DOCKETED

Docket Number:	06-AFC-09C
Project Title:	Colusa Generating Station - Compliance
TN #:	211299
Document Title:	COM-7, 2016 Annual Compliance Report
Description:	2016 Annual Compliance Report (2015 Operating Year) (ACR)
Filer:	Eric Veerkamp
Organization:	Pacific Gas & Electric Company
Submitter Role:	Public Agency
Submission Date:	4/29/2016 1:07:40 PM
Docketed Date:	4/29/2016

Pacific Gas and Electric Company®

Ed Warner
Plant Manager

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Colusa Generating Station
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CGS15-L-011
April 12, 2016

Eric Veerkamp
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814

Reference: Colusa Generating Station

Subject: Colusa Generating Station (06-AFC-9)
Condition of Certification COM-7(BIO-2; HAZ-1; Noise-8; Soil and Water 2,7, 8, 9; TLSN-3; VIS-1&3; Waste-5) – Annual Operating Report

Dear Eric:

Please find the attached pursuant to CGS Conditions of Certification COM-7. A revised Annual Compliance Report for the Colusa Generating Station representing the operational period of January 1, 2015 through December 31, 2015 is being submitted as requested. Within this report you will find the following information;

1. Attachment A: an updated compliance matrix showing the status of all Conditions of Certification (with exception to fully satisfied conditions as they do not need to be included after they have been reported as completed);

2. Attachment B: a summary of the current project operating status with explanations of any significant changes to facility operations during the reporting year;

3. Attachment C: documents required by specific conditions to be submitted along with the Annual Compliance Report. These items include;

4. Attachment D: a cumulative listing of all post-certification changes approved by the California Energy Commission or cleared by the CPM;

5. Attachment E: an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;

6. Attachment F: a listing of filings submitted to, or permits issued by, other governmental agencies during the year;

7. Attachment G: a projection of project compliance activities scheduled during the next year;

8. Attachment H: a listing of the year's additions to the on-site compliance files;

9. Attachment I: an evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to update;

10. Attachment J: a listing of complaints, notices of violations, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters.

Should you have any questions or comments please contact me at (530) 934-9007.

Regards,

Michael Rendon
Senior Environmental Field Specialist

cc: File No. 3.6.3.22
Ed Warner, PG&E
Sarah Gassner, PG&E

Attachment A
Compliance Matrix

COLUSA GENERATING STATION COMPLIANCE MATRIX BASED ON CEC FINAL DECISION

Color code key:	Construction Item	Commissioning Item	Operations Item	Submitted to CEC or Agency	Approved by CEC

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
AQ-01	COMM	All facility operating staff shall be advised of and familiar with these permit conditions.	Provide CPM and APCO with signed records of facility operating staff indicating review of permit conditions and maintain training and records documenting this training at the site.	30 days prior to first fire	PG&E	**On file in Environmental Managers Office**		**Ongoing with New Hires**	
AQ-02	CONS	Right of entry shall be provided at all times.	Project Owner shall make site available to reps of the District, ARB and CEC for inspection, etc.	As required	PG&E			Ongoing	
AQ-03	OPS	In the case of shutdown or restart of air pollution control equipment for necessary scheduled maintenance, notify CPM and APCO of such shutdown 24 hours prior.	Notify the CPM and APCO 24 hours in advance of planned shutdowns for maintenance.	As required	PG&E			Ongoing	
AQ-04	OPS	If any upset or breakdown occurs with permitted equipment that causes excess emissions of air contaminants, the APCO shall be notified with 24 hours or by 9:00am by the following work day.	In addition to phone call, also submit a written statement of full disclosure to the APCO within 72 hours, including date, time, duration, estimated emissions, cause and remedy.	As required	PG&E			Ongoing	
AQ-05	OPS	Fugitive emissions, including dust and odors, shall be controlled at all times such that a nuisance is not created at any point beyond the facility's property lines.	Project Owner shall document any complaints received from the public in the Quarterly Operation Reports (QORs) required by AQ-22 and make site available to APCO, ARB, and CEC representatives.	Quarterly after COD	PG&E			Ongoing	
AQ-07.2	COMM	A source test protocol will be submitted to the APCD for approval.	Submit source test protocol to the APCD for approval by the APCO.	45 days prior to conducting annual source tests	PG&E	Submitted to CEC, EPA, CCAPCD 09/08/10; 9/14/2011		Annual Requirement	
AQ-07.3	COMM	Notify the CPM and District 10 days prior to actual source test.	Notify the CPM and APCD prior to any compliance source test.	10 days prior to conducting any compliance source test	PG&E			Annual Requirement	
AQ-08	COMM	**CONDITION MODIFIED BY CEC ORDER 7-15-09:** Stack gas testing shall be required on an annual basis for NOx, VOC, and CO on the HRSG stacks. The HRSG stacks shall also be tested for SOx and PM10 emissions during the first year and in subsequent years if requested by APCO. The natural gas water bath heater shall be tested for NOx, SOx, VOC, CO, and PM10 during the first year and thereafter only as requested by APCO.	The results and field data colleced during source tests shall be submitted to the CPM and the District within 60 days of testing.	Within 60 days of testing	PG&E			Annual Requirement	
AQ-09	COMM	Annual testing of the HRSG stacks shall include quantification of formaldehyde and NH3 emissions for compliance with permit limits.Verify by continuous recording the ammonia injection rate to the system. The ammonia source test shall be conducted over the expected operating rate of the turbine as set forth in the Condition.	Provide results and field data collected during source tests to CPM and APCD. Submit proposed ammonia injection/emission rate correlation to the APCD and CPM for approval with the ammonia source test report.	Within 60 days of testing	PG&E			Annual Requirement	

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
AQ-10	OPS	**CONDITION MODIFIED BY CEC ORDER 7-15-09:** The gas turbines, duct burners, and natural gas water heater shall be fired exclusively on pipeline quality natural gas.	Submit information on the quality and type of fuel used for the gas turbines, duct burners, and natural gas water bath heater to the CPM/APCO in the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-11	OPS	The average annual sulfur content in the natural gas shall be less than or equal to 0.3 grains per 100 SCF. Conduct monthly testing at the site using approved methods to determine sulfur content. Natural gas testing info from Burney will also be reviewed and provided to the APCD.	Compile the required data on the sulfur content of the natural gas and submit to the CPM and APCO in the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-13a	OPS	All applicable federal standards and test procedures of Subpart KKKK shall be met.	Provide copies of all correspondence with EPA regarding compliance with Subpart KKKK to the APCD and CEC.	Quarterly after COD	PG&E			Ongoing	
AQ-14	OPS	CTGs shall meet a VOC limit of 2.0 ppmvd w/ duct burner firing and 1.38 ppmvd w/o duct firing at 15% O2 averaged over 1 hour. Maximum hourly steady state VOC emission limits for each CTG are 7.2 pounds with duct firing and 3.4 pounds w/o duct firing	Submit to the CPM and APCO CTG source test emissions data demonstrating compliance with this condition as required by condition AQ-8 and provide operating data that establishes ongoing compliance as part of AQ-22.	Within 60 days of testing	PG&E			Ongoing	
AQ-15	OPS	The CTGs shall meet a NOx limit of 2.0 ppmvd @15% O2 averaged over one hour except during commissioning. Maximum hourly steady state NOx emission limits for each CTG are 20.7 pounds with duct firing and 15.3 pounds without duct firing.	Submit to the CPM and APCO CTG continuous emissions data demonstrating compliance with this condition as part of the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-16	OPS	The CTGs shall meet a CO limit of 3.0 ppmvd @15% O2 over a three-hour rolling average except during commissioning. Maximum hourly steady state CO emission limits for each CTG are 18.9 pounds with duct firing and 14.0 pounds without duct firing.	Submit to the CPM and APCO CTG continuous emissions data demonstrating compliance with this condition as part of the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-18	OPS	Ammonia slip shall be limited to 5.0 pmvd @15% O2 over one hour. Formaldehyde emissions will be limited to 0.917 lbs per MMscf of natural gas. Maximum hourly steady state NH3 emission limits for each CTG are 19.2 pounds with duct firing and 14.2 pounds without duct firing.	Submit to the CPM and APCO CTG source test emissions data demonstrating compliance with this condition a part of the QOR. Provide to the CPM and APCO for approval a calculation method to determine the ammonia slip emissions, using source test data, based on the NOx concentration and the ammonia injection rate; this calculation shall be revised for approval as necessary after each source test performed under AQ-9.	Within 60 days of testing	PG&E			Annual Requirement	
AQ-19a	OPS	CEMS shall be installed to sample, analyze, and record NOx, CO, and O2 concentration in the exhaust gas of both HRSG stacks.	Make the site available for inspection by the APCD, ARB, and CEC to verify CEMS is properly installed and operational.	As required	PG&E			Ongoing	
AQ-19b	OPS	CEMS will generate reports of emissions data in accordance with permit requirements and will send alarm signals to the plant DCS control room when emissions levels approach or exceed pre-selected limits.	Submit emissions data generated by the CEMS to the CPM and APCO as part of the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-19c	OPS	RATA tests will be conducted annually to verify performance of the CEMS.	Provide RATA test results along with annual source test report as required under AQ-8.	Annually	PG&E			Ongoing	
AQ-22	OPS	Quarterly reports of CEMS and process data, including startup info, shall be submitted to the District within 30 days after the end of each quarter.	Provide information as part of QORs. (Format will be determined by the District and may include both electronic spreadsheet and hard copy files.)	Quarterly after COD	PG&E			Ongoing	

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
AQ-25	OPS	**CONDITION MODIFIED BY CEC ORDER 7-15-09:** The total emissions from the CTGs and HRSGs shall not exceed those established in the Condition for hourly and daily operations (see emission limits set forth in table in condition).	Submit CTG and HRSG emissions data to CEC CPM and APCO demonstrating compliance with the condition as part of QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-26	OPS	**CONDITION MODIFIED BY CEC ORDER 7-15-09:** The total emissions from the Colusa Power Plant shall not exceed the quarterly and annual combustion emission limits established in the Condition [all numbers have been revised from original Final Decision]	Submit to the CPM and APCO the plant emissions data demonstrating compliance with this condition.	Quarterly after COD	PG&E			Ongoing	
AQ-29	OPS	Total facility emissions of Hazardous Air Pollutants shall not exceed 10 tons/year for any single pollutant except ammonia, formaldehyde, and propylene.		Annually	PG&E			Ongoing	
AQ-SC6	OPS	Submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. Project Owner shall submit to the CPM any modification to any permit proposed by the District of EPA and any revised permit issued by the District of EPA.	Submit any proposed air permit modification to the CPM.	Within 5 working days of its submittal	PG&E			Ongoing	
AQ-SC9	OPS	Submit to the CPM Quarterly Operation Reports following the end of each calendar quarter and containing the info required by Condition AQ-19.	Submit QORs to the CPM and APCO no later than 30 days following the end of each calendar quarter.	Quarterly after COD	PG&E			Ongoing	
AQ-SC11	OPS	**NEW CONDITION PER CEC ORDER 7-15-09:** The wet surface air cooler spray water shall be tested for total dissolved solids and that data shall be used to determine and report the particulate matter emissions from the wet surface air cooler. The wet surface air cooler spray water shall be tested at least once annually during the anticipated summer operation peak period (July through September).	The project owner shall provide the water quality test results and the wet surface air cooler particulate (PMI *0/PM2.5)* emissions estimates to the CPM as part of the fourth quarter's quarterly operational report (AQ-SC9).	At least once annually during summer peak period				Ongoing	
BIO-07	OPS	Incorporate biological mitigation measures into the BRMIMP and permanent or unexpected permanent closure plans.	Address all biological resource related issues associated with facility closure and provide final measures in a biological resources element of the final closure plan.	12 months prior to start of closure activities	PG&E			Ongoing	
COM-01	OPS	Unrestricted Access		Ongoing	PG&E			Ongoing access provided during construction	
COM-02	OPS	Compliance Record--The files are to contain copies of all "as-built" drawings, all documents submitted as verification for conditions, and all other project-related documents.		Ongoing	PG&E			Ongoing	
COM-05	OPS	Compliance Matrix	Submit a compliance matrix with each MCR and also in ACR	Include in MCR and in ACR	PG&E			Ongoing	
COM-07	OPS	Annual Compliance Report	Submit to CPM on an annual basis	Annually	PG&E			Ongoing	

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
COM-09	OPS	Annual Energy Facility Compliance Fee	Submit annual compliance fee to CEC	During life of project	PG&E			Ongoing	
COM-10	OPS	Reporting of Complaints, Notices and Citations	Report to the CPM all notices, complaints, and citations within 10 days of receipt.	As required	PG&E			Ongoing	
COM-11	OPS	Planned Facility Closure	Submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure	12 months prior to start of closure activities	PG&E				
COM-13	OPS	Unplanned Permanent Facility Closure	The on-site contingency plan required for unplanned temporary closure shall also cover unplanned permanent facility closure. All of the requirements specified for unplanned temporary closure shall also apply to unplanned permanent closure.	Within 90 days of permanent closure	PG&E	9/29/2010	CGS10-L-0111	Approved via email 10/15/10	
COM-14	CONS	Post-Certification Changes to the Decision		As required	PG&E			Amendments are discussed in MCR	
CUL-04	CONS	Prepare the Cultural Resources Report (CRR) in ARMR format. Include all information specified in Condition.	Submit CRR within 90 days after completion of ground disturbance (including landscaping).	Within 90 days after completion of landscaping	PG&E	7/28/2011	CGS11-L-0026	Approved 4/9/13	
GEN-01c	OPS	Once the certificate of occupancy has been issued, inform the CPM of any construction, addition, alterations, moving, demolition, repair, or maintenance to be performed on any portions of the completed facility for the purpose of complying with the above stated codes.	Submit required info to the CPM.	At least 30 days prior to such work	PG&E				
GEN-08	CONS	Obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The Project Owner shall request the CBO to inspect the completed structure and review the submitted documents. The Project Owner shall retain one set of approved engineering plans, specifications, and calculations at the project site or other accessible location during the operation of the project.	Submit to the CBO a written notice that the completed work is ready for inspection and a signed statement that the work conforms to the final approved plans.	Within 15 days of completion of any work	PG&E/CBO				
HAZ-01	OPS	Do not use any hazardous material in any quantity or strength not listed in Appendix C unless approved in advance by the CEC CPM.	Report to the CPM a list of hazardous materials and storage quantities contained at the facility	Include in Annual Compliance Report	PG&E			Ongoing	
NOISE-02	OPS	Throughout the construction and operation of the project, document, investigate, evaluate, and attempt to resolve all project-related noise complaints. Noise Complaint Resolution process will be used.	File a Noise Complaint Resolution Form with the City and the CPM documenting resolution of the compliant.	Within 5 days of receiving a noise compliant	PG&E				
NOISE-08	OPS	In the event legitimate noise complaints are made by owners or occupants at the two residences locate at ML1, ML2, or RC1 during operation of the CGS, the Project Owner shall offer to pay for the following noise attenuating upgrades (see list in Condition).	Upgrades shall be installed (unless impossible due to circumstances beyond Project Owner's control) within six months of the receipt of the compliance. Provide documentation certifying the items listed in the Condition.	As required	PG&E			Ongoing	

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
PAL-06	OPS	Through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during project construction .	Maintain in compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. Maintain these files for a period of three years after completion and approval of the CPM-approved Paleontological Resources Report.	As required					
SOIL & WATER-04b	OPS	Notify the CEC of any violations of the agreement requirements, limits or amounts.	Provide copies of any NOVs from the GCID. Fully explain corrective actions in next MCR.	Within 10 days of NOV	PG&E			Ongoing	
SOIL & WATER-07b	OPS	Submit any required monitoring information to the CPM in the annual compliance report.	Submit requested information.	Include in ACR	PG&E			Ongoing	
SOIL & WATER-07c	OPS	Submit copies of an NOVs to the CPM.	Submit requested info to CPM.	Within 10 days of receipt of NOV; explain correction actions in ACR	PG&E			Ongoing	
SOIL & WATER-08b	OPS	Prepare an annual water use summary which includes the monthly range and monthly average of daily raw water usage in gpd and total water used by the project on a monthly and annual basis in acre-feet. Potable water use on the site shall be recorded on a monthly basis. (See additional details for annual water use summary in Condition)	Submit requested info to CPM.	Annually	PG&E			Ongoing	
SOIL & WATER-09c	OPS	Monitor the waste water system following the general standards adopted in the SWRCB's onsite wastewater treatment system regs or the procedures outlined in the CPM-approved O&M manual. Provide testing results	Provide requested into to CPM.	Include in ACR	PG&E			Ongoing	
SOIL & WATER-11		The Project Owner shall provide two signed copies of the Water Agreement issued by GCID prior to delivery or use of water from the GCID Canal	Submit two signed copies to the CPM	10 days prior to use.	PG&E	10/27/2014		Closed	
TLSN-03	OPS	Take reasonable steps to resolve any complaints of interference with radio or TV signals from operation of the proposed lines.	Provide reports of line-related complaints along with related mitigation measures in the annual report for the first five year.	Include in ACR	PG&E			Ongoing	
VIS-01b	OPS	Notify the CPM that the surface treatment of all listed structures and buildings has been completed and is ready for inspection and submit electronic color photographs taken from the same KOPs	Set up an inspection appointment.	Within 90 days of start of commercial ops	PG&E	3/24/2011	CGS11-L-0014	4/11/2011	
VIS-02b	COMM	Notify the CPM that the lighting has been completed and is ready for inspection.	Set up an inspection appointment.	Prior to start of commercial operation	Gemma	9/19/2011	CGS11-L-0036	Approved 9/29/2011	
VIS-02c	OPS	Notify the CPM of any complaints re: lighting.	Submit a complaint resolution form to the CPM record each lighting complaint and document resolution of that complaint.	Within 48 hours after receiving a complaint	PG&E			Ongoing	

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
VIS-03	CONS	Provide landscaping that reduces the visibility of the power plant structures and complies with local policies and ordinances. Trees shall be strategically placed along the southern, eastern, and northern facility boundaries as appropriate and of sufficient density and height to screen the plant structures to the greatest feasible extent within the shortest feasible time.	Prepare and submit a landscaping plan (see Condition for details on info to include in plan) to the CPM for review and approval and to the County for review and comment.Notify the CPM and County within 7 days after completing installation of landscaping. Report on landscape maintenance activities in ACR.	At least 90 days prior to installation of landscaping -	PG&E			Submitted 8/25/2010 Approved 9/14/2010 Ongoing for Annual Report	
WASTE-04	CONS	Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the Project Owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.	Notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.	As required	PG&E			Ongoing	
WASTE-05b	OPS	Prepare an Operations Waste Management Plan for all wastes generated during construction of the facility.	Submit plan to the CPM for review and approval. See Final Decision WASTE-5 for plan requirements.	Provide training sign-in sheets in first MCR Report in Annual Report	PG&E	9/23/2010	CGS10-L-0109	Approved on 10/18/10	

Attachment B
Project Operating Status Summary

Per Com-7 Item 2 we are to provide; "A Summary of the current project operating status and an explanation of any significant changes to the facility operations during the year"

There were no other significant changes to the facility and the plant is operating normally.

Attachment C
Accompanying Documents

CEC 2014 Annual Compliance Report		
Reporting Conditions; Per COM-7 item 3		
Condition of Certification	Reporting	
BIO 2	Designated Biologist Record Summaries	See Attached Documentation, Appendix 1
HAZ 1	List of Chemicals on site	See Attached Documentation, Appendix 2
Noise 8	Noise Complaints	See Attached Documentation, Appendix 3
S&W 2	SWPPP Monitoring and Maintenance Activities	See Attached Documentation, Appendix 4
S&W 7	GCID Monitoring Requirements/Violations	See Attached Documentation, Appendix 5
S&W 8	Annual Water Use	See Attached Documentation, Appendix 6
S&W 9	Septic Tank	See Attached Documentation, Appendix 7
TLSN 3	Electro Magnetic interference Complaints	See Attached Documentation, Appendix 8
VIS 1	Surface Treatment Report	See Attached Documentation, Appendix 9
VIS 3	Landscape Report	See Attached Documentation, Appendix 10
Waste 5	Waste Management Plan	See Attached Documentation, Appendix 11

Appendix 1, BIO-2

TECHNICAL MEMORANDUM

Colusa Generating Station, California Energy Commission Annual Compliance Report, Biology Section, 2015

PREPARED FOR:	PG&E/Michael Rendon/Colusa Generating Station, Compliance Manager
COPY TO:	Jerry Salamy/CH2M Project Manager
PREPARED BY:	Rick Crowe/CH2M Colusa Generating Station CEC Designated Biologist
DATE:	January 27, 2016
PROJECT NUMBER:	660517.01.BI

Introduction

This Colusa Generating Station (CGS) Biological Annual Compliance Report, 2015 fulfills the California Energy Commission (CEC) requirement in the Verification for Condition of Certification (COC) BIO-2 Sub-section 8. "Designated Biologist Duties, BIO-2, Sub-section 8; The duties of the Designated Biologist are to maintain written records of the tasks specified above and those included in the Biological Resources Mitigation Implementation and Monitoring Plan, (BRMIMP). Summaries of these records shall be submitted in the monthly compliance report and the annual compliance report.

The CGS project was designed to avoid biological resources to the greatest extent feasible through development of mitigation and protection measures with informal consultation and discussions with the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), California Department of Fish and Game (CDFG), Central Valley Regional Water Quality Control Board (CVRWQCB), and the CEC. The CEC COCs for the CGS project required that Pacific Gas and Electric Company (PG&E) appoint a designated biologist to supervise compliance of mitigation measures as outlined in the CEC-approved BRMIMP during all phases of construction and operation. All construction COCs were implemented successfully during all phases of construction and continue to be implemented during operation and maintenance of the CGS facility.

Project Location

The Colusa Generating Station (CGS) site is located approximately 4 miles west of Interstate 5, 14 miles north of the farming community of Williams, and 72 miles north of Sacramento, adjacent to Pacific Gas and Electric Company's (PG&E) Delevan Natural Gas Compressor Station on Delevan Road in Colusa County, California. The power plant site is within the Holthouse Ranch and is within the eastern half of Section 35, Township 18 North, Range 4 West, Mount Diablo Base and Meridian (Figure 1).

Monitored Activities and Wildlife Interaction

Since completion of the CGS project PG&E has followed the CEC COC s and had the Designated Biologist perform pre-disturbance surveys when necessary and on numerous occasions called on the Designated Biologist to capture and relocate wildlife that were in harm's way or wildlife that could harm facility employees.

TECHNICAL MEMORANDUM

Colusa Generating Station, California Energy Commission Annual Compliance Report, Biology Section, 2015

PREPARED FOR:	PG&E/Michael Rendon/Colusa Generating Station, Compliance Manager
COPY TO:	Jerry Salamy/CH2M Project Manager
PREPARED BY:	Rick Crowe/CH2M Colusa Generating Station CEC Designated Biologist
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Monitored Activities and Wildlife Interaction

Since completion of the CGS project PG&E has followed the CEC COC s and had the Designated Biologist perform pre-disturbance surveys when necessary and on numerous occasions called on the Designated Biologist to capture and relocate wildlife that were in harm's way or wildlife that could harm facility employees.

The CEC Designated Biologist Richard Crowe was placed on disability due to illness from June 15, 2015 to September 20, 2015, during that time the CEC approved Biological Monitor Victor Leighton took over Designated Biologist duties. Notes from both biologists are combined in this report

The CGS PG&E Compliance Manager Charles Price left the position in May of 2015 and was replaced by PG&E Senior Environmental Field Specialist Michael Rendon during May of 2015.

All new employees and contract workers working at the CGS facility received Worker Environmental Awareness Training (WEAP) via video as well as lecture and daily tailgate training with the Designated Biologist (DB) or the Compliance Manager. The DB remained on-call throughout the 2015 year.

The on-call monitoring and compliance efforts for the year 2015 are documented in chronological order below and within Appendix A, Site Photos; 1 through 46.

February 25th, the DB received a call from Tim the CGS Plant Operator concerning the observation of a western diamond back rattlesnake (*Crotalis viridis*), Tim stated that the snake was observed crawling into a piece of machinery. Tim further stated that when the snake was observed again that they would contact the DB. Follow-up calls indicated that the snake was not observed again.

March 9th, the DB received an e-mail and photo from CGS Plant Manager Ed Warner concerning his observation of a pair of killdeer's (*Charadrius vociferus*) displaying nesting behavior near the front entrance gate. Mr. Warner stated that staff had been made aware of the birds so they would not be disturbed, Photo 1.

March 10th, the DB was on site to check on the reported nesting killdeer near the entrance gate. The DB searched the entire area however, no eggs or adult killdeer were observed during this visit.

March 11th, the DB received a request from the CGS Compliance Manager Charles Price requesting a pre-disturbance survey to the triangle area just east of the CGS entrance. Mr. Price stated that PG&E wanted to mow they area for fire suppression. A site visit was scheduled for the next day.

March 12th, the DB and the Biological Monitor Victor Leighton (BM) walked meandering transects of the triangle area just east of the CGS entrance gate searching for nesting birds and denning wildlife. The area was vegetated with mustard grass and star thistle to a height of +/- 2-feet, Photo 2. The meandering transects allowed the biologists to cover 100 percent of the area. There were several abandoned red-winged blackbird (*Agelaius phoeniceus*) nests observed which were attached to the short vegetation, however no eggs or young were observed. During the pre-disturbance survey the Biologists observed a western diamond back rattlesnake crossing the CGS entrance road just east of the triangle area. Since the snake was leaving the proposed mowing area it was allowed to leave the area without capture, Photo 3. The triangle area was clear of nesting and or denning wildlife, CGS staff was alerted to the fact that the area was cleared to mow. Also, while on site the DB received a call from a CGS electrical maintenance worked concerning the observation of another western diamond back rattlesnake near the raw water pump skid at the Glen-Colusa Canal. The DB safely captured the snake and released it off site, Photo 4.

March 18th, the DB and BM were on site to perform rattlesnake surveys of the CGS plant, water intake areas and entrance road. At the request of the CGS Plant Manager and CGS Compliance Manager these types of surveys would be ongoing once or twice a week until the rash of rattlesnake sightings and interactions have subsided. No rattle snakes were observed on this survey occasion.

March 23rd, the BM walked and surveyed the CGS plant site, water intake areas and the entrance road. No rattlesnake were observed during this survey.

March 27th, the BM was on site surveying for rattlesnakes, during this survey the BM safely captured and relocated off site an adult western diamond back rattlesnake, Photo 5. The snake was observed within the CGS facility in the northwest portion of the site.

March 30th, the DB and BM were on site to conduct the bi-weekly rattlesnake surveys, none were observed during this survey.

April 3rd, the DB and BM were on site to conduct the bi-weekly rattlesnake surveys, no rattlesnakes were observed. A large gopher snake (*Pituophis melanoleucus*) was observed within the CGS plant that was safely caught and relocated off site, Photo 6.

April 10th, the DB and BM were on site to assemble and place 8-snake live traps throughout the CGS facility, Photos 7 and 8. The snake traps were supplied with a cardboard cover so that any trapped animals could stay out of the direct sun until released. While on site the DB and BM conducted the bi-weekly rattlesnake survey, no rattlesnakes were observed. During the survey a killdeer was observed just outside the main entrance gate the killdeer displayed and appeared agitated however, no eggs or nest substrate was observed, Photo 9. Additionally, a large gopher snake was observed near the CGS entrance gate, the snake was captured and safely relocated off site, Photo 10.

April 13th, the DB and BM were on site to conduct the bi-weekly rattlesnake surveys and snake trap check. A western fence lizard (*Sceloporus occidentalis*) was observed and safely released from one of the snake traps, Photo 11. Another snake trap had captured a field mouse (*Mus musculus*) unfortunately the mouse had died while in the trap, Photo 12. Another snake trap held a pacific chorus tree frog (*Pseudacris regilla*) which was released un-harmed, Photo 14. A dead barn owl (*Tyto alba*) was observed along the western most CGS perimeter fence, there were no obvious signs of trauma, Photo 13. No rattlesnakes were observed during this survey.

April 16th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. The DB observed and safely released an alligator lizard (*Elgaria coerulea*) from one of the snake traps, Photo 15. No rattlesnakes were observed during this survey.

April 20th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. While surveying the DB observed a dead juvenile European starling (*Sturnus vulgaris*), on the ground next to HRZG 1, Photo 16. The juvenile starling appeared to have fallen out of a nest. The DB observed 3 western fence lizards within one snake trap all 3 lizards were safely released, Photo 17. No rattlesnakes were observed during this survey.

April 21st, the DB received a call from the CGS plant operator concerning the observation of a western diamond back rattlesnake observed near the plant entrance gate. The DB traveled to the site and safely captured and relocated the snake off site, Photo 18.

April 22nd, the DB received a call from the CGS Compliance Manager regarding the observation of a western terrestrial garter snake (*Thamnophis elegans*) within one of the snake traps, Photo 19. The Compliance Manager safely released the snake off site, Photo 20.

April 28th, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes were observed during this survey.

May 6th, the BM on was on site to conduct the bi-weekly rattlesnake survey and snake trap check. The BM safely captured and relocated 2 western diamond back rattlesnakes. One was observed and captured near the Glen-Colusa water intake structure, the other observed and captured on site, Photos 21 and 22. One western fence lizard was observed and released from the snake traps.

May 8thand 11th, the DB and BM were on site to conduct pre-disturbance surveys for mowing and fire suppression around the CGS site. Areas surveyed consisted of the triangle area, and areas east, west and south of the plant. These areas were surveyed for nesting birds and denning animals. Some of the observations consisted of; a mourning dove (*Zenaida macroura*) feather pile, abandoned red-winged blackbird nests and abandoned duck nests, Photos 23 and 24. No nesting or denning wildlife were observed during the pre-disturbance survey. Additionally, The DB and BM checked all snake traps on site as well as the CGS site, there were no rattlesnakes observed.

May 15th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes were observed during this survey.

May 19th, the DB was on site to monitor the mowing of the fields surrounding the CGS site in case wildlife was encountered during mowing, Photos 25, 26 and 27. While on site the DB received a call from one of the on-site electrical workers concerning the observation of a bird nest with eggs in a man lift that they were using, Photo 28 and 29. The DB determined that the bird nest was an abandoned Eurasian dove or collared dove (*Streptopelia decaocto*) nest. The eggs were cold to the touch and no adults were observed in the area so the DB placed the nest on an air conditioning unit next to where the man lift had been parked, Photo 30. Also, while on site the DB received a call from one of the contract workers performing the mowing concerning the observation of a green racer (*Coluber constrictor*) during the mowing of the southern portion of the site. The DB lifted a piece of wood in the field and safely captured and released the racer out of harm's way, no photo taken.

May 20th, the DB received a call from CGS Maintenance Manager Dave Engelman requesting that the DB perform a pre-disturbance survey of the water line road to the Tehama-Colusa Canal for fire suppression and safety. The DB walked meandering transects of the entire length of the waterline road, several duck eggs were observed cracked and open no other nests or denning wildlife was observed, Photo 31 and 32.

May 22nd, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes were observed during this survey. The DB checked the Eurasian collared dove nest that was placed on an air conditioner and found that the eggs had been predated, the nest was taken down and disposed of, no photos taken.

May 26th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. While surveying the Glen-Colusa Canal water intake area the DB observed, captured and safely released a +/- 3-foot western diamond back rattlesnake off site, Photo 33. No rattlesnakes were observed during this survey.

May 29th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. While surveying the Glen-Colusa Canal water intake area the DB observed, captured and safely released a +/- 2-foot western diamond back rattlesnake off site, Photo 34. No rattlesnakes were observed during this survey.

June 1st, the DB received a call from the CGS Compliance Manager Michael Rendon concerning the observation of several small dead birds around the CGS facility. The DB traveled to the site and surveyed all areas around the plant. The DB observed, picked up and disposed of 38 dead bird carcasses the majority of which were immature juvenile birds that had fallen out of nests that are in the CGS piping and pipe supports throughout the site, Photo 35. The DB also observed several adult bird carcasses under the ACC unit, the majority of these birds had been decapitated by what appears to be owls. Numerous barn owl and Great horned owl (*Bubo virginianus*) pellets were observed under the ACC unit as well.

June 5th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes were observed during this survey. The DB did observe a Western kingbird nest (*Tyrannus verticalis*) in some of the pipe supports for the water treatment building, Photo 36.

June 8th, the DB received a call from CGS Maintenance Manager Dave Engelman concerning the possible observation of a hawk nest on the northwest corner of the ACC unit. The DB informed Mr. Engelman that he would be on site on June 11th to conduct the bi-weekly rattlesnake survey and that he would check on the nesting birds while on site.

June 11th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. A single +/- 3-foot western diamond back rattlesnake was observed and captured near the water intake

structure at the Glen-Colusa Canal water intake area, Photo 39.The DB also checked on the nest in the northwest corner of the ACC unit and identified a family of common ravens (*Corvus corax*) nesting on the ACC, Photos 37 and 38. Since the nest was out of the way the CGS staff was alerted to the nest and instructed to keep clear of the area.

June 15th, the DB began medical leave and the BM took over all duties of the on-call and rattlesnake surveys. The BM was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes were observed during this survey.

June 19th, 22nd, 25th and 29th, The BM was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes were observed during these survey dates.

July 6th, 10th, 13th, 17th, 20th and 24th, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap checks. No rattlesnakes or other wildlife were observed during these survey dates.

July 27th, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap check. The BM observed, captured and safely relocated a western diamond back rattlesnake at the Glen-Colusa Canal water intake area, Photo 40.

July 31st, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes were observed during these survey dates.

August 4th, 7th, 10th and 13th, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap checks. No rattlesnakes or other wildlife were observed during these survey dates.

August 15th, the BM received a call from the CGS Control Room requesting that he come to the site and capture and relocate a western diamond back rattlesnake. The BM safely captured and released off site a +/- 3-foot rattlesnake that was observed in front of the CGS Control Room, Photo 41.

August 17th, 21st, 28th, and 31st, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap checks. No rattlesnakes or other wildlife were observed during these survey dates.

September 4th and 8th, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap checks. No rattlesnakes or other wildlife were observed during these survey dates.

September 9th, the BM received a call from the CGS Control Room reporting the observation of a western diamond back rattlesnake sighting within the CGS water treatment building. The BM safely captured the juvenile snake (Photo 42 and 43) and then observed a second rattlesnake dead just outside the water treatment building, Photo 44. The second rattlesnake had a distended abdomen but the exact cause of death is unknown. The live rattlesnake was safely released off site.

September 11th, 14th, 18th, the BM was on site to conduct the bi-weekly rattlesnake survey and snake trap checks. No rattlesnakes or other wildlife were observed during these survey dates.

September 21st, the DB was back from medical leave and assumed all DB duties again. The DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes or other wildlife were observed during this survey.

September 25th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnake were observed and all traps were empty. While on site the CGS Maintenance Supervisor Dave Engelman asked the DB to check on a nest that was observed on the landing of the new fin fan cooler. Mr. Engelman stated that the nest had been observed a few days ago but that there had not been any sign of adult birds in the area. The DB identified the bird nest as a Eurasian collared dove nest with 2 eggs in it, the eggs were cold to the touch and there was no sign of adults in the area, Photo 45. The DB checked back on the nest throughout the day but did not observe any adult birds in the area. The DB pulled the nest and disposed of it, the DB notified CGS staff that the nest had been removed and that maintenance activities in the area could resume.

September 28th, the DB was on site to conduct the bi-weekly rattlesnake survey and snake trap check. No rattlesnakes or other wildlife were observed during this survey.

October 2nd, 5th, 9th, 12th, 16th, 19th, 22nd 26th and 30th, the DB was on site to conduct the bi-weekly rattlesnake surveys and snake trap checks. No rattlesnakes or other wildlife were observed during these surveys.

November 3rd, 6th, and 10th, the DB was on site to conduct the bi-weekly rattlesnake surveys and snake trap checks. No rattlesnakes or other wildlife were observed during these surveys.

November 13th, the DB was on site to conduct the bi-weekly rattlesnake surveys and snake trap checks. The DB observed a western fence lizard in one of the snake traps, the lizard was released unharmed, Photo 46. No rattlesnakes or other wildlife were observed during these surveys.

November 16th and 23rd, the DB was on site to conduct the bi-weekly rattlesnake surveys and snake trap checks. All traps were empty. On the 23rd the DB removed all of the snake traps from the CGS grounds and the rattlesnake surveys were called off for the remainder of the year since no rattlesnake had been observed since mid-September.

November 30th, the DB received a call from the CGS Compliance Manager Michael Rendon concerning the observation of a killdeer made by one of the workers that were changing cooling fan blades in the ACC unit. The worker stated that the bird appeared to be trapped within the ACC unit. The DB stated that the bird should be left alone so it could calm down and find its way out. Follow-up conversations with Mr. Rendon and the worker showed this to be the case.

Conclusion

The Colusa Generating Station was in compliance with all biological mitigation and protection measures covered in the BRMIMP that are applicable to this operating facility during the year 2015.

Appendix A
Site Photos

Photo 1, photo of a pair of killdeer as observed near entrance gate, 3/9/15.

Photo 2, triangle area as observed prior to mowing, 3/12/15.

Photo 3, western diamond back rattlesnake as observed along entrance road to CGS facility, 3/12/15.

Photo 4, of western diamond back rattlesnake as observed adjacent to the Glen-Colusa Canal prior to capture and safe release off site, 3/12/15.

Photo 5, western diamond back rattlesnake as observed within CGS facility and prior to capture and safe release off site, 3/27/15.

Photo 6, of gopher snake as observed on site and prior to capture and safe release off site, 4/3/15.

Photo 7, of live snake trap placed at 8 different locations throughout the CGS facility, 4/10/15.

Photo 8, of typical placement of snake traps near plant access points, 4/10/15.

Photo 9, of female killdeer displaying just outside of CGS eastern perimeter fence, 4/10/15.

Photo 10, of gopher snake as observed near CGS entrance gate and prior to capture and safe release off site, 4/10/15.

Photo 11, of western fence lizard prior to release from snake trap, 4/13/15.

Photo 12, of dead field mouse as observed within snake trap, 4/13/15.

Photo 13, of juvenile barn owl as observed adjacent to the western CGS perimeter fence, 4/13/15.

Photo 14, of pacific chorus tree frog and western fence lizard prior to safe release off site, 4/13/15.

Photo 15, of alligator lizard prior to safe release from snake trap, 4/16/15.

Photo 16, juvenile European starling as observed on ground near HRZG stack, 4/20/15.

Photo 17, three western fence lizards prior to safe release from snake trap, 4/20/15.

Photo 18, of western diamond back rattlesnake as observed on CGS entrance road near front gate, 4/21/15.

Photo 19, of terrestrial garter snake as observed within snake trap on site, 4-22-15.

Photo 20, of terrestrial garter snake being released from onsite snake trap, 4-22-15.

Photo 21, of western diamond back rattlesnake being captured near water intake, 5-6-15.

Photo 22, of western diamond back rattlesnake observed near water intake at Glen-Colusa Canal prior to safe capture and release, 5-6-15.

Photo 23, mourning dove feather pile as observed during pre-disturbance mowing survey, 5-11-15.

Photo 24, typical appearance of old red-winged blackbird nest as observed during pre-disturbance mowing survey, 5-11-15.

Photo 25, contractors mowing southernmost portion of CGS site for fire prevention, 5-19-15.

Photo 26, triangle area after contractor mowing for fire protection, 5-19-15.

Photo 27, eastern side of CGS site after contractor mowing for fire protection, 5-19-15.

Photo 28, of European collared-dove nest as observed on a man lift within the CGS plant site, 5-19-15.

Photo 29, close-up of European collared-dove nest with a brown-headed cowbird egg, 5-19-15.

Photo 30, of European collared-dove nest relocation area, 5-19-15.

Photo 31, of CGS water line road prior to mowing and during pre-disturbance survey, 5-20-15.

Photo 32, of broken duck egg as observed during pre-disturbance survey, 5-20-15.

Photo 33, of western diamond back rattlesnake after capture and prior to safe release off site, 5-26-15.

Photo 34, of western diamond back rattlesnake during capture near the Glen-Colusa Canal water intake area, 5-29-15.

Photo 35, of typical nest situation in CGS piping, this was observed throughout the CGS site, 6-1-15.

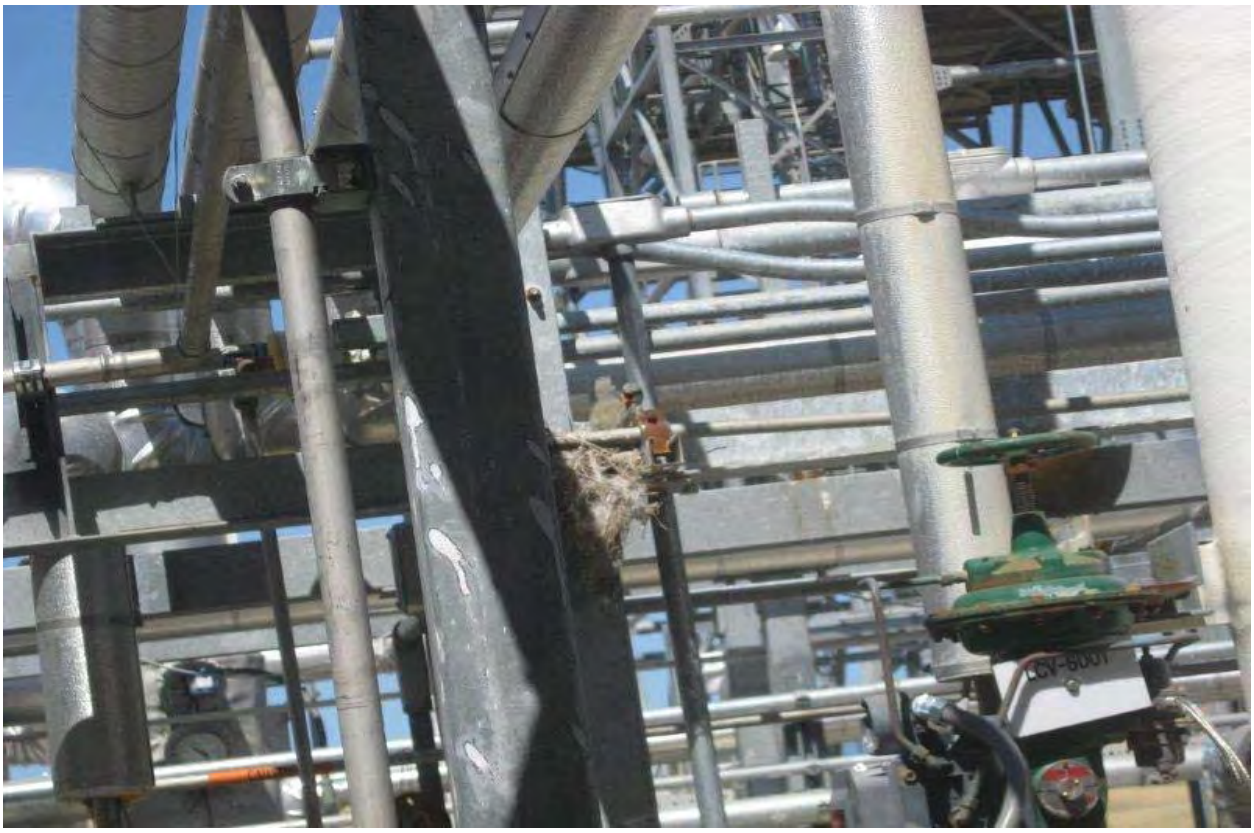

Photo 36, Western kingbird nest as observed just outside of water treatment building, 6-5-15.

Photo 37, of raven nest as observed within the northwest corner of the CGS ACC unit, 6-11-15.

Photo 38, of juvenile ravens outside of nest on ACC, 6-11-15.

Photo 39, western diamond back rattlesnake after capture and prior to release off site, 6-11-15.

Photo 40, western diamond back rattlesnake after capture and prior to release offsite 7-27-15.

Photo 41, western diamond back rattlesnake prior to release off site, 8-15-15.

Photo 42, western diamond back rattlesnake prior to release off site, 9-9-15.

Photo 43, western diamond back rattlesnake prior to capture and relocation, 9-9-15.

Photo 44, western diamond back rattlesnake observed dead near HRZG 1, 9-9-15.

Photo 45, Eurasian dove nest on fin fan cooler, 9-25-15.

Photo 46, released western fence lizard, 11-13-15.

Appendix 2, HAZ-1

Hazardous Materials

Appendix C

Colusa Generating Station Onsite Inventory of Hazardous Materials

Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
Product #001A0382	Shell Omala Oil HD 220	gear box/ACC oil	Air Cooled Condenser - Gear Box (E13)	ACC Gear Box	12 gal	gallons	42	504 gal	504	504	365	504.0
	Carbon dioxide, Liquid	Carbon dioxide, Liquid	Carbon Dioxide Bottle Storage Rack at Combustion Turbine-A (Site Feature #59)	Tank	12,000 lb	pounds	1	12,000 lb	12,000	9,000	365	9,000 lb onsite daily
	Carbon dioxide, Liquid	Carbon dioxide, Liquid	Carbon Dioxide Bottle Storage Rack at Combustion Turbine-B (Site Feature #59)	Tank	12,000 lb	pounds	1	12,000 lb	12,000	9,000		9,000 lb onsite daily
	Carbon dioxide, Liquid	Carbon dioxide, Liquid	Carbon Dioxide Bottle Storage Rack at Steam Turbine (Site Feature #59)	Tank	12,000 lb	pounds	1	12,000 lb	12,000	9,000		9,000 lb onsite daily
Nalco TRAC107 PLUS	PSO (1.0 - 5.0%)	Closed Cooling Corrosion/Scale Inhibitor	Closed Cooling Chemical Feed Tank (Site Feature #106)	55-gal Metal or Plastic Drum .56	55 gal	gallons	4	220 gal	220	165	365	1,010
MSDS #778983	Turbine Oil	lube oil	Combustion Turbine-A (E1)	CT-A Lube Oil System (E1)	6,150 gal	gallons	1	6,150 gal	6,150	4,613	365	33,671 lb onsite daily
	Hydrogen	Hydrogen / Coolant	Combustion Turbine-A HRSG (G2)	Generator	10,617 cu ft	cubic feet	1	10,617 cu ft	10,617	7,963	365	
MSDS #778984	Turbine Oil	lube oil	Combustion Turbine-B (E2)	CT-B Lube Oil System (E2)	6,150 gal	gallons	1	6,150 gal	6,150	4,613	365	33,671 lb onsite daily
	Hydrogen	Hydrogen / Coolant	Combustion Turbine-B HRSG (G2)	Generator	10,617 cu ft	cubic feet	1	10,617 cu ft	10,617	7,963	365	
	Oxygen Gas	Oxygen Gas	Continuous Emissions Monitor System Shelters (G4)	Cylinders	200 cu ft	cubic feet	6 (3 per CEMS shelter)	1,200 cu ft	1200	900	365	
	Nitrogen oxide / Nitrogen dioxide (Low Range)	Nitrogen oxide / Nitrogen dioxide (Low Range)	Continuous Emissions Monitor System Shelters (G4)	Cylinders	200 cu ft / 0.062 lb	cubic feet / pounds	6 (3 per CEMS shelter)	1200 cu ft / 0.374 lb	1200	900 cu ft / 0.281 lb	365	0.281 lb onsite daily
	Nitrogen oxide / Nitrogen dioxide (High Range)	Nitrogen oxide / Nitrogen dioxide (High Range)	Continuous Emissions Monitor System Shelters (G4)	Cylinders	200 cu ft / 0.062 lb	cubic feet / pounds	6 (3 per CEMS shelter)	1200 cu ft / 0.374 lb	1200	900 cu ft / 0.281 lb	365	0.281 lb onsite daily
	Carbon monoxide (Low Range)	Carbon monoxide (Low Range)	Continuous Emissions Monitor System Shelters (G4)	Cylinders	200 cu ft	cubic feet	6 (3 per CEMS shelter)	1200 cu ft	1,200	900	365	
	Carbon monoxide (High Range)	Carbon monoxide (High Range)	Continuous Emissions Monitor System Shelters (G4)	Cylinders	200 cu ft	cubic feet	6 (3 per CEMS shelter)	1200 cubic feet	1,200	900	365	

Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
5711	Aqueous Ammonia with Monoethanolamine (5 - 12%)	BFW pH Adjustment and Corrosion Control (Ammonia / Amine Blend)	Cycle Chemical Feed Shelter (Boler Feedwater/Condensate) (B1)	Tote	400 gal / 3,338 lb	gallons / pounds	1	400 gal / 3,338 lb	400 gal / 3,338 lb	300 gal / 2,504 lb	365	6,320
BL-153	Ammonium Hydroxide 10-19%	BFW pH Adjustment and Corrosion Control (Ammonia / Amine Blend)	Cycle Chemical Feed Shelter (Boler Feedwater/Condensate) (B1)	Tote	400 gal / 3,338 lb	gallons / pounds	1	400 gal / 3,338 lb	400 gal / 3,338 lb	300 gal / 2,504 lb	365	3,338 lbs on site daily
BL-152	Aqueous Ammonia with Monoethanolamine (5 - 10%)	BFW pH Adjustment and Corrosion Control (Ammonia / Amine Blend)	Cycle Chemical Feed Shelter (Boler Feedwater/Condensate) (B1)	Tote	400 gal / 3,338 lb	gallons / pounds	1	400 gal / 3,338 lb	400 gal / 3,338 lb	300 gal / 2,504 lb	365	3,338 lbs on site daily
ELIMINOX	Carbohydrazide (5 - 10%)	Oxygen Scavenger	Cycle Chemical Feed Shelter (Boler Feedwater/Condensate) (B1)	Drum	55 gal	gallons	1	55 gal	55	41	365	490
BT-3400	Pre-blended Phosphate/Caustic (1.0 - 5.0%)	pH and Corrosion Control (HP & IP Phosphate Feed)	Cycle Chemical Feed Shelter (HRSG A&B) (B1)	Tote	110 gal	gallons	1	110 gal	110	83	365	979
CROSSTRANS 106 and 207	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-A Excitation Transformer (E9)	Transformer	521 gal	gallons	1	521 gal	521	391	365	3,165 lb onsite daily
CROSSTRANS 106 and 206	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-A GSU Transformer (E4)	Transformer	14,950 gal	gallons	1	14,950 gal	14,950	11,213	365	90,821 lb onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-A Isolation Transformer (E10)	Transformer	977 gal	gallons	1	977 gal	977	733	365	5,935 lb onsite daily
CROSSTRANS 106 and 207	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-B Excitation Transformer (E9)	Transformer	521 gal	gallons	1	521 gal	521	391	365	3,165 lb onsite daily
CROSSTRANS 106 and 207	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-B GSU Transformer (E5)	Transformer	14,950 gal	gallons	1	14,950 gal	14,950	11,213	365	90,821 lb onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-B Isolation Transformer (E10)	Transformer	977 gal	gallons	1	977 gal	977	733	365	5,935 lb onsite daily
CROSSTRANS 106 and 209	mineral oil	mineral oil	Electrical Equipment: Station Service Transformer (E7)	Transformer	6,510 gal	gallons	1	6,510 gal	6,510	4,883	365	39,548 lb onsite daily
CROSSTRANS 106 and 210	mineral oil	mineral oil	Electrical Equipment: Station Service Transformer (E7)	Transformer	6,510 gal	gallons	1	6,510 gal	6,510	4,883	365	39,548 lb onsite daily
CROSSTRANS 106 and 209	mineral oil	mineral oil	Electrical Equipment: Steam Turbine Excitation Transformer (E11)	Transformer	747 gal	gallons	1	747 gal	747	560	365	4,538 lb onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Steam Turbine GSU Transformer (E6)	Transformer	19,015 gal	gallons	1	19,015 gal	19,015	14,261	365	115,516 lb onsite daily
	Helium	Helium, Compressed	Gas Metering Station (G5)	Cylinders	250 cu ft	cubic feet	5	1250 cu ft	1,250	938	365	
	Methane	Methane Compressed	Gas Metering Station (G5)	Cylinders	59 cu ft	cubic feet	1	59 cu ft	59	44	365	
MSDS #778986	Turbine Oil	lube oil	Hazardous Materials Storage Area (M2)	Drum	55 gal	gallons	4	220 gal	220	165	365	1,205 lb onsite daily
Product #001A0383	Shell Omala Oil HD 221	gear box/ACC oil	Hazardous Materials Storage Area (M2)	Barrels	55 gal	gallons	2	110 gal	110	83	365	606 lb onsite daily

Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
	Hydrogen	Hydrogen	Hydrogen Storage Area (G1)	Tube Trailer	44,000 cu ft	cubic feet	1	44,000 cu ft	44,000	33,000	365	53,000
AlphaCELL 195GXL-FT3	Lead Acid Battery	Lead Acid Battery	Packaged Electrical Electronic Control Center (PEECC) (M7)	Electrical Equipment: Battery	100 lb	pounds	116	11,600 lb	11,600	11,600	365	11,600
	Acetylene Gas	Acetylene Gas	Plant Maintenance Area (G3)	Cylinders	143 cu ft	cubic feet	4	572 cu ft	572	429	365	
	Argon Gas	Argon Gas	Plant Maintenance Area (G3)	Cylinders	381 cu ft	cubic feet	2	762 cu ft	762	572	365	
	Oxygen Gas	Oxygen Gas	Plant Maintenance Area (G3)	Cylinders	250 cu ft	cubic feet	6	1500 cu ft	1,500	1,125	365	
	Propane Gas	Propane Gas	Plant Maintenance Area (G3)	Cylinders	20 lb	pounds	16	319 lb	320	240	365	
	Nitrogen Gas	Nitrogen Gas	Plant Maintenance Area (G3), Compressed Cylinder Storage Area (C3)	Cylinders	250 cu ft	cubic feet	48	12,000 cu ft	12,000	12,000	365	
CDID: Stationary SPg - IB	Lead-Antimony Battery	Lead-Antimony Battery	Power Distribution Center in center of site (M6)	Electrical Equipment: Battery	110 lb	pounds	60	6,600 lb	6,600	6,600	365	6,600
CDID: Stationary SPg - IB	Lead-Antimony Battery	Lead-Antimony Battery	Power Distribution Center in Water Treatment Building (M6)	Electrical Equipment: Battery	110 lb	pounds	20	2,200 lb	2,200	2,200	365	2,200
MSDS #778985	Turbine Oil	lube oil	Steam Turbine (E3)	Steam Turbine Lube Oil System (E3)	5,250 gal	gallons	1	5,250 gal	5,250	3,938	365	28,744 lb onsite daily
	Hydrogen	Hydrogen / Coolant	Steam Turbine Generator (G2)	Generator	15,439 cu ft	cubic feet	1	15,439 cu ft	15,439	11,579	365	
	Sulfur Hexafluoride	SF6	Sulfur Hexafluoride Breakers (G4)	Electrical Equipment: Breaker	205 lb	pounds	7	1,432 lb	1,432	1,074	365	1,074 lb onsite daily
C & D Technologies 3DJ-200	Flooded Lead-Calcium Battery	Flooded Lead-Calcium Battery	Switchyard Control House (M7)	Electrical Equipment: Battery	100 lb	pounds	60	6,000 lb	6,000	6,000	365	6,000
7469	Anti-foam	Foam Control (ZLD)	Water Treatment Building (High Efficiency RO and ZLD) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	4,200
FO-321	Anti-foam	Foam Control (ZLD)	Water Treatment Building (High Efficiency RO and ZLD) (Site Feature #15)	Tank	360	gallons	1	360	360	270	365	3013 lbs on site daily
Nalco 8131	Coagulant (5 - 20%)	Coagulant (UF and Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (B4)	Aboveground Tank	2,500 gal / 31,295 lb	gallons / pounds	1	2,500 gal / 31,295 lb	2,500 gal / 31,295 lb	1,875 gal / 23,471 lb	365	23,471 lb onsite daily
P-828L	Ferric Sulfate 30-60%	Coagulant (UF and Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (B4)	Aboveground Tank	2,500 gal / 31,295 lb	gallons / pounds	1	2,500 gal / 31,295 lb	2,500 gal / 31,295 lb	1,875 gal / 23,471 lb	365	23,471 lb onsite daily
Cat-Floc 8018 Plus	Flocculant (5 - 20%)	Flocculant (Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	480
7744	Flocculant (5 - 20%)	Flocculant (Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	480
P-817E	Flocculant (5 - 20%)	Flocculant (Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	480

Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
PC-7408	Sodium Bisulfite (30 - 60%)	Water Treatment Feedwater Dechlorinization (Sodium Bisulfite Feed)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	2,399
RL-124	Sodium Bisulfite (30 - 60%)	Water Treatment Feedwater Dechlorinization (Sodium Bisulfite Feed)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tank	360 gal	gallons	1	360 gal	360	270	365	3,600
	Sulfuric Acid 98% (66 degree Baume 93%)	pH Adjustment (Sulfuric Acid for pH Adjustment)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	300 gal	gallons	2	600 gal	600	450	365	9,205
8735	Sodium Hydroxide	pH Adjustment (Caustic for pH Adjustment)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	2,399
BL-1304	Sodium Hydroxide 15-40%; Potassium Hydroxide 10-30%	pH Adjustment (Caustic for pH Adjustment)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tank	360 gal	gallons	1	360 gal	360	270	365	4543 lbs on site daily
PC-191T	Antiscalant	RO Scale Inhibition (Raw Water RO Antiscalant)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	1,200
RL-9008	Antiscalant 2-Phosphono-1,2,4 - butane tricarboxylic acid 5-10%	RO Scale Inhibition (Raw Water RO Antiscalant)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tank	360 gal	gallons	1	360 gal	360	270	365	3431 lb on site daily
	Sodium Hypochlorite (10 - 12%)	Bacteria Control for UF (Sodium Hypo-chlorite Feed)	Water Treatment Building (Raw Water Pre-Treatment and RO) (B4)	Aboveground Tank	1000 gal	gallons	1	1,000 gal	1,000	750	365	6,259 lb onsite daily
PERMA-CARE® PC-98	Sodium Hydroxide (5 - 15%)	High pH Cleaning (RO Cleaning Chemical)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	55-gal Metal or Plastic Drum .56	55 gal	gallons	4	220 gal	220	165	365	940
PERMA-CARE® PC-40	Sodium Percarbonate (5 - 15%)	Surfactant for Cleaning (RO Cleaning Chemical)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	5-gal Pail	5 gal	gallons	2	9 gal / 100 lbs	10	8	365	42
8344	Citric Acid (5 - 15%)	Low pH Cleaning (UF Iron Cleaner)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	55-gal Plastic Drum .56	55 gal	gallons	4	220 gal	220	165	365	575
RL-2016	Citric Acid (10-30%)	Low pH Cleaning (UF Iron Cleaner)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	Drum	55 gal	gallons	4	220 gal	220	165	365	2006 lbs on site Daily
	Soda Ash	Ph control	Water Treatment Building (Site Feature #15)	Drum	500 lbs	lbs	2	1000 lbs	1,000	750	365	750
	Sodium Hypochlorite (10 - 12%)		Water Treatment Building (Site Feature #15)	Tote	300 gal	gallons	1	300 gal	300	225	365	600
RL-1500	Ethylene diamine tetraacetic acid, tetrasodium salt (10-30%)	High pH Cleaning (RO Cleaning Chemical)	Water Treatment Building (Site Feature #15)	Dum	55 gal	gallons	2	110 gal	110	83	365	

Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
CL-2156	5-chloro-2methyl-4-isothiazolin-3-one 1.11%; 2-methyl-4-isothiazolin-3-one .39%; Magnesium Nitrate 1.61%; Magnesium Chloride .96%	Evaporative Cooling Water Biocide	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Tank	150 gal	gallon	1	150 gal	150	113	365	1286 lbs onsite daily
3DTBR06	Bioreporter (1 - 10%)	Tracing Agent (Bioreporter)	Wet Surface Air Cooled Chemical Feed Shelter (B2)	5-gal Pail	5 gal	gallons	2	10 gal	10	8	365	330
Nalco 3DT161	Inhibitor (5 - 10%)	Evaporative Cooling Scale/Corrosion Inhibitor	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Tote	110 gal	gallons	1	110 gal	110	83	365	3,359
CL-1432	Potassium phosphate, tribasic 5-10%; 1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt .5-1.0%; Tetrapotassium pyrophosphate 1-5%; Potassium hydroxide 5-10%, Tolytriazole, sodium salt 1-5%	Evaporative Cooling Scale/Corrosion Inhibitor	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Tank	150 gal	gallons	1	150 gallons	150	113	365	1674 lbs onsite daily
CT-709	Tetrapotassium pyrophosphate 40-70%	Wet SAC Passivation	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Drum	55 gal	gallons	1	55 gal	55	41	365	792 lbs onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Alternate Power Transformer (E12)	Transformer	550 gal	gallons	1	550 gal	550	550	365	550 lb onsite daily
MSDS #778984	Turbine Oil	lube oil	Combustion Turbine-A HRSG (G2)	boiler feedwater pump	141 gal	gallons	2	282 gal	282	212	365	2,045 lb onsite daily
MSDS #778984	Turbine Oil	lube oil	Combustion Turbine-B HRSG (G2)	boiler feedwater pump	141 gal	gallons	2	282 gal	282	212	365	2,045 lb onsite daily
	Sulfuric Acid 98% (66 degree Baume 93%)		Zero Liquid Discharge AreaSite Feature #21)	Tote	325 gal	gallons	1	325 gal	325	244	365	4,986
	Aqueous Ammonia (19%)		Aqueous Ammonia Storage Tank (M5)	Tank	20,000 gal	gallons	1	20,000 gal	20,000	15,000	365	154,971
Shell Turbo Fluid DR 46	Trixyly Phosphate (60-100%)	Steam Turbine Hydraulic Oil	Steam Turbine (E14)	Tank	500 gal	gallons	1	500 gal	500	400	365	
DOWFROST* 30 Heat Transfer Fluid	Propylene Gycol (30%)	propylene gycol in the water bath heater	Water Bath Heater (Site Feature #85)	In water bath heater	16,662 gal	gallons	1	16,662 gal	16,662	12,497	365	
Carbon Dioxide	Carbon Dioxide, Gas (99%)		Near STG	compressed gas cylinder	436 cu ft	cu ft	72	31392 cu ft	31,392	23,544	365	
Gasoline	Gasoline	Gasoline	Hazardous Materials Storage Area (M2)	Drum	55 Gal	gallons	2	110 gallons	110	55	365	3000 gallons
Diesel	Diesel	Diesel	Hazardous Materials Storage Area (M2)	Drum	55 Gal	gallons	2	110 gallons	110	55	365	2200 gallons

Appendix 3, Noise-8

Per Noise-8, the following is required: "In the first annual compliance report after the receipt of a complaint, the project owner shall include documentation certifying that: 1) the noise-attenuating upgrades were installed on the specified residence at the project owner's expense; 2) the noise attenuating upgrades were already a feature of the residence; 3) installation was offered but refused by the owner; or 4) residential use by the complainant was ceased.

There were no Noise Complaints made by the owners or occupants of any of the existing residences located at ML1, ML2, or RC1 during operation of the CGS in 2015. There have been no noise complaints to date from anyone.

Appendix 4, Soil & Water -2

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