15	03/21	40.5	N/A	5,765.8	N/A	4,303.3	N/A	631.1	N/A	1,577.9	N/A	118.4	N/A	5,688.2	N/A	4,262.7	N/A	625.2	N/A	1,562.9	N/A	N/A	N/A	N/A	N/A	N/A
16	04/21	377.3	N/A	3,502.0	N/A	2,483.6	N/A	364.2	N/A	910.6	N/A	376.9	N/A	4,030.9	N/A	2,871.7	N/A	421.2	N/A	1,052.9	N/A	N/A	N/A	N/A	N/A	N/A
17	05/21	58.5	N/A	6,782.8	N/A	5,035.9	N/A	738.6	N/A	1,847.0	N/A	235.4	N/A	6,275.1	N/A	4,988.6	N/A	731.6	N/A	1,829.7	N/A	N/A	N/A	N/A	N/A	N/A
18	06/21	25.1	N/A	6,812.7	N/A	4,989.1	N/A	731.7	N/A	1,836.9	N/A	145.8	N/A	6,621.2	N/A	4,988.9	N/A	731.7	N/A	1,836.8	N/A	N/A	N/A	N/A	N/A	N/A
19	07/21	53.0	N/A	7,513.5	N/A	5,446.0	N/A	798.7	N/A	1,995.9	N/A	94.9	N/A	7,473.8	N/A	5,464.8	N/A	801.5	N/A	2,002.8	N/A	N/A	N/A	N/A	N/A	N/A
20	08/21	14.5	N/A	7,438.8	N/A	5,391.9	N/A	790.8	N/A	1,978.0	N/A	41.0	N/A	7,277.3	N/A	5,399.1	N/A	791.8	N/A	1,980.7	N/A	N/A	N/A	N/A	N/A	N/A
21	09/21	119.0	N/A	7,000.8	N/A	5,079.2	N/A	744.9	N/A	1,862.4	N/A	78.8	N/A	6,755.7	N/A	5,078.4	N/A	744.8	N/A	1,862.1	N/A	N/A	N/A	N/A	N/A	N/A
22	10/21	696.6	N/A	6,208.7	N/A	4,829.5	N/A	708.3	N/A	1,771.1	N/A	357.6	N/A	6,444.0	N/A	4,833.0	N/A	708.8	N/A	1,772.3	N/A	N/A	N/A	N/A	N/A	N/A
23	11/21	211.3	N/A	6,539.8	N/A	4,966.6	N/A	728.4	N/A	1,819.8	N/A	439.4	N/A	6,430.2	N/A	4,899.4	N/A	718.6	N/A	1,795.2	N/A	N/A	N/A	N/A	N/A	N/A
24	12/21	319.8	2,917	7,197.5	70,283	5,328.2	55,586	781.4	8,152	1,953.6	20,393	202.5	3,082	7,136.1	69,068	5,252.1	56,022	770.3	8,216	1,925.7	20,553	5,999	139,351	111,608	16,369	40,946
25	01/22	164.5	2,699	7,084.7	71,171	5,282.6	55,973	774.8	8,209	1,938.1	20,536	229.2	3,107	6,901.1	69,632	5,198.8	56,034	762.5	8,218	1,907.3	20,558	5,807	140,803	112,006	16,427	41,094
26	02/22	334.6	2,729	5,798.9	71,472	4,526.1	55,925	663.8	8,202	1,659.6	20,519	579.5	3,109	5,672.8	69,785	4,491.8	55,920	658.8	8,201	1,647.0	20,517	5,838	141,257	111,845	16,403	41,035
27	03/22	172.7	2,791	1,662.7	69,872	1,584.7	54,481	232.4	7,990	582.0	19,989	359.4	3,242	1,568.6	68,163	1,558.3	54,473	228.5	7,989	572.3	19,987	6,032	138,035	108,954	15,980	39,976
28	04/22	0.0	2,472	0.0	68,919	0.0	53,808	0.0	7,891	0.0	19,742	0.0	2,863	0.0	67,313	0.0	53,817	0.0	7,893	0.0	19,746	5,334	136,232	107,625	15,785	39,488
29	05/22	0.0	2,255	0.0	66,382	0.0	51,617	0.0	7,570	0.0	18,939	527.2	2,894	349.0	65,224	7.1	51,670	1.0	7,578	2.6	18,959	5,149	131,606	103,287	15,148	37,898
30	06/22	742.3	2,597	673.5	64,081	231.4	49,369	33.9	7,240	84.9	18,115	558.0	3,117	450.8	62,900	55.7	49,349	8.2	7,238	20.4	18,108	5,714	126,981	98,717	14,478	36,223
31	07/22	12.8	2,453	489.7	61,831	463.2	47,314	67.9	6,939	169.8	17,362	374.3	3,209	486.6	60,663	288.2	47,102	42.3	6,908	105.7	17,285	5,662	122,494	94,416	13,847	34,647
32	08/22	869.7	2,851	1,161.1	59,599	626.6	45,152	91.9	6,622	229.7	16,569	0.0	3,137	0.0	58,121	0.0	44,650	0.0	6,549	0.0	16,386	5,988	117,719	89,803	13,171	32,955
33	09/22	109.7	2,865	1,893.7	57,906	1,343.4	43,443	197.0	6,371	492.6	15,942	846.1	3,480	1,742.9	56,588	1,058.0	42,856	155.2	6,286	387.9	15,728	6,345	114,494	86,299	12,657	31,670
34	10/22	0.0	2,650	0.0	55,306	0.0	41,157	0.0	6,036	0.0	15,104	0.0	3,375	0.0	54,081	0.0	40,573	0.0	5,951	0.0	14,891	6,025	109,387	81,730	11,987	29,995
35	11/22	978.3	2,899	1,125.8	53,134	537.0	39,157	78.8	5,743	196.9	14,362	0.0	3,207	0.0	51,333	0.0	38,192	0.0	5,601	0.0	14,008	6,106	104,466	77,349	11,344	28,370
36	12/22	67.5	2,880	1,765.8	50,000	1,319.4	36,940	193.5	5,418	483.8	13,548	605.6	3,355	572.1	47,617	260.1	35,461	38.1	5,201	95.4	13,006	6,235	97,618	72,400	10,618	26,554
37	01/23	0.0	2,720	0.0	46,419	0.0	34,259	0.0	5,024	0.0	12,566	0.0	3,234	0.0	44,059	0.0	32,831	0.0	4,815	0.0	12,042	5,954	90,477	67,089	9,839	24,608
38	02/23	1,294.3	3,331	742.8	43,581	112.9	31,940	16.6	4,684	41.4	11,716	886.7	3,528	589.6	41,233	73.0	30,515	10.7	4,475	26.8	11,193	6,859	84,814	62,455	9,160	22,909
39	03/23	271.1	3,446	7,282.1	44,339	5,176.9	32,377	759.3	4,748	1,898.2	11,876	165.0	3,552	7,112.4	41,945	5,443.6	31,105	798.4	4,562	1,996.0	11,410	6,998	86,284	63,482	9,310	23,286
40	04/23	8.5	3,262	1,350.9	43,263	1,007.3	31,639	147.7	4,640	369.3	11,606	1,076.5	3,901	1,874.0	40,867	1,330.3	30,335	195.1	4,449	487.8	11,127	7,163	84,130	61,974	9,089	22,733
41	05/23	459.4	3,462	2,039.7	40,892	1,362.0	29,802	199.8	4,371	499.4	10,932	554.6	4,061	4,385.5	39,922	4,071.3	29,876	597.1	4,382	1,492.8	10,959	7,523	80,813	59,678	8,753	21,891

42	06/23	409.5	3,655	2,181.0	38,576	1,476.6	28,046	216.6	4,113	541.4	10,284		59.5	4,018	5,378.4	39,300	4,697.0	29,730	688.9	4,360	1,722.2	10,902		7,672	77,876	57,776	8,474	21,185
43	07/23	1.7	3,629	7,538.2	38,588	5,438.2	28,042	797.6	4,113	1,993.9	10,283		50.7	3,996	6,899.3	39,013	5,383.7	29,689	789.6	4,354	1,974.0	10,887		7,625	77,601	57,731	8,467	21,170
44	08/23	4.1	3,624	6,943.8	38,341	5,092.3	27,892	746.9	4,091	1,867.1	10,228		378.8	4,165	5,723.0	38,236	4,783.5	29,382	701.6	4,309	1,753.9	10,774		7,788	76,577	57,274	8,400	21,001
45	09/23	138.6	3,634	7,007.0	38,344	4,980.5	27,843	730.5	4,084	1,826.1	10,209		190.7	4,221	5,936.5	37,826	4,924.5	29,305	722.2	4,298	1,805.6	10,745		7,854	76,170	57,147	8,382	20,955
46	10/23	0.1	3,285	7,172.9	38,826	5,226.7	28,041	766.6	4,113	1,916.4	10,282		147.1	4,115	6,233.4	37,721	5,143.7	29,460	754.4	4,321	1,886.0	10,802		7,401	76,547	57,501	8,433	21,084
47	11/23	14.7	3,187	5,272.9	38,192	3,801.4	27,459	557.5	4,027	1,393.8	10,069		536.1	4,164	5,050.4	37,031	3,688.7	28,855	541.0	4,232	1,352.5	10,581		7,351	75,224	56,313	8,259	20,650
48	12/23	48.0	3,051	8,325.8	38,757	5,821.7	27,705	853.8	4,063	2,134.6	10,160		52.9	4,089	7,863.4	37,395	5,729.2	29,093	840.3	4,267	2,100.7	10,668		7,140	76,151	56,799	8,330	20,828
49	01/24	0.1	2,969	8,032.3	39,230	5,795.2	27,962	849.9	4,101	2,124.9	10,253		5.5	3,977	7,797.4	37,843	5,718.2	29,353	838.7	4,305	2,096.6	10,763		6,946	77,073	57,315	8,406	21,016
50	02/24	0.9	2,802	6,646.9	39,654	5,275.5	28,336	773.7	4,156	1,934.3	10,390		161.6	3,768	6,636.8	38,325	5,216.5	29,715	765.1	4,358	1,912.7	10,896		6,570	77,979	58,052	8,514	21,286
51	03/24	3.2	2,717	7,142.7	42,394	5,578.9	30,334	818.2	4,449	2,045.6	11,122		361.5	3,769	6,537.3	40,809	5,512.4	31,692	808.5	4,648	2,021.2	11,620		6,486	83,204	62,026	9,097	22,742
52	04/24	6.7	2,721	2.3	42,395	0.8	30,334	0.1	4,449	0.3	11,122		0.0	3,769	0.0	40,809	0.0	31,692	0.0	4,648	0.0	11,620		6,490	83,205	62,026	9,097	22,743
53	05/24	818.4	3,130	3,980.0	44,385	2,933.2	31,801	430.2	4,664	1,075.5	11,660		2,660.8	4,836	2,566.2	41,918	2,333.7	32,856	342.3	4,819	855.7	12,047		7,966	86,303	64,656	9,483	23,707
54	06/24	1.5	2,759	6,319.5	47,208	4,797.4	34,084	703.6	4,999	1,759.0	12,497		27.8	4,571	4,226.4	43,806	4,746.4	35,201	696.1	5,163	1,740.3	12,907		7,330	91,014	69,285	10,162	25,404
55	07/24	0.0	2,753	7,614.6	50,771	5,423.2	36,564	795.4	5,363	1,988.5	13,406		7.6	4,388	6,135.7	46,630	5,392.3	37,753	790.9	5,537	1,977.1	13,843		7,141	97,401	74,317	10,900	27,249
56	08/24	38.3	2,337	7,436.4	53,909	5,348.4	38,924	784.4	5,709	1,961.0	14,272		18.6	4,397	6,363.5	49,812	5,343.4	40,425	783.7	5,929	1,959.2	14,822		6,734	103,721	79,349	11,638	29,094
57	09/24	0.1	2,283	7,370.9	56,647	5,207.8	40,857	763.8	5,992	1,909.5	14,980		24.2	3,986	6,442.9	52,162	5,175.6	42,484	759.1	6,231	1,897.7	15,577		6,268	108,809	83,340	12,223	30,558
58	10/24	417.9	2,491	6,505.2	59,900	4,793.5	43,253	703.0	6,344	1,757.6	15,859		465.2	4,219	5,964.7	55,144	4,685.0	44,826	687.1	6,574	1,717.8	16,436		6,710	115,044	88,079	12,918	32,295
59	11/24	543.9	2,274	7,162.6	62,918	5,034.2	45,502	738.3	6,674	1,845.8	16,684		168.8	4,303	7,247.2	58,768	5,421.2	47,537	795.1	6,972	1,987.7	17,430		6,577	121,686	93,039	13,646	34,114
60	12/24	0.2	2,241	7,885.6	65,978	5,588.2	47,636	819.6	6,987	2,049.0	17,466		33.0	4,017	7,611.0	62,288	5,528.6	50,171	810.8	7,358	2,027.1	18,396		6,257	128,266	97,807	14,345	35,862
	Average =		2,887		51,715		38,393		5,631		14,082			3,736		49,820		38,919		5,708		14,275		6,623	101,535	77,312	11,339	28,357
Baseline 3/20 - 2/22 (lbs)=			**2,729**		**71,472**		**55,925**		**8,202**		**20,519**			**3,109**		**69,785**		**55,920**		**8,201**		**20,517**		**5,838**	**141,257**	**111,845**	**16,403**	**41,035**
Baseline 3/20 - 2/22 (tons)=			**1.4**		**35.7**		**28.0**		**4.1**		**10.3**			**1.6**		**34.9**		**28.0**		**4.1**		**10.3**		**2.9**	**70.6**	**55.9**	**8.2**	**20.5**