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Description:	Annual Compliance Report- 2019
Filer:	Anwar Ali
Organization:	Calpine Energy Solutions
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Metcalf Energy Center, LLC

1 Blanchard Road
Coyote, CA 95013

August 18, 2020

Mr. Anwar Ali
Compliance Project Manager
Systems Assessment & Facility Sitting Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814

Re: Metcalf Energy Center, LLC.
Docket No. 99-AFC-3
COM-7 - Annual Compliance Report for 2019

Dear Mr. Ali:

In accordance with the Conditions of Certification for the Metcalf Energy Center, LLC, this report is intended to fulfill the requirements of the Annual Compliance Report for 2019 in Condition of Certification COM-7.

Enclosed are the documents required by the Conditions of Certification. The documents are provided as appendices, as noted in the Annual Compliance Summary:

- Annual Compliance Summary
- Conditions of Certification Matrix
- Operating Data Summary
- AQ-13: Gas Turbine and HRSG Firing with Natural Gas
- AQ-14: Heat Input Hourly Limit
- AQ-15: Heat Input daily Limit
- AQ-16: Heat Input Annual Limit
- AQ-17: HRSG Duct Burners Firing
- AQ-18: S-1 and S-2 SCR Operation and Maintenance
- AQ-19: S-3 and S-4 SCR Operation and Maintenance
- AQ-20:Gas Turbine Emissions
- AQ-21: Gas Turbine Mass Emissions
- AQ-22: Gas Turbine Start-up
- AQ-24: Gas Turbine and HRSG Total Combined Daily Emissions
- AQ-25: Gas Turbine and HRSG Total Combined 12-Month Emissions
- AQ-26: Annual Toxic Air Contaminants Emissions
- AQ-27: Operation and Maintenance of Continuous Monitors
- AQ-28: Calculation and Recording of Daily Mass Emissions
- AQ-29: Projected Annual Emissions of Formaldehyde, Benzene, Specific PAHs

- AQ-36: Notification of Violations
- AQ-44: Compliance with 40 CFR Part 75
- AQ-56: Cold Start-up Hours
- BIO-2: Designated Biologist Summaries
- HAZ-1: Hazardous Materials List
- LAND-1: Trail Network Connection
- PUBLIC HEALTH-1: Cooling Tower Inspection
- SOIL & WATER-1: Water Use Summary
- TLSN-2: Radio and TV Interference
- TLSN-4: Transmission Right-of-Way
- TRANS-3: Permits or Licenses for Hazardous Material Transport
- VIS-1: Treatment of Project Structures
- VIS-10: Visible Plumes
- WASTE-3: Waste Management Comparison

If you have any additional questions, please feel free to contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Sincerely,

Terry Mahoney
General Manager
Metcalf Energy Center, LLC.

Enclosures: Via Email

Appendix 1

California Energy Commission
2019 Annual Compliance Report
Metcalf Energy Center – 99-AFC-3

Table of Contents

Metcalf Energy Center – 99-AFC-3
2019 Annual Compliance Report

Project Status

The Metcalf Energy Center, LLC (MEC) declared commercial operation (COD) on May 29, 2005. MEC is dispatched into the merchant market by Calpine Energy Services (CES) and participates in the Ancillary Services market with the California ISO.

The Annual Compliance Report has been prepared in accordance with the General Conditions of the Compliance Plan.

1. **An updated compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed).**

   The compliance matrix is included as an attachment. See Appendix 2.

2. **A summary of the current project operating status and an explanation of any significant changes to facility operations during the year.**

   The facility is currently operating in a normal status. There have been no significant changes to facility operations during the reporting year. See Appendix 3

3. **Documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report.**

   The documents required by specific conditions are included in this report as attachments and are identified in the transmittal letter.

4. **A cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM.**

   - Petition to maintain the facility's post-commissioning daily and annual emission limits amendment. Order number 05-0316—03, approved on March 16, 2005.

5. **An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided.**

   There are currently no outstanding submittals for the 2017 reporting period.

6. **A listing of filings made to, or permits issued by, other governmental agencies during the year.**

   - Annual compliance report submitted to CEC
     - Monthly Plume Abatement Status Reports
   - Annual Permit to Operate BAAQMD
     - Monthly Air Reports
   - Annual Title V Compliance Certification Report submitted to BAAQMD and EPA.

- Annual Hazardous Material Permit City of San Jose
    - Annual Hazardous Materials Business Plan Update and Certification
- Annual Fire Safety Permit City of San Jose
- Annual Business License City of San Jose.
- Annual Storm Water Report to the State Water Resources Control Board
- Annual EIA-923S and EIA-860A to the U.S. Department of Energy
- Quarterly Electronic Data Reporting to the EPA (40 CFR 75)
- Semi-Annual NSPS Report to the EPA
- Semi-Annual Title V Monitoring Reports
- Semi-Annual Waste Water Self-Monitoring Report to the City of San Jose
- Monthly EIA-923M to the U.S. Department of Energy
- All submittals, except as noted above, required under our permits have been made on time to include, for the 2017 reporting year.

7. **A projection of project compliance activities scheduled during the next year.**

   Currently there is no compliance activities scheduled.

8. **A listing of the year's additions to the on-site compliance file.**

   No additions have been made to the on-site compliance files as required by the Decision.

9. **An evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date.**

   An evaluation to the on-site contingency plan for unexpected facility closure was conducted with no modifications.

   In addition, insurance coverage for the site remains current. Currently the site major equipment warranties have expired.

10. **A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.**

    There were no complaints, notices of violations, official warnings or citations during the reporting period.

CONDITIONS OF CERTIFICATION SPECIFIC REQUIREMENTS

AQ-13 **The Gas Turbines and the Heat Recovery Steam Generators shall be fired exclusively on natural gas.**

No violation of this condition occurred for the 2019 reporting year

AQ-14 **The combined heat input rate to each power train shall not exceed 2,124 mmBTU per hour, averaged over any rolling 3-hour period.**

No violation of this condition occurred for the 2019 reporting year

AQ-15 **The combined heat input rate to each power train shall not exceed 49,908 mmBTU per calendar day.**

No violation of this condition occurred for the 2019 reporting year.

AQ-16 **The combined cumulative heat input rate for the Gas Turbines and HRSGs shall not exceed 35,274,060 mmBTU per year.**

No violation of this condition occurred for the 2019 reporting year.

AQ-17 **The HRSG duct burners shall not be fired unless its associated gas turbine is in operation.**

No violation of this condition occurred for the 2019 reporting year.

AQ-18 **S-1 Gas Turbine and S-2 HRSG shall be abated by the properly operated and properly maintained A-1 Selective Catalytic Reduction (SCR) system whenever fuel is combusted at those sources and the A-1 catalyst bed has reached minimum operating temperature.**

No violation of this condition occurred for the 2019 reporting year.

AQ-19 **S-3 Gas Turbine and S-4 HRSG shall be abated by the properly operated and properly maintained A-2 Selective Catalytic Reduction (SCR) system whenever fuel is combusted at those sources and the A-2 catalyst bed has reached minimum operating temperature.**

No violation of this condition occurred for the 2019 reporting year.

AQ-20 **The Gas Turbines and HRSGs shall comply emission requirements (a) through (h) under all operating scenarios, including duct burner firing mode and steam injection power augmentation mode. Requirements (a) through (h) do not apply during a gas turbine start-up or shutdown.**

No violation of this condition occurred for the 2019 reporting year.

AQ-21 **The regulated air pollutant mass emission rates from each of the Gas Turbines during a start-up or a shutdown shall not exceed the limits.**

- No violation of this condition occurred for the 2019 reporting year.

AQ-22 **The Gas Turbines shall not be in start-up mode simultaneously.**

No violation of this condition occurred for the 2019 reporting year.

AQ-24 **Total combined emissions from the Gas Turbines and HRSGs including emissions generated from the cooling tower and during Gas Turbine start-ups and shutdowns shall not exceed the following limits during any calendar day.**

No violation of this condition occurred for the 2019 reporting year.

AQ-25 **Combined emissions from the gas turbines and HRSGs, including emissions generated from cooling towers and during gas turbine startups, shutdowns and tuning shall not exceed permit limits during any consecutive twelve (12) month period.**

No violation of this condition occurred for the 2019 reporting year.

AQ-26 **Maximum projected annual toxic air contaminants emissions from the gas turbines shall not exceed permit limits.**

No violation of this condition occurred for the 2019 reporting year.

AQ-27 **Properly operated and maintained continuous monitors.**

Continuous monitors are properly operated and maintained.

AQ-28 **To demonstrate compliance with conditions 20(f), 20(g), 20(h), 21, 24(c') through 24(e), and 25('c) through 25(e) the owner/operator shall calculate and record on a daily basis the POC, PM10, and SO2 mass emissions from each power train.**

No violation of this condition occurred for the 2019 reporting year.

AQ-29 **Calculate and record on an annual basis the maximum projected annual emissions of formaldehyde, benzene and specific PAHs.**

No violation of this condition occurred for the 2019 reporting year.

AQ-36 **Notification to the District and CPM of any violations of permit conditions.**

No violations occurred during the 2019 reporting year.

AQ-44 **Compliance with the continuous emission monitoring requirements of 40 CFR Part 75.**

No violation of this condition occurred for the 2019 reporting year. See Appendix 4

AQ-56 **Cold Start-up hours shall not exceed 30 hours per calendar year for each turbine.**

No violation of this condition occurred for the 2019 reporting year.

BIO-2 **The CPM approved Designated Biologist shall submit record summaries in the Annual Compliance Report:**

The Designated Biologist currently is not conducting any of the tasks as specified in the condition. He does provide an annual report regarding the preserve.

HAZ-1 **Do not use any hazardous materials in reportable quantities not listed in attachment 1 or in greater quantities or strengths than those identified unless approved in advance by Santa Clara County and the CPM.**

A hazardous material inventory is included as an attachment and is identified in the table of contents. See Appendix 5.

LAND-1 **At such time as a connection to a trail network can be made, install and maintain the portion of planned trail that would cross the site.**

No trail updates have been made at this time. MEC is awaiting direction from the City of San Jose for trail construction.

PUBLIC HEALTH-1 **Perform a visual inspection of the cooling tower drift eliminators once per calendar year.**

The inspection sheet is included as an attachment and is identified in the table of contents. See Appendix 7.

SOIL & WATER-1 **Potable water may be used for cooling purposes only in the event that SBWR recycled water service is interrupted.**

A record of water consumption has been included and identified in the table of contents. See Appendix 8.

TLSN-2 **Identify and correct any complaints of interference w/ radio and TV signals from operation of line and facilities.**

No complaints of interference were received during the 2017 reporting year. The COC states that this needs to be included for 5 years. This timeframe has expired.

TLSN-4 **Ensure that the transmission line right-of-way is kept free of combustible material.**

The transmission right-of-way has been kept free of combustibles by the site's landscaper. The COC states that this needs to be included for 5 years. This timeframe has expired.

TRANS-3 **Ensure that all federal and state regulations for the transport of hazardous materials are observed during both construction and operation of the facility.**

No permits or licenses have been acquired concerning the transport of hazardous substances. A list of the hazardous materials deliveries received in 2019 is in Appendix 6.

VIS-1 **Treat the project structures, buildings, and tanks visible to the public in a non-reflective color.**

The plant's structures, buildings, and tanks have all been treated in accordance with this condition of certification. No treatment maintenance has been necessary. A copy of the inspection is in Appendix 10.

VIS-10 **The power plant shall be designed and operated to minimize visible plume.**

The total cooling tower plume hours for 2019 were 0 hours, as noted in the December 2019 Plume Summary Log. A copy of the submitted log is in Appendix 11.

WASTE-3 **Document the actual waste management methods used during the year compared to planned management methods.**

No violation of this condition occurred. A waste management sheet is included as an attachment and is identified in the table of contents. See Appendix 9.

Appendix 2

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION		5/29/2005					
THROUGH YEAR END OF 2019		12/31/2019					
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-13	GTs (S-1, S-3) and HRSG (S-2, S-4) shall be fired exclusively on natural gas. (BACT for SO2 and PM10)	As part of the semiannual Air Quality Reports, indicate the date, time, and duration of any violation of this condition.	Semiannual Air Quality Reports	Ongoing	Monthly and Semi-Annually		Ongoing
AQ-14	Combined heat input rate of each power train (S-1 & S-2, S-3 & S-4) shall not exceed 2,124 MMBtu/hr (3-hour rolling average) (PSD for NOx)	As part of the Air Quality monthly Reports, include information on the date and time when the hourly fuel consumption exceed this hourly limit.	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-15	Combined heat input rate of each power train (S-1 & S-2 and S-3 & S-4) shall not exceed 49,908 MMBtu/day (PSD for PM10)	As part of the Air Quality monthly Reports, include information on the date and time when the hourly fuel consumption exceed this daily limit.	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-16	Combined cumulative heat input rate of GTs (S-1, S-3) and HRSGs(S-2, S-4) shall not exceed 35,274,060 MMBtu/yr. (Offsets)	As part of the Air Quality annual Reports, include information on the date and time when the annual cumulative fuel consumption exceed this annual limit	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-17	HRSGs (S-2, S-4) duct burners shall not be fired unless associated GTs (S-1, S-3) are in operation. (BACT for NOx)	As part of the Air Quality Reports, include information on the date, time, and duration of any violation of this permit condition.	Air Quality Reports	Ongoing			Ongoing
AQ-18	GT/HRSG (S-1/S-2) shall be abated by the A-1 SCR system whenever fuel is combusted in these units and the A-1 catalyst bed has reached min. operating temperature.	As part of the Air Quality Reports, provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSG's.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-19	GT/HRSG (S-3/S-4) shall be abated by the A-2 SCR system whenever fuel is combusted in these units and the A-2 catalyst bed has reached min. operating temperature.	As part of the Air Quality Reports, provide info. on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(a)	Emission requirements: Emission Point P-1 NOx = 19.2 lbs/hr [0.00904 lbs/MMBtu (HHV) of nat. gas fired] ; Emission Point P-2 NOx = 19.2 lbs/hr [0.00904 lbs/MMBtu (HHV) of nat. gas fired] .	As part of the Semi-Annual Air Quality Reports, indicate the date, time, and duration of any violation. Include quantitative info. on the severity of the violation.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(b)	NOx Emission concentration = 2.5 ppmvd (corrected to 15% O2), 1-hr average {Emission Point P-1, P-2} (BACT for NOx).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(c)	CO mass emission = 28.07 lbs/hr (at any 3-hour rolling avg.) (Emission Point P-1, P-2).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(d)	When the heat input to a CT exceeds 1700 MMBTU/hr (HHV), the CO emission concentration shall not exceed 6.0 ppmvd on dry basis and the CO mass emission rate shall not exceed 0.0132 lb/MMBTU at any 3-hr rolling average.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION	5/29/2005						
THROUGH YEAR END OF 2019	12/31/2019						
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-20(e)	Ammonia (NH3) emission concentration shall not exceed 5 ppmvd on dry basis, at any 3-hour rolling avg. Ammonia injection rate to A-1, A-2 to be verified through continuous recording of rate.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(f)	Precursor organic compounds (POC) mass emissions (as CH4) shall not exceed 2.7 lbs/hr or 0.00126 lbs/MMBTU of natural gas fired. (Emission points P-1, P-2).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(g)	Sulfur dioxide (SO 2) mass emissions at P-1 ,P-2 each shall not exceed 1.28 pounds per hour or 0 .0006 lb /MM BTU of natural gas fired. (BACT)	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(h)	PM10 mass emission s at P-1 ,P-2 each shall not exceed 9 pounds per hour or 0.00452 lb PM10/MM BTU. Particulate matter (PM10) mass emissions at P-1 ,P-2 each shall not exceed 12 pounds per hour or 0.00565 lb PM10/MM BTU, when HRSG duct burners are in operation.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(i)	Testing to confirm the PM10 emissions levels shall occur at least three (3) times per year during each of the first two (2) years of operation. Each year, at least one (1) monitoring test shall occur during winter months.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-21	GT (S-1, S-3) Start-up and Shutdown emission rates.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-22	Not more than one GT (S-1, S-2) shall be in start-up mode at any one time.	In the monthly compliance report the owner/operator shall indicate any violations of this condition.	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-24	Total combined emissions in lbs/day, from GTs and HRSGs (S-1, S-2, S-3, S-4), including start-up and shutdown.	As part of the Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-25	Cumulative combined emissions in tons/any consecutive 12-month period, from GTs and HRSGs shall not exceed Nox = 123.4 (offsets), CO=588, POC=28 (offsets), PM10=91.3 (offsets), SO2=10.6 (cumulative increase).	As part of the Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-26	Maximum projected combined annual toxic air contaminant emissions from GTs and HRSGs (S-1, S-2, S-3, S-4). (a) formaldehyde = 3,796 lbs/yr (b) Benzene = 480 lbs/yr (c) PAHs=22.8 lbs/yr	As part of the annual Air Quality Reports, indicate the date, duration, and severity of any violation including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-26	Perform health risk assessment using emission rates per BAAQMD approved procedures and submit risk analysis to District and CPM.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation or submit risk analysis to District and CPM.	Within 60 days of source test date	Ongoing	Monthly/Annual		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION		5/29/2005					
THROUGH YEAR END OF 2019		12/31/2019					
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-27 (a-d)	Demonstrate compliance with conditions 14-17, 20(a-d), 21, 22, 24(a), 24(b), 25(a), 25(b) by using continuous monitors during all operating hours for the following parameters.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-27(e-f)	Use parameters in condition 27(a-d) and District approved methods to calculate the following. (e) Heat input rate for S-1 & S-2 combined, and S-3 & S-4 combined (f) Corrected NOx and CO concentrations and mass emissions at each exhaust point (P-1, P-2)	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-27(g-l)	For each source, source grouping, or exhaust point record parameters at least once every 15 minutes and calculate and record for the following. Refer to AQ-27 for further details.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-28(a-b)	Demonstrate compliance with conditions 20, 21, 24, 25 by calculating and recording on a daily basis POC, PM10, and SO2 mass emissions fine PM10 and SO2 from each power train.	As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation including quantitative information on the severity of the violation.	Monthly Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-29	Calculate and record on annual basis the max. projected annual emissions of formaldehyde, benzene, Specified Poly-Aromatic Hydrocarbons (PAH's).	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Annual		Ongoing
AQ-35	Maintain records and reports on site for a minimum of 5 years.	During site inspection, make all records and reports available to the District, California Air Resources Board, and CEC staffs.	AQ Inspection per AQ-35		Ongoing		Ongoing
AQ-36	Notify District and CPM of any violations of these permit conditions.	Submittal of these notifications as required by this condition is the verification of these permit conditions.	Violation of Permit Conditions		Ongoing		Ongoing
AQ-44	MEC shall comply with the continuous emission monitoring requirements of 40 CFR Part 75			Ongoing	Ongoing		Ongoing
AQ-45	Take monthly samples of natural gas combusted at MEC and analyze these samples for sulfur content using District-approved lab methods.	Maintain on site the records of all the guarantees received from its natural gas suppliers indicating that the fuel delivered to MEC complies with the 40 CFR Part 60,Subpart GG.	On-site Compliance Inspections	Ongoing	Monthly		Ongoing
AQ-47a	Perform visual inspection of cooling tower drift eliminators once per calendar year and repair or replace any drift eliminators which are broken or missing.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition.	Air Quality Reports	Ongoing	Annual		Ongoing
AQ-53	The heat input to the fire pump diesel engine shall not exceed 211 MM BTU totaled over any consecutive twelve month period.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Monthly		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION	5/29/2005						
THROUGH YEAR END OF 2019	12/31/2019						
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-54	The total hours of operation of the emergency generator shall not exceed 200 hours per calendar year, plus an additional 100 hours per calendar year for the purposes of maintenance and testing.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Annual		Ongoing
AQ-56	Cold Start-up hours shall not exceed 30 hours per calendar year for each Gas Turbine.	Provide dates and durations of any violation of this Condition to the CPM.	Air Quality Reports	Ongoing	Annual		Ongoing
AQ-57	Record start time, end time, and duration of Gas Turbine Cold Startup and Combustor Tuning Periods.	Make all records available to Agencies during inspection.	Ongoing		Ongoing		Ongoing
BIO-12	Incorporate into closure plan measures that address the local biological resources and incorporate into the BRMIMP.	Address all biological resource-related issues associated with facility closure.	12 months prior to facility closure	Ongoing	12 months Prior to Closure		Ongoing
HAZ-1	Do not use any hazardous material in reportable quantities, not listed in Attachment 1 or in greater quantities or strengths than those identified unless approved in advance by Santa Clara County and the CPM.	Provide to the CPM and Santa Clara County, in the Annual Compliance Report, a list of hazardous materials contained at the facility in reportable quantities.	Annual Compliance Report	Ongoing	Annual		Ongoing
LAND-1	At such time as a connection to a trail network can be made, install and maintain the portion of the planned trail that would cross the site.	In the Annual Compliance Reports provide updates on trail developments in the area around the site.	Annual Compliance Report	Ongoing	Annual		Ongoing
NOISE-2	Throughout the construction and operation, document, investigate, evaluate and attempt to resolve all project related noise complaints.	File a copy of the Noise Complaint Resolution Form with City of San Jose and with the CPM documenting the resolution of the complaint.	30 days after receiving a noise complaint	Ongoing	Within 30 Days		Ongoing
PAL-7	Include in the facility closure plan a description regarding facility closure activity's potential to impact paleontological resources.	Include a description of closure activities in the facility closure plan.	12 months prior to facility closure	Ongoing	12 months Prior to Closure		Ongoing
Public Health-1	Perform a visual inspection of the cooling tower drift eliminators once per calendar year. Prior to initial operation of the project, have the cooling tower vendor's field representative inspect the cooling tower drift eliminator and certify that the installation was performed in a satisfactory manner.	The project owner shall include the results of the annual inspection of the cooling tower drift eliminators and a description of any repairs performed in the next required compliance report.	Annual Compliance Report	Ongoing	Annual		Ongoing
SOIL & WATER-1	Potable water may be used for cooling purposes only in the event that SBWR recycled water service is interrupted.	Provide a record of water consumption for the MEC.	Annual Compliance Report	Ongoing	Annual		Ongoing
TRANS-3	Ensure that all federal and state regulations for the transport of hazardous materials are observed.	Copies of all permits and licenses acquired concerning the transport of hazardous substances.	Annual Compliance Report	Ongoing	Annual		Ongoing
VIS-1	Treat the project structures, buildings, and tanks visible to the public in a non-reflective color.	The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.	Annual Compliance Report	Ongoing	Annual		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	The project owner shall submit to the City of San Jose and the County of Santa Clara Parks and Recreation Department for review and comment a specific plan.	Start of construction of the trail between Blanchard Road and railroad tracks	Ongoing	Ongoing		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION		5/29/2005					
THROUGH YEAR END OF 2019		12/31/2019					
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Submit to the CPM for review and approval a specific plan describing its landscape plan.	Start of construction of the trail between Blanchard Road and railroad tracks	Ongoing	Ongoing		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Submit any required revisions.	Within 30 days of notification by the CPM.	Ongoing	Within 30 days		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Notify the CPM, City of San Jose and County of Santa Clara Parks and Recreation Department that the planting installation is ready for	7 days after completion of planting installation	Ongoing	Within 7 days		Ongoing
WASTE-2	Upon becoming aware of any impending waste management-related enforcement action, notify the CPM of any such enforcement action.	Notify the CPM in writing within 10 days of becoming aware of an impending enforcement action.	Within 10 days of becoming aware of an impending enforcement action	Ongoing	Within 10 Days		Ongoing
WASTE-3	Prepare and submit to the CPM a waste management plan for all wastes generated during construction and operation of the facility.	In the Annual Compliance Reports, document the actual waste management methods used during the year compared to planned management methods.	Annual Compliance Report	8/1/06	Annual		Ongoing
Compliance matrix	A compliance matrix shall be submitted by along with each annual compliance report.	Submit compliance matrix to CPM	Annual Compliance Report	Ongoing	Annual		Ongoing

Appendix 3

Operating Data Summary January 2019 - December 2019

Metcalf CT1			Metcalf CT2			Metcalf ST1		
Date	Total Net MWh	Total Primary Fuel Quantity Burned (MMcf GG)	Date	Total Net MWh	Total Primary Fuel Quantity Burned (MMcf GG)	Date	Total Net MWh	Total Secondary Fuel Quantity Burned (MMcf GG)
January	107,612	1,223.6	January	110,217	1,260.4	January	139,710	115.26
February	93,592	1,062.6	February	76,075	869.9	February	107,181	88.47
March	33,752	38,869.0	March	45,752	527.9	March	48,878	26.59
April	6,385	78.2	April	17,677	218.8	April	13,186	8.41
May	12,637	160.6	May	6,874	87.6	May	10,571	5.00
June	36,873	437.2	June	38,657	462.6	June	46,740	28.09
July	66,077	769.8	July	65,197	760.3	July	78,989	26.93
August	88,074	1,026.0	August	83,357	973.4	August	104,149	29.86
September	82,799	959.1	September	78,850	915.5	September	97,602	24.82
October	91,811	1,015.9	October	87,849	977.3	October	109,915	30.31
November	66,158	762.1	November	68,639	791.3	November	80,242	23.96
December	113,350	1,301.6	December	113,891	1,340.5	December	136,447	24.73

Appendix 4

ECMPS Client Tool

Version 1.* 2019 Q1

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

April 3, 2019 01:46 PM

Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2019 QTR 1
Feedback Status Level:	No Errors
Submission Date/Time:	04/03/2019 1:46:10 PM
Submitter User ID:	rsilva
Submission ID:	1233251
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: https://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA`s website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

April 3, 2019 01:46 PM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,533					1,533
Operating Time (hrs)	1,506.44					1,506.44
SO2 Mass (tons)	0.8					0.8
CO2 Mass (tons)	166,579.7					166,579.7
Heat Input (mmBtu)	2,803,012					2,803,012
NOx Emission Rate (lb/mmBtu)	0.008					0.008

ECMPS Client Tool

Version 1.* 2019 Q1

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

April 3, 2019 01:46 PM

Re: Metcalf Energy Center (55393) - 2

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters. Finally, a summary of ECMPS`s Evaluation Results is included.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2019 QTR 1
Feedback Status Level:	Informational Message
Submission Date/Time:	04/03/2019 1:46:39 PM
Submitter User ID:	rsilva
Submission ID:	1233256
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed; however, the Evaluation Results at the end of this Feedback Report contain one or more Informational Messages. If any of the Informational Messages indicates a reporting problem, the EPA strongly encourages you to correct the problem(s) and resubmit the data. NOTE: the ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an e-mail to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: https://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

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If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 2

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,505					1,505
Operating Time (hrs)	1,483.11					1,483.11
SO2 Mass (tons)	0.8					0.8
CO2 Mass (tons)	165,036.3					165,036.3
Heat Input (mmBtu)	2,777,030					2,777,030
NOx Emission Rate (lb/mmBtu)	0.008					0.008

ECMPS Client Tool

Version 1.* 2019 Q1

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

July 12, 2019 05:45 PM

Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2019 QTR 2
Feedback Status Level:	No Errors
Submission Date/Time:	07/12/2019 5:45:31 PM
Submitter User ID:	rsilva
Submission ID:	1257662
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

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If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

July 12, 2019 05:45 PM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,533	486				2,019
Operating Time (hrs)	1,506.44	441.55				1,947.99
SO2 Mass (tons)	0.8	0.2				1.0
CO2 Mass (tons)	166,579.7	40,862.7				207,442.4
Heat Input (mmBtu)	2,803,012	687,608				3,490,620
NOx Emission Rate (lb/mmBtu)	0.008	0.017				0.010

ECMPS Client Tool

Version 1.* 2019 Q1

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

July 12, 2019 05:46 PM

Re: Metcalf Energy Center (55393) - 2

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2019 QTR 2
Feedback Status Level:	No Errors
Submission Date/Time:	07/12/2019 5:46:06 PM
Submitter User ID:	rsilva
Submission ID:	1257667
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

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If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

July 12, 2019 05:46 PM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 2

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,505	556				2,061
Operating Time (hrs)	1,483.11	500.26				1,983.37
SO2 Mass (tons)	0.8	0.2				1.0
CO2 Mass (tons)	165,036.3	46,906.3				211,942.6
Heat Input (mmBtu)	2,777,030	789,287				3,566,317
NOx Emission Rate (lb/mmBtu)	0.008	0.020				0.011

ECMPS Client Tool

Version 1.* 2019 Q3

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

October 15, 2019 12:11 PM

Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2019 QTR 3
Feedback Status Level:	No Errors
Submission Date/Time:	10/15/2019 12:11:29 PM
Submitter User ID:	rsilva
Submission ID:	1281117
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

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ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA`s website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

October 15, 2019 12:11 PM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,533	486	1,675			3,694
Operating Time (hrs)	1,506.44	441.55	1,624.49			3,572.48
SO2 Mass (tons)	0.8	0.2	0.8			1.8
CO2 Mass (tons)	166,579.7	40,862.7	164,594.4			372,036.8
Heat Input (mmBtu)	2,803,012	687,608	2,769,636			6,260,256
NOx Emission Rate (lb/mmBtu)	0.008	0.017	0.009			0.009

ECMPS Client Tool

Version 1.* 2019 Q3

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

October 15, 2019 12:12 PM

Re: Metcalf Energy Center (55393) - 2

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2019 QTR 3
Feedback Status Level:	No Errors
Submission Date/Time:	10/15/2019 12:12:10 PM
Submitter User ID:	rsilva
Submission ID:	1281122
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: https://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA`s website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 2

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,505	556	1,579			3,640
Operating Time (hrs)	1,483.11	500.26	1,534.47			3,517.84
SO2 Mass (tons)	0.8	0.2	0.8			1.8
CO2 Mass (tons)	165,036.3	46,906.3	158,095.1			370,037.7
Heat Input (mmBtu)	2,777,030	789,287	2,660,255			6,226,572
NOx Emission Rate (lb/mmBtu)	0.008	0.020	0.009			0.010

ECMPS Client Tool

Version 1.* 2019 Q3

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

January 28, 2020 02:53 PM

Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2019 QTR 4
Feedback Status Level:	No Errors
Submission Date/Time:	01/28/2020 2:53:28 PM
Submitter User ID:	rsilva
Submission ID:	1314756
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: https://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA`s website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,533	486	1,675	1,838		5,532
Operating Time (hrs)	1,506.44	441.55	1,624.49	1,816.58		5,389.06
SO2 Mass (tons)	0.8	0.2	0.8	0.9		2.7
CO2 Mass (tons)	166,579.7	40,862.7	164,594.4	187,487.9		559,524.7
Heat Input (mmBtu)	2,803,012	687,608	2,769,636	3,154,831		9,415,087
NOx Emission Rate (lb/mmBtu)	0.008	0.017	0.009	0.007		0.009

ECMPS Client Tool

Version 1.* 2019 Q3

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

January 28, 2020 02:53 PM

Re: Metcalf Energy Center (55393) - 2

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2019 QTR 4
Feedback Status Level:	No Errors
Submission Date/Time:	01/28/2020 2:53:48 PM
Submitter User ID:	rsilva
Submission ID:	1314759
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: https://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA`s website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

January 28, 2020 02:53 PM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 2

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	1,505	556	1,579	1,839		5,479
Operating Time (hrs)	1,483.11	500.26	1,534.47	1,812.59		5,330.43
SO2 Mass (tons)	0.8	0.2	0.8	0.9		2.7
CO2 Mass (tons)	165,036.3	46,906.3	158,095.1	188,167.9		558,205.6
Heat Input (mmBtu)	2,777,030	789,287	2,660,255	3,166,240		9,392,812
NOx Emission Rate (lb/mmBtu)	0.008	0.020	0.009	0.008		0.010

Appendix 7

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133,400 HW 89.81 °F CW 72.1 °F WB 59 °F
Cell No. 1 Number of Fan Cells 10
Date Tower was installed

Date Inspected 03-18-19
Inspected by JEFFREY
Inspector
Signature
Model No. FH68N-40-10PWD Serial No. 223647
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☐ Material	X			
Ladder ☐ Material	X			
Handrail ☐ Material FIBER	X			
Interior Walkway ☐ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY 18" Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		
Eliminators–Type & Material PVC		X		
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment

1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation NA

Fan Sheave Designation

Motor Sheave Designation

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 220

Seals — No LEAKS	X			
Backlash	X			
Fan Shaft Endplay				

Unusual Noises? No ☑ Yes ☐ Action Required

Drive Shaft

Manufacturer Material FIBER

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☑

Diameter 384" HP7000 - 10 Number of Blades 10

Blade Material — FIBER		X		FIBER SHOWING ON BLADES
Hub Material — CARBON	X			
Hub Cover Material — FIBER	X			
Blade Assembly Hardware — S/S	X			
Tip Clearance — 1 " min 2 " max	X			
Vibration Level				
Fan Cylinder Height — 14'	X			
Mechanical Equipment Support — GALV	X			
Oil Fill and Drain Line — S/S	X			
Oil Level Sight Glass	X			
Vibration Limit Switch — METRIK				

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 460

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002

Last Lubrication—Date

Grease Used—Type 76 POLYTAC - 2

Unusual Noises? No ☑ Yes ☐ Action Required

Unusual Vibration? No ☑ Yes ☐ Action Required

Unusual Heat Build-up? No ☑ Yes ☐ Action Required

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133,400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 2 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected 03-18-19
Inspected by JEFFREY
Inspector
Signature
Model No. FH18A-40-10PIND Serial No. 223647
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☑ Material	X			
Ladder ☑ Material	X			
Handrail ☑ Material FIBER	X			
Interior Walkway ☑ Material FIBER	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY 16" Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		BRITTLE
Eliminators–Type & Material PVC		X		SOME NEED REPLACED
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment

1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation N/A

Fan Sheave Designation

Motor Sheave Designation

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 320

	1	2	3	
Seals	X			
Backlash	X			
Fan Shaft Endplay				

Unusual Noises? No ☑ Yes ☐ Action Required N/A

Drive Shaft

Manufacturer MARLEY Material FIBER

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☑

Diameter 384" HP7000 - 10 Number of Blades 10

	1	2	3	
Blade Material FIBER		X		FIBER SHOWING
Hub Material CARBON	X			
Hub Cover Material FIBER	X			
Blade Assembly Hardware S/S	X			
Tip Clearance 1 " min 2 " max	X			
Vibration Level	X			
Fan Cylinder Height 14'	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S		X		FITING LEAKS
Oil Level Sight Glass				
Vibration Limit Switch METRIX				

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4/160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WTD02

Last Lubrication—Date

Grease Used—Type 76 POLYTAC-2

Unusual Noises? No ☑ Yes ☐ Action Required

Unusual Vibration? No ☑ Yes ☐ Action Required

Unusual Heat Build-up? No ☑ Yes ☐ Action Required N/A

	1	2	3	
Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133,400 HW 89.81 °F CW 72.1 °F WB 59 °F
Cell No. 3 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected 03-18-19
Inspected by JEFFREY
Inspector
Signature
Model No. F-488A-40-10P2WD Serial No. 2236417
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☑ Material	X			
Ladder ☑ Material	X			
Handrail ☑ Material FIBER	X			
Interior Walkway ☑ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER			X	HAS A LEAK
Flow Control Valves BUTTERFLY 18" Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		BRITTLE
Eliminators–Type & Material PVC		X		NEED SOME REPLACED
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment | 1 | 2 | 3 | Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation N/A

Fan Sheave Designation

Motor Sheave Designation

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 320

Seals — X — LEAK

Backlash

Fan Shaft Endplay

Unusual Noises? No ☑ Yes ☐ Action Required

Drive Shaft

Manufacturer MARLEY Material FIBER — X

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" HP7000 -10 Number of Blades 10

Blade Material FIBER — X — SHOWING FIBER

Hub Material CARBON — X

Hub Cover Material FIBER — X

Blade Assembly Hardware S/S — X

Tip Clearance ____" min ____" max — X

Vibration Level

Fan Cylinder Height 14' — X

Mechanical Equipment Support GALV — X

Oil Fill and Drain Line S/S — X

Oil Level Sight Glass — X

Vibration Limit Switch METRIX

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002

Last Lubrication—Date

Grease Used—Type 76 POLYTAC-2

Unusual Noises? No ☑ Yes ☐ Action Required

Unusual Vibration? No ☑ Yes ☐ Action Required

Unusual Heat Build-up? No ☐ Yes ☐ Action Required N/A

Make-up Valve

Other Component

Other Component

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133,400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 4 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected 03-18-19
Inspected by JEFFREY
Inspector
Signature
Model No. F436A-40-10PAWD Serial No. 2236417
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☑ Material	X			
Ladder ☑ Material	X			
Handrail ☑ Material FIBER	√			
Interior Walkway ☑ Material FIBER	X			
Cold Water Basin Material CONCRETE	Y			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY Size	X			
Nozzles–Orifice Diameter 3" Size	Y			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	Y			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		BRITTLE
Eliminators–Type & Material PVC		X		NEEDS SOME REPLACED
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments
Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐				
Belt Drive Unit				
Belt Designation N/A				
Fan Sheave Designation				
Motor Sheave Designation				
Gear Drive Unit				
Manufacturer MARLEY Model 4000 Ratio 15.84 / 1				
Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐				
Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐				
Oil Type Used 76 TURBINE 220				
Seals		X		LEAKS
Backlash	X			
Fan Shaft Endplay				
Unusual Noises? No ☑ Yes ☐ Action Required				
Drive Shaft				
Manufacturer MARLEY Material FIBER	X			
Fan				
Fan Type: Propeller ☑ Blower ☐				
Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐				
Diameter 384" HP7000-10 Number of Blades 10				
Blade Material FIBER		X		SHOWING FIBER
Hub Material CARBON	X			
Hub Cover Material FIBER	X			
Blade Assembly Hardware S/S	X			
Tip Clearance ____" min ____" max	X			
Vibration Level				
Fan Cylinder Height 14'	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S		X		FITTING LEAKS
Oil Level Sight Glass				
Vibration Limit Switch METRIX				
Motor				
Manufacturer TECO WESTINGHOUSE				
Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160				
F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002				
Last Lubrication—Date				
Grease Used—Type 76 POLYTAC-2				
Unusual Noises? No ☑ Yes ☐ Action Required N/A				
Unusual Vibration? No ☑ Yes ☐ Action Required N/A				
Unusual Heat Build-up? No ☑ Yes ☐ Action Required N/A				
Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 153,400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 5 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected 05-19-19
Inspected by JEFFREY
Inspector
Signature
Model No. FXI58A-40-10PAWD Serial No. 223647
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☑ Material	X			
Ladder ☑ Material	X			
Handrail ☑ Material FIBER	X			
Interior Walkway ☑ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY 18" Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		OLD FILL
Eliminators–Type & Material PVC		X		SOME NEEDED
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation N/A				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 320

Seals		X		LEAKS
Backlash	X			
Fan Shaft Endplay				

Unusual Noises? No ☑ Yes ☐ Action Required

Drive Shaft

Manufacturer MARLEY Material FIBER

	X			

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" HP7000 - 10 Number of Blades 10

Blade Material FIBER		X		SHOWING FIBER
Hub Material CARBON	X			
Hub Cover Material FIBER	X			
Blade Assembly Hardware S/S	X			
Tip Clearance 1 " min 2 " max	X			
Vibration Level				
Fan Cylinder Height 14'	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S		X		FITTING LEAKS
Oil Level Sight Glass				
Vibration Limit Switch METRIK				

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002

Last Lubrication—Date

Grease Used—Type 76 POLYTAC. - 2

Unusual Noises? No ☑ Yes ☐ Action Required N/A

Unusual Vibration? No ☑ Yes ☐ Action Required N/A

Unusual Heat Build-up? No ☑ Yes ☐ Action Required N/A

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133,400 HW 89.8 °F °F CW 72.1 °F °F WB 59 °F °F
Cell No. 6 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected 03-24-19
Inspected by JEFFREY
Inspector Signature [signature]
Model No. F488H-40-10PPWD Serial No. 223647
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☐ Counterflow

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material "	X			
Stairway ☑ Material "	X			
Ladder ☑ Material "	X			
Handrail ☑ Material FIBER	X			
Interior Walkway ☑ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		BRITTLE FILL
Eliminators–Type & Material PVC		X		NEEDS REPLACED
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment

1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation N/A

Fan Sheave Designation

Motor Sheave Designation

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☐ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☐ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 320

	1	2	3	
Seals	X			
Backlash	X			
Fan Shaft Endplay				

Unusual Noises? No ☑ Yes ☐ Action Required

Drive Shaft

Manufacturer MARLEY Material FIBER

1	2	3	
X			

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" HP7000 - 10 Number of Blades 10

	1	2	3	
Blade Material		X		FIBER SHOWING - NO END PLUGS
Hub Material	X			
Hub Cover Material	X			
Blade Assembly Hardware	X			
Tip Clearance 1 " min 0 " max	X			
Vibration Level	X			
Fan Cylinder Height 14'	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S	X			
Oil Level Sight Glass	X			
Vibration Limit Switch METRIX				

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002

Last Lubrication—Date

Grease Used—Type 76 FORTAC-2

Unusual Noises? No ☑ Yes ☐ Action Required

Unusual Vibration? No ☑ Yes ☐ Action Required

Unusual Heat Build-up? No ☑ Yes ☐ Action Required

N/A

	1	2	3	
Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCHLF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133,400 HW 89.81 °F CW 72.1 °F WB 59 °F
Cell No. 7 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected 03-24-19
Inspected by JEFFREY
Inspector
Signature
Model No. FH88A-40-10PAVD Serial No. 2236417
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☑ Material	X			
Ladder ☑ Material	X			
Handrail ☑ Material FIBER	X			
Interior Walkway ☑ Material FIBER	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY 18" Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		BRITTLE
Eliminators–Type & Material PVC		X		SOME NEED REPLACING
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment

1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation _____
Fan Sheave Designation _____
Motor Sheave Designation _____

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 320

Seals — 2 | X | | SMALL LEAKS
Backlash
Fan Shaft Endplay

Unusual Noises? No ☑ Yes ☐ Action Required _____

Drive Shaft

Manufacturer MARLEY Material FIBER — 1 | V | | |

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" HP7000 -10 Number of Blades 10

Blade Material FIBER		X	FIBER SHOWING
Hub Material CARBON	X		
Hub Cover Material FIBER	X		
Blade Assembly Hardware S/S	X		
Tip Clearance 1 " min 2 " max	X		
Vibration Level	X		
Fan Cylinder Height 14'	X		
Mechanical Equipment Support GALV	X		
Oil Fill and Drain Line S/S		X	SMALL LEAK
Oil Level Sight Glass			
Vibration Limit Switch METRIX			

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002

Last Lubrication—Date _____

Grease Used—Type 76 POLYTAC-2

Unusual Noises? No ☑ Yes ☐ Action Required _____

Unusual Vibration? No ☑ Yes ☐ Action Required _____

Unusual Heat Build-up? No ☑ Yes ☐ Action Required _____

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location: METCALF
Owner/Company: CALPINE
Company Contact:
Signature:
Owner's Tower Designation:
Tower Manufacturer: MARLEY
Process Served by Tower:
Design Conditions: GPM 133,400 HW 89.8 °F °F CW 72 °F °F WB 59 °F °F
Cell No. 8 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected: 03-26-19
Inspected by: JEFFREY
Inspector Signature: [signature]
Model No. F488A-10-10PAWD Serial No. 223647
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

Item	1	2	3	Comments
Structure				
Casing Material: CORRUGATED	X			
Structural Material: FIBER	X			
Fan Deck Material: "	X			
Stairway ☑ Material: "	X			
Ladder ☑ Material: "	X			
Handrail ☑ Material: FIBER	X			
Interior Walkway ☑ Material: FIBER	X			
Cold Water Basin Material: CONCRETE	X			
Silt, Debris Buildup				
Water Distribution System				
Open Basin System				
Distribution Basin Material: CONCRETE	X			
Inlet Pipe Material: CARBON	X			
Inlet Manifold Material: FIBER	X			
Flow Control Valves: BUTTERFLY 18" Size	X			
Nozzles–Orifice Diameter: 3" Size	X			
Silt, Algae, Debris		X		NEED A LITTLE CLEANING
Spray Type System				
Header Pipe Material: ABS	X			
Branch Pipe Material: PVC	X			
Nozzles–Orifice Diameter: 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material: PVC		X		OLD FILL
Eliminators–Type & Material: PVC		X		SOME NEED REPLACING
Louvers–Type & Material: GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments
Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐				
Belt Drive Unit				
Belt Designation N/A				
Fan Sheave Designation				
Motor Sheave Designation				
Gear Drive Unit				
Manufacturer MARLEY Model 4000 Ratio 15.84 / 1				
Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐				
Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐				
Oil Type Used 76 TURBINE 320				
Seals		X		TOP OF GEAR BOX LEAK
Backlash				
Fan Shaft Endplay				
Unusual Noises? No ☑ Yes ☐ Action Required				
Drive Shaft				
Manufacturer MARLEY Material FIBER	X			
Fan				
Fan Type: Propeller ☑ Blower ☐				
Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☑				
Diameter 384" HP7000-10 Number of Blades 10				
Blade Material FIBER		X		FIBER SHOWING
Hub Material CARBON	X			
Hub Cover Material FIBER	X			
Blade Assembly Hardware S/S	X			
Tip Clearance 1 " min 2 " max	X			
Vibration Level				
Fan Cylinder Height 14'	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S	•	X		FITTING LEAKS
Oil Level Sight Glass				
Vibration Limit Switch METRIX				
Motor				
Manufacturer TECO WESTINGHOUSE				
Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160				
F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002				
Last Lubrication—Date				
Grease Used—Type 76 POLYTAC-2				
Unusual Noises? No ☑ Yes ☐ Action Required				
Unusual Vibration? No ☑ Yes ☐ Action Required				
Unusual Heat Build-up? No ☑ Yes ☐ Action Required				
Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CALPINE
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 153,400 HW 89.81 °F CW 72.1 °F WB 59 °F
Cell No. 9 Number of Fan Cells 10
Date Tower was installed 2005

Date Inspected 03-25-19
Inspected by JEFFREY
Inspector
Signature
Model No. FH68A-40-10PTWD Serial No. 223647
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☐ Material	X			
Ladder ☑ Material	X			
Handrail ☑ Material FIBER	X			
Interior Walkway ☑ Material FIBER	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		NEED CLEANING
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY 18" Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		BRITTLE
Eliminators–Type & Material PVC		X		REPLACE SOME
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment

1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation N/A

Fan Sheave Designation

Motor Sheave Designation

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 320

	1	2	3	Comments
Seals		X		FITTING LEAKS
Backlash	X			
Fan Shaft Endplay				

Unusual Noises? No ☑ Yes ☐ Action Required

Drive Shaft

Manufacturer Material FIBER

1	2	3	
X			

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☑

Diameter 384" HP7000 - 10 Number of Blades 10

	1	2	3	Comments
Blade Material		X		FIBER SHOWING
Hub Material	X			
Hub Cover Material	X			
Blade Assembly Hardware	X			
Tip Clearance 1 " min 1 " max	X			
Vibration Level				
Fan Cylinder Height 14'	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S	X			
Oil Level Sight Glass	X			
Vibration Limit Switch METRIX				

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WT002

Last Lubrication—Date

Grease Used—Type 76 POLYTAC. - 2

Unusual Noises? No ☑ Yes ☐ Action Required NA

Unusual Vibration? No ☑ Yes ☐ Action Required NA

Unusual Heat Build-up? No ☑ Yes ☐ Action Required NA

	1	2	3	Comments
Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company CARRIER
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133,400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 10 Number of Fan Cells 10
Date Tower was installed

Date Inspected 03-25-19
Inspected by JEFFREY
Inspector
Signature
Model No. FXI88A-40-10PIWD Serial No. 223647
Operation: Continuous ☑ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☑ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material	X			
Stairway ☑ Material	X			
Ladder ☑ Material	X			
Handrail ☐ Material FIBER	X			
Interior Walkway ☑ Material FIBER	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		NEED CLEANING
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON	X			
Inlet Manifold Material FIBER	X			
Flow Control Valves BUTTERFLY 16" Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris				
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☑				
Heat Transfer System				
Fill–Type & Material PVC		X		BRITTLE FILL
Eliminators–Type & Material PVC		X		SOME NEED REPLACING
Louvers–Type & Material GALV.				
Biological Fouling				

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☑ Direct Drive ☐

Belt Drive Unit

Belt Designation N/A
Fan Sheave Designation
Motor Sheave Designation

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84 / 1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 320

Seals		X		SMALL LEAKS
Backlash				
Fan Shaft Endplay				

Unusual Noises? No ☑ Yes ☐ Action Required

Drive Shaft

Manufacturer MARLEY Material FIBER

	X			

Fan

Fan Type: Propeller ☑ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" HP7000-10 Number of Blades 10

Blade Material		X		FIBER SHOWING
Hub Material	X			
Hub Cover Material	X			
Blade Assembly Hardware	X			
Tip Clearance 1 " min 2 " max	X			
Vibration Level	X			
Fan Cylinder Height 14'	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S	X			
Oil Level Sight Glass				
Vibration Limit Switch METRIX				

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M# AEH6-WTEO2

Last Lubrication—Date

Grease Used—Type 76 POLYTAC-2

Unusual Noises? No ☑ Yes ☐ Action Required

Unusual Vibration? No ☑ Yes ☐ Action Required

Unusual Heat Build-up? No ☑ Yes ☐ Action Required N/A

Make-up Valve				
Other Component				
Other Component				

Appendix 8

Metcalf Energy Center

Annual Compliance Report 2019

Water Usage Summary

Recycled Water

month	consumption (gal)
January	65,561,452
February	47,529,416
March	23,506,648
April	5,981,756
May	3,777,400
June	26,556,992
July	41,296,332
August	59,630,560
September	57,339,436
October	61,288,128
November	41,033,036
December	66,692,428
Total	**500,193,584**

Potable Water

month	consumption (gal)
January	7,870,456
February	6,652,712
March	4,445,364
April	6,142,576
May	6,534,528
June	9,332,796
July	10,091,268
August	7,691,684
September	7,753,020
October	8,130,760
November	5,784,613
December	5,743,174
Total	**86,172,951**

Metcalf Energy Center

Annual Compliance Report 2019

Water Usage Summary

Condition of Certification S&W-1

Recycled Water	
Cooling Tower for Steam Cycle Cooling	500,193,584
Total Gallons 2019	**500,193,584**
Potable Water	
Condenser Make-Up	31,239,478
Steam Attemperation	29,546,189
Inlet Air Cooling	8,014,219
Domestic	664,539
RO Reject	13,226,664
Filter Backwash	2,645,333
CT Wash Water	426,294
Plant Wash Down	608,991
Total Gallons 2019	**86,172,951**

Appendix 9

METCALF ENERGY CENTER
2019 ANNUAL COMPLIANCE REPORT
WASTE-3

In accordance with **Waste-3**, the Metcalf Energy Facility is required to document actual waste management methods used during the year compared to planned management methods. The facility is currently using the planned waste management methods for all of the waste streams generated within the facility, as listed in the table below.

Waste Stream	Type	Planned	Actual
Non-hazardous Solid Waste	Recyclables	Recycle (Off-site)	Recycle (Off-site)
	Non-Recyclables	Landfill	Landfill
Non-hazardous Liquid Waste	Sanitary Waste	Sewage Treatment Plant	Sewage Treatment Plant
	Process Waste Water	Sewage Treatment Plant	Sewage Treatment Plant
Hazardous Liquid Waste	Used Oil	Recycle (Off-site)	Recycle (Off-site)
	Oily Water	Off-site disposal company	Off-site disposal company
	Corrosive Liquid	Off-site disposal company	Off-site disposal company
Hazardous Solid Waste	Used Oil Filters	Recycle (Off-site)	Recycle (Off-site)
	Oily Rags	Off-site disposal company	Off-site disposal company
	Universal Waste	Recycle (Off-site)	Recycle (Off-site)

Appendix 10

Erik Nichols
9/5/2019

California Energy Commission's Condition of Certification

VISUAL RESOURCES-1

METCALF ENERGY CENTER, LLC
STATUS REPORT REGARDING THE ARCHITECTURAL DESIGN TREATMENT MAINTENANCE

California Energy Commission Condition of Certification Visual Resources – 1 requires the Metcalf Energy Center to submit in its Annual Compliance Report a status report regarding the treatment maintenance of the project structures. The project structures, which are visible to the public, have been painted with CPM-approved and City of San Jose-approved non-reflective colors with a low-gloss finish.

The Metcalf Energy Center Maintenance Department has procedures to address all aspects for maintaining the power plant efficiently. Issues such as coating or painting are captured by staff's surveillance and utilization of checklists. Once an item is deemed in need of maintenance, Plant Management schedule and prioritizes the maintenance through a work order process. Outside contractors are also utilized at Metcalf Energy Center. Plant Management inspects and signs off on the work once it is fully complete.

A copy of the checklists used to survey the architectural screen as well as the other painted surfaces visible from offsite is attached to this summary.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Steam Turbine

	TURBINE / GENERATOR ENCLOSURE	GENERATOR / CONDENSER SOUND WALL
Chalking	1	1
Erosion	1	1
Discoloration	1	1
Fading	1	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Cooling Tower

	SUPERSTRUCTURE
Chalking	1
Erosion/Corrosion	1
Discoloration	1
Fading	1
Loss of Gloss	1
Mildew Defacement	1
Moisture Blushing	1
Orange Peel	1
Wrinkling	1
Chemical Attack	1
High Temperature Attack	1
Mottling	1
Crackling	1
Saponification	1
Disbanding {peel/blister)	1
Crawling (fish eye)	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: HRSG & Gas Turbine 1

	INLET AIR FILTER HOUSE	TURBINE/ GENERATOR	STACK	SCREENING
Chalking	1	1	1	1
Erosion/Corrosion	1	1	1	1
Discoloration	1	1	1	1
FadinQ	1	1	1	1
Loss of Gloss	1	1	1	1
Mildew Defacement	1	1	1	1
Moisture Blushing	1	1	1	1
Orange Peel	1	1	1	1
Wrinkling	1	1	1	1
Chemical Attack	1	1	1	1
High Temperature Attack	1	1	1	1
Mottling	1	1	1	1
Crackling	1	1	1	1
Saponification	1	1	1	1
Disbanding (peel/blister)	1	1	1	1
Crawling (fish eye)	1	1	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: HRSG & Gas Turbine 2

	INLET AIR FILTER HOUSE	TURBINE/ GENERATOR	STACK	SCREENING
Chalking	1	1	1	1
Erosion/Corrosion	1	1	1	1
Discoloration	1	1	1	1
Fading	1	1	1	1
Loss of Gloss	1	1	1	1
Mildew Defacement	1	1	1	1
Moisture Blushing	1	1	1	1
Orange Peel	1	1	1	1
Wrinkling	1	1	1	1
Chemical Attack	1	1	1	1
High Temperature Attack	1	1	1	1
Mottling	1	1	1	1
Crackling	1	1	1	1
Saponification	1	1	1	1
Disbanding (peel/blister)	1	1	1	1
Crawling (fish eye)	1	1	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Water Tanks

	SERVICE/FIRE WATER	DEMINERALIZED WATER
Chalking	1	1
Erosion/Corrosion	1	1
Discoloration	1	1
Fading	1	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Buildings

	ADMINISTRATION	WAREHOUSE
Chalking	1	1
Erosion/Corrosion	1	1
Discoloration	1	1
Fading	1	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL TREATMENT INSPECTION DEFINITIONS

Chalking - To powder from weathering.

Erosion - State of being eroded.

Discoloration - A discolored marking or area; stain.

Fading - To lose brightness or vividness of color.

Loss of Gloss - A paint defect in which a dried film of paint loses gloss, usually over a period of time.

Mildew Defacement - Any of similar coatings or discolorations, caused by fungi, as that which appears when exposed to moisture.

Moisture Blushing - Blushing takes place when moisture goes through condensation on a coated surface during the process of curing. At times, the moisture may be generated from porous substrates. Blushing manifests as milky or white patches, with hazy effects in clear types of coatings. In pigmented coatings, blushing may produce defects in its gloss. Blushing is also known as water spotting.

Orange Peel - Orange peel occurs when paint is applied over an area with oil on the surface. Something as small as a fingerprint can leave enough oil on the surface to show up as orange peel in a completed paint job.

Wrinkling - A temporary slight ridge or furrow on a surface, due to contraction, folding, crushing, or the like.

Chemical Attack – Decomposition of a coating due to chemical exposure.

High Temperature Attack - Decomposition of a coating due to exposure to high temperatures.

Mottling - To color with streaks or blotches of different shades.

Crackling - To form a network of fine cracks on the surface.

Saponification - A reaction in which an ester is heated with an alkali, such as sodium hydroxide, producing a free alcohol and an acid salt.

Disbanding (peel/blister) - To break up or dissolve the coating.

Crawling (fish eye) - To raise or contract because of an imperfect bond with the underlying surface. A surface defect having the form of a spot.

Appendix 11

Metcalf Energy Center Plume Log

Cooling Tower Plumes

Date	Start Time	End time	Total Time	Event	Relative Humidity	Temperature	Supplemental Firing (On/Off)	Plume Abatement In Service (Louvers Open)

No Plume Events in December 2019.

Total Cooling Tower Plume Hours: **0:00**

Remedial Actions To Be Taken

1. The Operator will verify that the plume abatement was in service.
2. The Operator will verify that the louvers were completely opened.
3. Curtail supplementary firing in the HRSG.

Stack Plumes

Date	Start Time	End time	Total Time	Event	Relative Humidity	Temperature	Supplemental Firing (On/Off)	Steam Injection (On/Off)	Economizer By-Pass Valve Position

No Plume Events in December 2019.

Total Stack Plume Hours: **0:00**

Remedial Actions Taken

1. The Operator will operate the economizer bypass valve.
2. Curtail steam injection to the combustion turbine (called PAG steam).
3. Curtail supplementary firing in the HRSG.

Total Combined Plume Hours: **0:00**

Metcalf Energy Center Plume Log

Cooling Tower Plumes

Date	Start Time	End time	Total Time	Event	Relative Humidity	Temperature	Supplemental Firing (On/Off)	Plume Abatement In Service (Louvers Open)
No Plume Events in January 2019.								
No Plume Events in February 2019.								
No Plume Events in March 2019.								
No Plume Events in April 2019.								
No Plume Events in May 2019.								
No Plume Events in June 2019.								
No Plume Events in July 2019.								
No Plume Events in August 2019.								
No Plume Events in September 2019.								
No Plume Events in October 2019.								
No Plume Events in November 2019.								
No Plume Events in December 2019.								
Total Cooling Tower Plume Hours YTD:			**0:00**					

Remedial Actions To Be Taken

1. The Operator will verify that the plume abatement was in service.
2. The Operator will verify that the louvers were completely opened.
3. Curtail supplementary firing in the HRSG.

Stack Plumes

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No Plume Events in December 2019.								
Total Stack Plume Hours YTD:			**0:00**					

Remedial Actions Taken

1. The Operator will operate the economizer bypass valve.
2. Curtail steam injection to the combustion turbine (called PAG steam).
3. Curtail supplementary firing in the HRSG.

Total Combined Year-to-Date **0:00**