DOCKETED	
Docket Number:	08-AFC-03C
Project Title:	Marsh Landing Generating Station Compliance
TN #:	242515-11
Document Title:	2021 CEC Annual Compliance Report Part 9
Description:	Annual Compliance Operations Report
Filer:	David Frandsen
Organization:	NRG
Submitter Role:	Applicant
Submission Date:	3/31/2022 12:36:45 PM
Docketed Date:	4/1/2022

3.9 BIO-8

The California Wildlife Foundation Annual Report for 2021 is included.

Projects and Accomplishments at Antioch Dunes NWR Funded by Clearway Energy Operating, LLC. January 2021 through December 2021 Summary Report

In 2021 the regular working methods and resources at Antioch Dunes National Wildlife Refuge were largely effected by the ongoing COVID-19 pandemic. Work plans for the Antioch Dunes NWR staff were altered due to the ongoing pandemic and poor air quality caused by wildfire smoke. Although large work groups, or volunteer work events were cancelled for most of the 2021 year, we were able to conduct one working event and did have one contractor work on the site in 2021 with help from the California Wildlife Foundation and funds donated by Clearway Energy Operating, LLC. (Previously known as NRG Energy, INC). In 2021 Clearway Energy Operating, LLC generously donated $23,527.00 to the Antioch Dunes National Wildlife Refuge on June 1st of 2021. This report will summarize the 2021 transactions and activities supported by the funds donated by Clearway Energy Operating, LLC. combined with a balance of funds previously donated. The donated funds are used by the Antioch Dunes National Wildlife Refuge in an effort to conserve the endangered Antioch Dunes evening primrose (*Oenothera deltoides howellii*) (Photo 3), Contra Costa wallflower (*Erysimum capitatum angustatum*), and Lange's metalmark butterfly (*Apodemia mormo langei*) and their habitat within the Antioch Dunes NWR.

The Antioch Dunes NWR has been partnering with the California Wildlife Foundation (CWF) in order to complete these tasks. The CWF is a nonprofit organization that administers restoration of land and water projects and works with partners to maintain habitat for the benefit of people, plants and wildlife. The funds donated by Clearway Energy Operating LLC. (Previously NRG Energy, INC), have been extremely beneficial to the CWF and Antioch Dunes NWR, and have helped to complete our collective missions. The mission of the United States Fish & Wildlife Service is "Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people". The FWS mission and the vision statement for the Antioch Dunes NWR is "Endangered species management will be incorporated into the overall management actions that mimic natural processes, the Refuge will support self-sustaining populations of Lange's metalmark butterflies, Contra Costa wallflowers, and Antioch Dunes evening primroses, and other native species". All donated funds are used for non-native invasive plant control and native and endangered plant restoration at the Antioch Dunes NWR.

The 2021 Clearway Energy Operating, LLC. donation of $23,527.00 was combined with a remaining $64,430.62 held by the California Wildlife Foundation from previous NRG Energy, INC. donations. The total combined budget for 2021 was $83,290.25 when 2021 funds were donated on June 1st 2021 (Table 2). The remaining balance held by the CWF at the end of the 2021 year was $74,529.85. During the 2021 year $8,115.47 were used on the rental of debris boxes from Allied Waste Disposal (Republic Services). This amounted to 60.4% of the expenses used during 2021. $989.99 were used to hire

Vegetation Solutions, INC. to control non-native invasive plants on and around the new sand dune restoration site on the Stamm Unit, which accounted for 7.4 % of the funds expended in 2021. $4,322.31 were used to hire a Biological Technician through temp agency HR Options, and that amount equaled to 32.2% of the total funds expended in 2021. $2,340.00 will be charged to support the California Wildlife Foundation and their services in 2022. The remaining funds donated by Clearway Energy Operating, LLC. were held by the CWF for future projects and activities at the Antioch Dunes NWR in the 2022 year. All funds were used in support of restoration and conservation purposes on multiple projects ongoing at the Antioch Dunes NWR (Tables 1 & 2). Including support for non-native invasive plant control projects throughout the Refuge. The following report will describe 2021 work completed, how funds were used for contracting Invasive plant control, hiring a biological technician, and for the rental of Allied Waste debris boxes, as well as project proposals for 2022 (Table 3).

2021 Work Plan Complications and Adjustments:

Although we had to make field work plan adjustments this past year, we were able to accomplish some vital non-native invasive plant control work in 2021. While pandemic safety precautions were relaxed a Youth Conservation Corp (YCC) crew was able to visit and work at the Antioch Dunes NWR. YCC Crew members were able to remove an old barbed wire fence and manually control non-native invasive plants in Management Area 2 at the Stamm Unit (Photo 2). The invasive plants they removed were placed into disposal dumpsters rented with Clearway Energy Operating, LLC. funds.

Contractors from Vegetation Solutions, INC. were able to get on site and control non-native invasive plants on and around the restoration sites on the Stamm Unit Management Areas 1 & 2 in 2021. Although we were not able to get help from volunteers and students on the Refuge as we normally do, refuge staff relied more on heavy equipment. We used a John Deere tractor to mow grasses and other invasive plants and a Bobcat skid-steer to remove some larger vegetation and place them into the rented Allied Waste dumpsters. Staff is currently still limited on the amount of time they can get into the field, but we are planning on using more Clearway Energy Operating, LLC funds to hire contractors in 2022.

Invasive Plant Control:

In 2021 Antioch Dunes NWR used Clearway Energy Operating, LLC. donated funds to hire Vegetation Solutions, INC (a local small business) to conduct non-native invasive plant control on and around the sand dune restoration sites on the Stamm Unit. Due to medical and time constraint issues Vegetation Solutions, INC. staff were limited to only one day of work on site in 2021. However, Vegetation Solutions, INC. staff were able to apply herbicides around the new dune restoration sites Management Area 1 & 2 (Map 1). The management of the sand dune restoration site is a priority conservation strategy for the Antioch Dunes NWR. Since 2013 we have worked with the Port of Stockton and the Army Corp of Engineers and their contractors to acquire 68,300 cubic yards of dredged sand material onto Management Area 1 of the Stamm

Unit. In 2019 and 2020 we received 19,510 & 4,000 cubic yards of sand material in Management Area 2 of the Stamm Unit (Photo 4). It is a high priority for the Refuge to control invasive plants around these new dune sites, and donated funds help to conduct this valuable work.

In 2022 the refuge will again seek help from Vegetation Solutions, INC., and/or other local contractors to help control non-native invasive plants on both sand dune restoration sites. The Antioch Dunes NWR staff is limited and in need of support from contractors in order to complete all of the priority conservation strategies outlined in our Natural Resource Management Plan. Clearway Energy Operating, LLC. funds help to support and complete some of the priority conservation strategies on the refuge, such as invasive plant management and sand dune restoration management. Controlling non-native invasive plants around the restoration sites helps to keep them from spreading onto the newly acquired dredged sand material.

Biological Technician:

In 2021 a biological technician was hired through the California Wildlife Foundation and the temp agency HR Options with the donated Clearway Energy Operating, LLC. funds. The biological technician expenses and wages cost a total of $4,322.31, and amounted to 32.2% of the funds expended in 2021. The biological technician hired supported the Refuge Biologist during Lange's metalmark butterfly surveys and helped with data entry in August and September of 2021. The biological technician also helped to control non-native invasive plants on the refuge. Having a biological technician is a valuable resource to have at Antioch Dunes NWR for the Refuge Biologist and for wildlife resource management. We plan on hiring another biological technician for the 2022 year.

Debris Box Rentals:

The Antioch Dunes NWR and the endangered species that it was established to protect are highly threatened by non-native invasive plants and wildfires. Non-native invasive plants directly threaten the endangered plant species and the host plant for the endangered Lange's metalmark butterfly on the refuge by out competing them for water, space and sunlight. Some invasive plants, such as winter vetch (*Vacia villosa*) will climb on and smother the endangered plants and host plants, if not controlled annually. In the hot and dry summer, the invasive plant vegetation dry up and act as fuel for wildfires. In the past the Antioch Dunes NWR has had relatively large wildfires that have directly impacted the populations of the endangered Contra Costa wallflower, Antioch Dunes evening primrose, the Lange's metalmark butterfly, and other common native species. In 2021 we had two small fires on the Sardis Unit, which were probably started by trespassers (Map 2, Photo 5). Thankfully, the fires were small and did not spread throughout the Sardis Unit. However, these events remind us why the rental and use of dumpsters to remove non-native invasive plants and dead and dried plant material is such a valuable management tool on the refuge.

Dumpsters are rented from Allied Waste Disposal (Republic Services) to remove non-native invasive plant material and dried vegetation from the Antioch Dunes NWR. The dumpsters rented from Allied Waste cost $425.24 per month or per dump and vary in size from 20 to 40 cubic yards. Extra charges are incurred when the boxes exceed 1 ton. The dumpsters

are filled with mostly non-native invasive plant material by refuge staff, biological technicians, interns, hired contractors, and volunteers. Non-native invasive plants, such as winter vetch, yellow star-thistle (*Centaurea solstitialis*), Russian thistle (*Salsola tragus*), and tree-of-Heaven (*Ailanthus altissima*) are pulled or cut and deposited into the dumpsters. After the dumpsters are filled, they are hauled away by Allied Waste trucks.

In 2021 $8,115.47 or 60.4% of the total expenses were spent on the rental of debris boxes from Allied Waste (Table 1 & 2). The rental and use of the debris boxes from Allied Waste remains a valuable resource needed for the control and management of non-native invasive plants on the refuge. Invasive plant control on both the Stamm and Sardis Units are supported by the rental of the dumpsters from Allied Waste. Non-native invasive plants are controlled on and around the new sand dunes restoration site on the Stamm Unit (Map1), and also around host plants for the endangered Lange's metalmark butterfly, and around the endangered Contra Costa wallflower and the Antioch Dunes evening primrose plants on the Sardis Unit (Map 2). Standing dry vegetation are also manually removed and deposited into the dumpsters during vital wildfire management work throughout the refuge. Vegetation is also cleared out and removed in order to make more room for native plant restoration plantings conducted by refuge staff and the local community. Thus, the rental of these dumpsters supports multiple priority conservation strategies for the Antioch Dunes NWR. Those strategies include sand dune restoration management, invasive plant management, native plant restoration, and wildfire prevention.

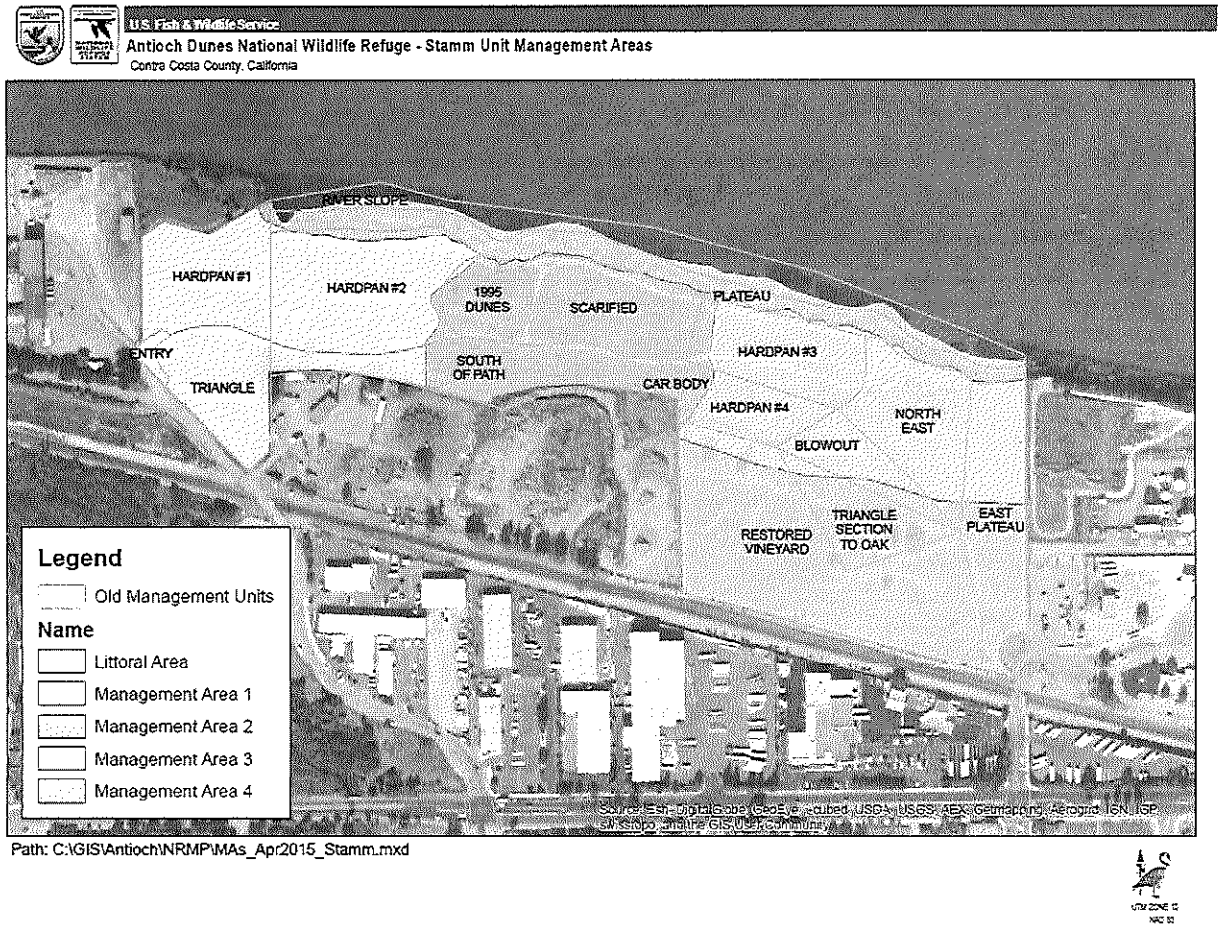
Proposed Projects for the 2022 year:

The following is a general proposal for the remaining funds donated by Clearway Energy Operating, LLC., including funds saved from previous NRG Energy, INC. donations. The remaining funds added up to $74,529.85 at the end of December 2021. Table 3 displays four proposed projects or tasks and the estimated expenses for the 2022 calendar year. Proposed projects include $10,000 used to hire another or more biological technicians through HR Options for technical support for the Refuge Biologist and for resource management support. Approximately $15,000.00 will be used to rent large debris boxes from Allied Waste for non-native invasive plant and dead vegetation disposal and for the removal of cement debris. We anticipate a larger amount needed for the dumpster rentals in order to conduct more work in 2022, and to remove cement debris in 2022 (Photo 1). The California Wildlife Foundation will be paid approximately $4,693.00 for the 10 percent services fee for 2021 & 2022. Approximately $35,000.00 will be used to hire local contractors to help control non-native invasive plants throughout the Antioch Dunes NWR. Non-native invasive control work will include manual labor, mechanical control and herbicide applications. In 2022 we plan on using approximately $6,000 to purchase heavy equipment attachments for a Bobcat skid-steer (Photo 6). Refuge staff uses a Bobcat skid-steer to move sand around, mow invasive plants and to clear access roads. We plan on purchasing a new flail mower attachment and a new dozer blade attachment for the Bobcat skid-steer to help mow non-native invasive plants and to move

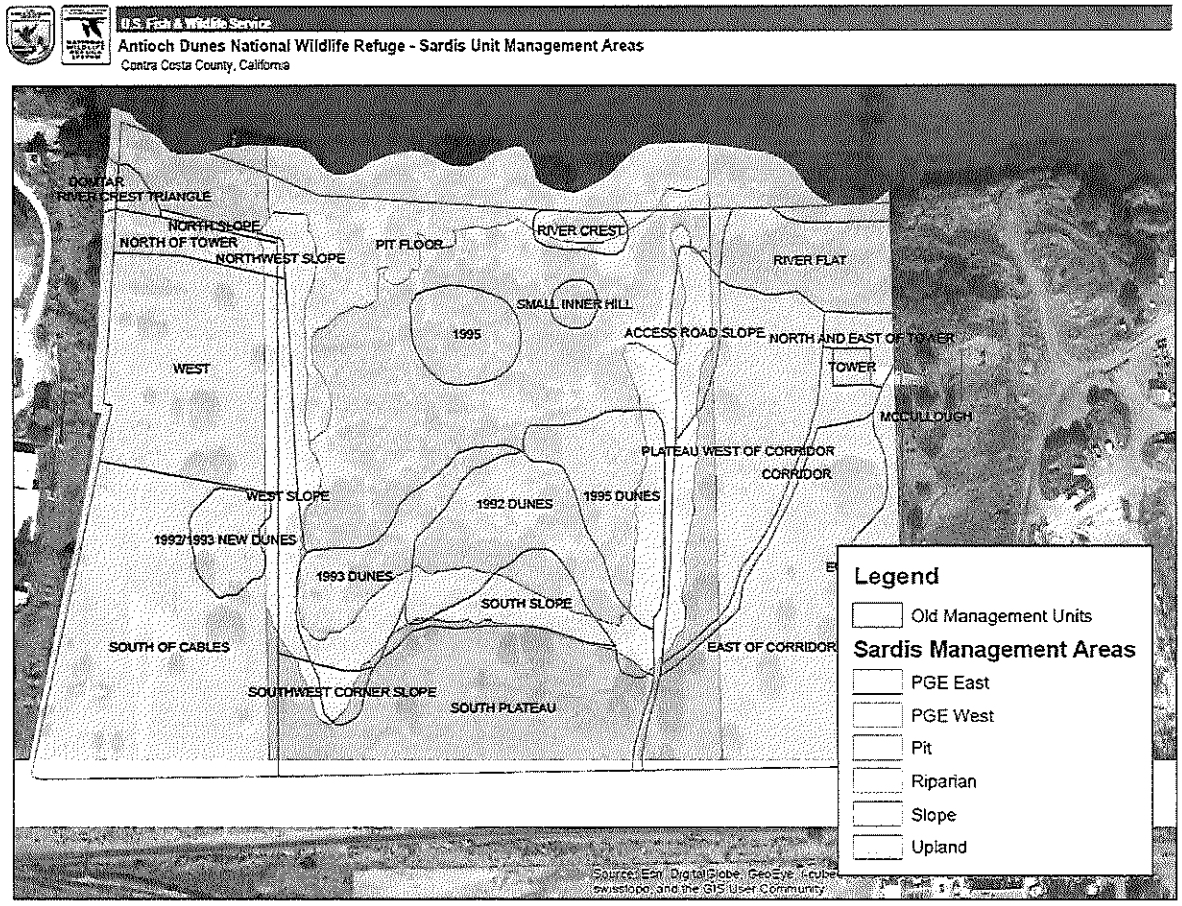
sand and clear areas of the refuge for planting and seeding. Total estimated expenses in 2022 is approximately $70,693.00. We plan on holding the remaining $3,836.85 for the 2023 project year. Some of these remaining funds may be used for field supplies and equipment for biological technicians, volunteers and staff. Actual cost will vary throughout the 2022 year.

On behalf of the Antioch Dunes National Wildlife Refuge staff we would like to thank our partners at Clearway Energy Operating, LLC. (Previously NRG Energy, INC.) and the California Wildlife Foundation for their continued support and partnership. We would especially like to thank Clearway Energy Operating, LLC., for their generous donations to the Antioch Dunes National Wildlife Refuge. These donations to the Antioch Dunes NWR continue to help conserve the critically endangered Antioch Dunes evening primrose, Contra Costa wallflower, and Lange's metalmark butterfly and their habitats, as well as numerous other native plant and animal wildlife that use the Antioch Dunes NWR. Funds also help to provide environmental education to the local community. Although we have not been able to host volunteers, and local schools these past two years, projects funded by Clearway Energy Operating, LLC. donations provide resources for projects that have benefited local Girl Scouts, volunteers, as well as Antioch High School, Sutter Elementary School, Antioch Charter Academy II, Willow Cove Elementary and the local community in the past. We hope to be able to open up the refuge ounce again to the local community in 2022.

Donations from Clearway Energy Operating, LLC. are not only a tremendous benefit to the Lange's metalmark butterfly, Contra Costa wallflower, the Antioch Dunes evening primrose, and the Antioch Dunes NWR; but are also indirectly beneficial for environmental education programs, recreational purposes and for the general wellbeing of the local community. Thank you very much for your continued support at the Antioch Dunes National Wildlife Refuge.



Map 1. Antioch Dunes NWR Stamm Unit Map. New Sand Dunes located on western end of Stamm Unit in MA1 & MA2.



Map 2. Antioch Dunes NWR Sardis Unit.

Photo 1. USFWS staff member Jim Griffin uses a backhoe to break down and remove concrete at the Antioch Dunes Stamm Unit in 2021. Dumpsters will be rented for the removal of cement debris in 2022.

Photo 2. Youth Conservation Corp members work on removing non-native invasive plants from the new dunes in Management Area 2 in 2021.

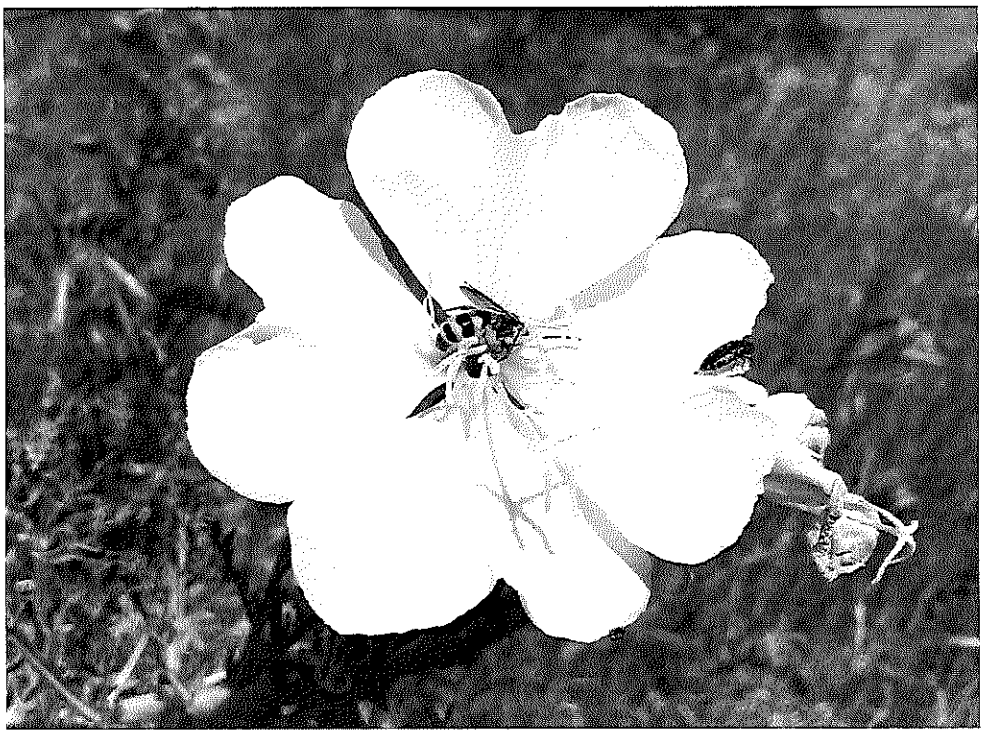


Photo 3. Endangered Antioch Dunes evening primrose at Antioch Dunes NWR in April of 2021

Photo 4. Dredged sand material from the San Joaquin River deposited onto Management Area 2 of the Stamm Unit.

Photo 5. Two small wildfires burned 3 Lange's metalmark butterfly host plants on the Sardis Unit in 2021.

Photo 6. Refuge Bobcat skid-steer dumping wood chips from removed brush into a Refuge dump truck.

Table 1. Jan 2021 - Dec 2021 Expended Funds Summary

Project / Partner	$ Cost	% of Total
Allied Waste Dumpsters	$8,115.47	60.4%
Invasive Plant Control	$989.99	7.4%
Biological Technician	$4,322.31	32.2%
CWF 10% Fee for 2021	$2,340.00	0% (Not yet charged)
Total Funds Expended	**$13,427.77**	100%

Table 2. Jan 2021 – Dec 2021 Funds Activity

Date	Action	Name	Memo	Transaction	Balance
	Balance	2021 Balance	Balance Remaining from 2021		**$64,430.62**
Jan 18 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$1,943.40	$62,487.22
Feb 22 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$971.70	$61,515.52
Mar 25 2021	Charge	Vegetation Solutions, INC.	Invasive plant control / herbicide application	$989.99	$60,525.53
Apr 23 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$762.28	$59,763.25
June 01 2021	**Deposit**	**Clearway Energy Operating, LLC**	**Clearway Energy Operating, LLC. 2021 Donation**	**$23,527.00**	$83,290.25
June 10 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$599.41	$82,690.84
June 17 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$597.73	$82,093.11
July 19 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$597.73	$81,495.38
Aug 26 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$597.73	$80,897.65
Oct 06 2021	Charge	HR Options	Biological Technician Hire	$1,113.85	$79,783.80
Oct 06 2021	Charge	HR Options	Biological Technician Hire	$2,353.43	$77,430.37
Oct 06 2021	Charge	HR Options	Biological Technician Hire	$855.03	$76,575.34
Oct 14 2021	Charge	Allied Waste	Dumpster rental for invasive plants	1,019.98	$75,555.36
Nov 22 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$509.99	$75,045.037
Dec 16 2021	Charge	Allied Waste	Dumpster rental for invasive plants	$515.52	$74,529.85
			Total Expended Jan 2021 - Dec 2021	$13,427.77	
			Total Remaining as of Dec 2022		**$74,529.85**

Table 3. Clearway Energy Operating, LLC. 2022 Funds Proposal.

Task/Name	Est. Cost	Task Description
Total Balance for 2022	**$74,529.85**	Balance remaining from 2021
Allied Waste / Republic Service	$15,000.00	Dumpster rentals for vegetation and cement removal
HR Options	$10,000.00	Biological Technician hired by CWF by HR Options
California Wildlife Foundation	$4,693.00	2021 and 2022 10% CWF Service Fees
Contractors	$35,000.00	Invasive Plant Control / Herbicide Spraying
Skid-Steer Attachments	$6,000	Purchase of dozer blade and flail mower for Skid-Steer
Total Proposed Expenditures	$70,693.00	Total proposed for 2022
Proposed Remaining Balance	$3,836.85	Remaining balance to be held by the CWF

5.0 Submittal Deadlines Missed

1. No submittal deadlines were missed during 2021.

6.0 Other Governmental Agency Filings and Permits Issued

Permit Required	Date of Approval Given
1. Annual Permit to Operate by BAAQMD, Plant # 19169	9/1/22 Actual
2. Clean Air Act Title IV Permit by BAAQMD (Acid Rain Permit)	9/9/2019 Actual
3. Clean Air Act Title V Permit by BAAQMD (to be obtained within 12 months after commencing operation)	9/9/2019 Actual
4. BAAQMD issued authority to construct black start equipment on Units 3 and 4 (Extended)	4/29/21
5. Application filed with the BAAQMD to change facility name filed on 11/8/18.	12/1/2019
6. Application filed with BAAQMD to renew Title V and Acid Rain permits. Renewal of Title V included a request to change permit conditions: 27, 28, 32	3/26/2020 & 4/22/2020, respectively.
7. Additional Governmental Approvals Identified in the CEC Decision or otherwise required in the ordinary course of business, including the following:	
a. Other CBO approvals to be obtained as specified in the CEC Decision	Ongoing
b. Notice of Termination, General National Pollutant Discharge Elimination System Permit for Discharges of Storm Water Associated with Construction Activity, and California Statewide General Industrial Storm Water Permits (State Water Resources Control Board Order No. 97-03-DWQ)	7/1/18 Actual
c. Certification to Store Hazardous Materials (Hazardous Materials Business Plan) by Contra Costa County Health Services Department (to be obtained at least 30 days prior to receiving hazardous materials on site)	5/2/2013 Actual
d. Compliance with certification, verification and other requirements specified in California Public Utilities Commission General Order 167 (to be provided when the MLGS Project is interconnected and capable of operating in parallel with the electric system)	2/2/2015 Actual
e. DDSD Industrial Wastewater Discharge Permit	5/25/2019 Actual
f. Emergency Diesel Generator – Initial Permit to Operate. Here in incorporated in the Facility Wide Permit to Operate, #1 above.	11/4/2015 Actual

g. Diesel Fire Pump – Initial Permit to Operate. Here in incorporated in the Facility Wide Permit to Operate, #1 above.	3/20/2019 Actual
h. Construction General Permit for Storm Water (NPDES)	3/12/21 Actual

Permit Required	**Date of Approval Given**
8. Department of Transportation Hazardous Materials Certificate of Registration Effective: 07-01-2021, Expires: 06-30-2022	7/01/2021 Actual
9. San Joaquin Regional Water Quality Control Board – Request to rescind the Industrial General Permit for Storm Water. The board agreed.	5/03/2017 Actual
10. CUPA Hazardous Material Storage Certificate for 2021/2022	7/01/2021 Actual

7.0 Project Compliance Activity Schedule for 2021

Compliance Activity	Schedule
Calibrate Met Station	Q2 & Q4
RATA and Emission Compliance Testing	Q4
Calibrate Water Flow Meters (3)	Q1
Calibrate Gas Flow Meters	Q1

8.0 Additions to the On-Site Compliance File

The following items were added to the compliance file since the April 2013 Monthly Report:

MLGS Sub #	Conditions Submitted	Date of Submission
161	Soil & Water-4	April 24, 2013
162	Soil & Water-4 and Soil & Water-5	May 1, 2013
163	Monthly Compliance Report No. 32 for April 2013	May 14, 2013
164	AQ-10, AQ-30, and AQ-32	June 25, 2013
165	HAZ-1	June 25, 2013
166	WASTE-5	June 26, 2013
167	NOISE-4	July 8, 2013

MLGS Sub #	Conditions Submitted	Date of Submission
168	NOISE-5	July 8, 2013
169	TSLN-3	July 12, 2013
170	Quarterly Compliance Report for Q2-2013	July 30, 2013
171	WASTE-5	August 5, 2013
172	BIO-6	August 14, 2013
173	CUL-4a	August 22, 2013
174	PAL-7	August 22, 2013
175	CIV-4	October 23, 2013
	Quarterly Compliance Report for Q3-2013	October 25, 2013
	Quarterly Compliance Report for Q4-2013	January 29, 2014
176	TRANS-2b	November 15, 2013

	Conditions Submitted	Date of Submission
	Quarterly Compliance Report for Q1-2014 Addendum – Air Quality Reports	April 30, 2014 July 2, 2014
	Quarterly Compliance Report for Q2-2014	July 30, 2014
	Quarterly Compliance Report for Q3-2014	November 14, 2014
	Quarterly Compliance Report for Q4-2014 partial Full Report	January 30, 2015 February 2, 2015
	Quarterly Compliance Report for Q1-2015 partial Full Report	April 30, 2015 June 9, 2015
	Quarterly Compliance Report for Q2-2015	July 30, 2015
	Quarterly Compliance Report for Q3-2015	October 29, 2015
	Quarterly Compliance Report for Q4-2015	January 29, 2016
	Quarterly Compliance Report for Q1-2016	April 30, 2016
	Quarterly Compliance Report for Q2-2016	July 30, 2016
	Quarterly Compliance Report for Q3-2016	October 30, 2016

	Conditions Submitted	Date of Submission
	Quarterly Compliance Report for Q4-2016	January 30, 2017
	Quarterly Compliance Report for Q1-2017	April 28, 2017
	Quarterly Compliance Report for Q2-2017	July 30, 2017
	Quarterly Compliance Report for Q3-2017	October 30, 2017
	Quarterly Compliance Report for Q4-2017	January 30, 2018 (Partial) February 9, 2018 (Final)
	Quarterly Compliance Report for Q1-2018	April 30, 2018
	Quarterly Compliance Report for Q2-2018	July 30, 2018
	Quarterly Compliance Report for Q3-2018	October 30, 2018
	Quarterly Compliance Report for Q4-2018	January 28, 2019* corrected
	Quarterly Compliance Report for Q1-2019	April 30, 2019
	Quarterly Compliance Report for Q2-2019	July 29, 2019

	Conditions Submitted	Date of Submission
	Quarterly Compliance Report for Q3-2019	October 30, 2019
	Quarterly Compliance Report for Q4-2019	January 30, 2020
	Quarterly Compliance Report for Q1-2020	April 22, 2020
	Quarterly Compliance Report for Q2-2020	July 29, 2020
	Quarterly Compliance Report for Q3-2020	October 29, 2020
	Quarterly Compliance Report for Q4-2020	January 28, 2021
	Quarterly Compliance Report for Q1-2021	April 27, 2021
	Quarterly Compliance Report for Q2-2021	July 21, 2021
	Quarterly Compliance Report for Q3-2021	October 28, 2021
	Quarterly Compliance Report for Q4-2021	January 31, 2022

9.0 Review of Unplanned Facility Closure Plan

The on-site contingency plan for unplanned facility closure has been reviewed and updated. Plan included.

Marsh Landing LLC

Facility Closure Plan

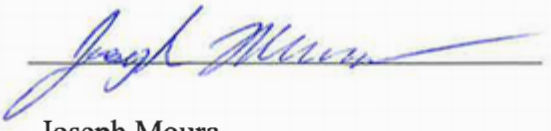
Marsh Landing Generating Station
Antioch, California

Revision 6
February 2021

Table of Contents

PLANT MANAGER REVIEW

The Marsh Landing Facility Closure Plan has been reviewed by the Plant Manager.

Signature	
Name	Joseph Moura
Title	Plant Manager
Date	2/15/2021

PLAN REVIEW AND CHANGE LOG

Revision No.	Revision Date	Completed by	Description	Revised Pages
0	4/2013	C. Hicklin	Original Plan	NA
1	1/2016	D. Frandsen	Reviewed and revised the Plan as follows: • Added cover page and Plan Review and Change Log. • Revised text to indicate present tense instead of future tense.	All
2	1/2017	D. Frandsen	Reviewed and revised the Plan as follows: • Added Facility Manager Review, Table of Contents and Introduction. • Revised document title to be consistent with the content. • Revised project description. • Separated the elements listed in the Unplanned Temporary Closure Section for the SPCC Plan and HMBP. • Added excerpts from General Conditions COMPLIANCE 11 through 13 contained in the Commission Decision 08-AFC-03 for MLGS.	All
3	9/2018	D. Frandsen	Administrative – • Update Site Manager information. • Removed sodium hydroxide from the chemicals listed onsite.	Throughout
4	1/2019	D. Frandsen	Administrative – • Updated Plant Manager information. • Updated Water Treatment tank reserved capacity.	Throughout
5	1/2020	D. Frandsen	Reviewed and revised the Plan as follows: • Added RO Permeate Tank size information	5
6	2/2021	D. Frandsen	Reviewed and revised the Plan as follows: • Added breif discussion of black start capabilities to be provided in 2021 in the Overview. • Added breif discussions regarding the emergency generator and fire pump house in the Equipment and Systems Description. • Changed the name of the Plan to be consistent with the CEC Compliance Conditions.	4 & 5

Marsh Landing Generating Station

INTRODUCTION

At some point in the future, the Marsh Landing Generating Station will cease operation and close down. At that time, it will be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. The Marsh Landing Facility Closure Plan provides guidance for decommissioning activities and facility closure plan requirements as required by General Conditions COMPLIANCE 11 through 13 issued by the California Energy Commission (CEC) in Commission Decision 08-AFC-03 for MLGS.

I PROJECT DESCRIPTION

Overview

Marsh Landing Generating Station (MLGS) is located at 3201C Wilbur Avenue, Antioch, California, adjacent to the Contra Costa Generating Station (CCGS), a retired steam electric generating plant. MLGS was substantially completed in April 2013 with commercial operations commencing May 1, 2013, and is a nominal 760-MW simple cycle combustion turbine power plant designed to operate on natural gas fuel. The plant utilizes four Siemens Energy, Inc. SGT6-5000F4 combustion turbine-generators (CTGs). The site comprises an area that is a brownfield site measuring approximately 27 acres.

The MLGS is designed to provide peaking power, and is expected to operate at less than 10 percent annual capacity factor and a maximum 20 percent annual capacity factor. The MLGS is ideally suited to serve the needs of California's electric system as it increasingly relies on intermittent renewable resources such as solar and wind facilities. The four simple cycle turbines are capable of fast-start operation (within about 11 minutes from cold status), and are designed to be started, ramped up and down, and shut down on an intra-day basis as needed to meet the needs of the system. The facility is receiving and installing equipment to become black start capable in the Fall of 2021.

The CEC has regulatory jurisdiction over power plants located in California rated 50 MW or above and monitors all construction, operations, and decommissioning phases. The CEC approved this project's Application for Certification on August 25, 2010.

Equipment and Systems Description

Siemens provided the CTGs and auxiliaries, generator step-up transformers (GSUs), fuel gas compressors, fuel gas conditioning equipment and start-up support. Each unit includes one CTG with dry ultra-low nitrogen oxide (NOx) combustors and inlet air evaporative coolers. In the simple cycle arrangement, fuel is fired in the combustion turbines that utilize the Brayton power cycle in which hot combustion gases are expanded through the combustion turbines, which then drives an electric generator.

Kiewit Power Constructors Co. was the Engineering, Procurement and Construction (EPC) contractor for the project. Kiewit provided all facilities and equipment not provided by Siemens, including buildings, auxiliary transformers, and oxidation catalyst and selective catalytic reduction (SCR) systems for air emissions control. Kiewit was responsible for installation and commissioning of all equipment, including the turbines. Buildings and structures include an administration/control building, a water treatment building, a warehouse building, a medium voltage electrical building, electrical enclosures in the switchyard and water treatment areas, continuous emissions monitoring system enclosures, and a fuel gas compressor enclosure.

An emergency generator capable of 500 KW was added to the site in 2014. The generator can provide emergency power to the CTGs lubricating oil pumping systems in the event the facility loses power. This will allow for the safe shutdown of the any CTGs that may have been operating at the time.

In 2018 a fire pump building was added that contains both a diesel engine and electric motor driven fire pump which allows the fire system to be independent of outside resources. Each fire pump is capable of 1,500 gallons per minute at a pressure of 110 psi.

Water Treatment Systems

Process and potable water needs are supplied with water from the City of Antioch municipal supply. Raw water for process use is stored in a 600,000 gallon raw water storage tank. The top half (300,000 gallons) of the tank is utilized for process use while the bottom half (300,000 gallons plus) is reserved for firefighting capacity. Raw water is treated prior to use in the evaporative coolers and is stored in a 170,000 gallon RO Permeate tank. In addition, demineralized water for combustion turbine compressor water washes is provided on an as needed basis via a third-party agreement with a mobile treatment vendor. Demineralized water is stored in a 10,000 gallon storage tank.

Wastewater and Storm Water Systems

Wastewater from the evaporative cooler operations, floor drains and equipment area drains with the potential to be contaminated by oil are collected and passed through an oil-water separator and pumped to a 200,000 gallon wastewater storage tank. Water treatment area wastes are also pumped to the wastewater storage tank. Stored wastewater is later discharged, along with sanitary wastes, in accordance with the facility's industrial wastewater discharge permit issued by Delta Diablo.

In addition, the facility has a bioretention facility that detains and treats storm water. Storm water is detained and treated in the surface reservoir, filtered through plants and a biologically active soil mix, and then it infiltrates into the ground. The bioretention facility contains underdrains as a preventive measure against poor drainage. Underdrains are routed to an outlet that is double valved and connects to CCGS's discharge tunnel to the River. The valves are kept closed and discharges to the River will only occur if the infiltration is inadequate to keep appropriate freeboard in the reservoir.

Gas Supply

Kiewit supplied two natural gas fired dew point heaters, filtration and regulation systems, including fuel gas coalescing filter/separators, in accordance with Siemens fuel gas specification.

Natural gas is supplied by Pacific Gas & Electric Company (PG&E) pursuant to the Power Purchase & Sale Agreement (PPA). The project owner and PG&E entered into a Gas Interconnection and Transportation Agreement pursuant to which PG&E constructed a short interconnection from its Line 400, a backbone gas transmission line, to the CCGS site. Kiewit designed and constructed the gas line from the outlet flange of the gas meter set on the CCGS site to the project.

Electric Interconnection

The project owner connected with the electricity network owned by PG&E and operated by the California Independent System Operator (CAISO). Electricity delivery is made to the PG&E transmission system at PG&E's Contra Costa 230 kV switchyard. The switchyard is adjacent to the MLGS site. The project owner, PG&E and CAISO executed a Large Generator Interconnection Agreement (LGIA) under the CAISO LGIP in February 2011.

Auxiliary/Station Service Power
Power for the project's auxiliary loads is provided by two station auxiliary transformers, each supplied from the project switchyard. This electrical arrangement enables the project's load to be served directly from the transmission system when the turbines are not in service.

II FACILITY CLOSURE

The MLGS has a planned operational life of at least 30 years with more than 22 years remaining. During this time, there are at least three circumstances that a facility closure can take place: planned closure, unplanned temporary closure, and unplanned permanent closure. Planned closure is defined to occur when the facility is closed in an anticipated, orderly manner, at the end of its useful economic or mechanical life, or due to gradual obsolescence. Unplanned temporary closure is defined to occur when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency. Unplanned permanent closure is defined to occur if the owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner implements the on-site contingency plan.

1) Planned Closure
Although the planned life of MLGS is 30 years, the actual life of the facility may vary for economic or other reasons. The removal of the facility from service (decommissioning) when it reaches the end of its useful life ranges from "mothballing," to the removal of all equipment and appurtenant facilities and subsequent restoration of the site. Future conditions that could affect decommissioning are largely unknown at this time. Such conditions would be presented to the CEC, Contra Costa County, and the City of Antioch when more information is available and decommissioning is imminent.

In order to ensure that decommissioning will be completed in a manner that is environmentally sound, safe, and protects the public health and safety, the owner will submit a proposed facility closure plan to the CEC for review and approval at least 12 months prior to the commencement of closure activities. CEC staff proposed general conditions for decommissioning activities to be included in the facility closure plan and consist of the following:

- Identify any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site.

- Identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project.

- Identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and

- Address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

Prior to submittal of the proposed facility closure plan, the owner will organize a meeting with the CEC for the purpose of discussing the specific contents of the plan.

2) Unplanned Temporary Closure

In the event of a temporary closure, security for the facility will be maintained in accordance with the Site Security Plan for the operational phase that was submitted to the CEC on August 22, 2012, under Condition HAZ-8. The CEC as well as other responsible agencies will be notified by telephone, fax or email within 24 hours. If the CEC Compliance Project Manager determines that an unplanned temporary closure is likely to be permanent, or for a duration of more than 12 months, a closure plan consistent with the requirements for a planned closure shall be developed and submitted to the CEC Compliance Project Manager within 90 days of the CEC Compliance Project Manager's determination (or other period of time agreed to by the CEC Compliance Project Manager).

The Site Security Plan includes the following elements:

- Site security plan description
- Site security operating procedures that includes fencing, lighting, security cameras, gates, parking and site access protocol for visitors and plant contractors
- A protocol for contacting law enforcement and the CEC Compliance Project Manager in the event of suspicious activity or emergency endangering the facility, its employees, its contractors, or the public
- IT security of the facility
- Evacuation procedures
- A protocol for hazardous materials vendors to prepare and implement security plans as per 49 CFR 172.802 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR Part 1572, subparts A and B
- Measures to conduct site personnel background checks, including employee and routine onsite contractors, consistent with state and federal law regarding security and privacy

Depending on the nature and extent of the temporary closure, subsequent activities will depend on whether or not the temporary closure involves a release of hazardous materials. For a temporary closure in which there is the potential for a release of hazardous materials into the environment, procedures would be followed as per Condition HAZ-2:

- Risk Management Plan
- Spill Prevention Control and Countermeasure Plan
- Hazardous Material Business Plan

The Risk Management Plan includes the following elements:

- Site accidental release prevention program and chemical specific prevention steps
- Off-site consequence analysis for the worst-case scenario (WCS) accidental release of aqueous ammonia

- Emergency response actions that have been coordinated with local emergency planning and response agencies

The Spill Prevention Control and Countermeasure Plan includes the following:

- Inventory and location of oil-containing containers and equipment
- Spill prevention measures in place
- Emergency response

The Hazardous Material Business Plan includes the following:

- Business forms required by the certified unified program agency (CUPA)
- Inventory of all hazardous materials, including chemical composition, amount, and location
- Emergency response contingency plan

Once any hazardous material release is contained and cleaned up, temporary closure would proceed as described below for closure in which there is no release of hazardous materials.

A temporary closure not due to spill/release of hazardous materials can result from a number of unforeseen circumstances. This may include conditions such as significant disruptions to major utilities (natural gas, water or electric transmission delivery systems), equipment failure or other factors that may force the units to be shut-down temporarily. Natural disasters that can result in significant damage to the facility (earthquake, flood, or severe winter storms) may also result in temporary shutdown. For these types of temporary closure, additional security will be added as needed. Appropriate procedures will depend on the expected duration of the temporary closure and the impact involved. These procedures will be implemented in compliance with all laws, ordinances, regulations and standards (LORS), appropriate protection of public health, safety, and the environment. All hazardous and nonhazardous wastes will be collected and disposed as described in the Operation Waste Management Plan.

Any temporary shutdown that does not involve facility damage would be kept "as is" and ready for restart when the unexpected cessation of operations event is rectified or ceases to restrict operations.

The facility will maintain an operational insurance coverage during the entire operations of the facility including during any unplanned temporary closure. The owner will perform normal maintenance activities during the entire operations of the facility.

3) Unplanned Permanent Closure

In the event of an unexpected permanent closure of the facility, the appropriate procedures during a temporary closure will be followed. The CEC as well as other responsible agencies will be notified by telephone, fax or email within 24 hours. The project owner shall keep the CEC Compliance Project Manager informed of the status of all closure activities.

A facility closure plan, consistent with the requirements for a planned closure, will be developed and submitted to the CEC Compliance Project Manager within 90 days of the permanent closure or another

period of time agreed to by the CEC Compliance Project Manager. This plan will be implemented in compliance with LORS, appropriate protection of public health, safety, and the environment.

10.0 Complaints, Notices of Violations, Official Warnings, Citations, and Corrective Actions Taken

No Notices of Violations were issued to the facility during 2021.