DOCKETED	
Docket Number:	08-AFC-03C
Project Title:	Marsh Landing Generating Station Compliance
TN #:	237346
Document Title:	MLGS BESS AQ Data Response
Description:	MLGS BESS AQ Data Response
Filer:	Scott Seipel
Organization:	NRG, Inc.
Submitter Role:	Applicant
Submission Date:	3/29/2021 2:51:21 PM
Docketed Date:	3/29/2021

Seipel, Scott

From: Seipel, Scott
Sent: Monday, March 29, 2021 10:58 AM
To: 'Qian, Wenjun@Energy'; Piantka, George; Heiser, John@Energy; Hughes, Joseph@Energy; Lesh, Geoff@Energy
Cc: Timothy Leavitt; Leach, Dan; Frandsen, David; Moura, Joseph
Subject: RE: Marsh Landing PTA - BESS modification AQ questions
Attachments: MLGS BESS Construction Equipment Emissions Estimate_3-2021.pdf

Wenjun,

I was able to get a copy of the tables AECOM used to calculate the horse power and CO, NOx, PM, SOx, and VOCs emissions for the construction equipment. I have updated the equipment horse power (HP) estimate and emissions estimates using the original calculation methods.

I used the equipment list provided by the current contractor to develop the 2021 project profile for HP hours and then compared the HP hours from 2008 and 2019. The Black Start Project as currently planned (2021) will be approximately 5% less intensive (HP) on a monthly basis and 1% less intensive overall as compared to the 2019 MLGS construction HP hours. Similar to how the 2019 PTA calculated the emissions tons as a percent of the total 2008 construction tons I estimated the 2021 emissions. The total emissions for the 2021 construction estimate will be on average 10% lower than the 2019 estimated emissions.

Note that these estimates are conservative being based on 2008 equipment emissions and most likely not accounting for engine Tier 4 improvements.

If there are any questions please let me know. I will docket this email and attached PDF spreadsheet later today.

Thanks

Scott Seipel
(909) 648-5008

From: Qian, Wenjun@Energy [mailto:Wenjun.Qian@energy.ca.gov]
Sent: Wednesday, March 24, 2021 2:08 PM
To: Piantka, George <George.Piantka@nrg.com>; Heiser, John@Energy <john.heiser@energy.ca.gov>; Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Lesh, Geoff@Energy <Geoff.Lesh@energy.ca.gov>
Cc: Timothy Leavitt <Timothy.Leavitt@clearwayenergy.com>; Leach, Dan <Daniel.Leach@nrg.com>; Frandsen, David <David.Frandsen@nrg.com>; Moura, Joseph <Joe.Moura@nrg.com>; Seipel, Scott <Scott.Seipel@nrg.com>
Subject: RE: Marsh Landing PTA - BESS modification AQ questions

George,

Thank you for the detailed explanation and the spreadsheet. It looks like only NOx emissions are included in the spreadsheet. Will the emissions also be lower for other criteria pollutants? Can you provide emission estimates for other criteria pollutants? In addition, I'm not able to relate the emission estimates your just provided to those shown in the 2019 staff analysis for BESS construction. Air Quality Table 1 of the 2019 staff analysis shows 1.07 tons/month and 4.08 tons/year (i.e. 8,160 lbs/year) for NOx emissions. But the spreadsheet you just provided shows 126 lbs of NOx emissions during 91 days. Did you revise the emission calculations for the previously approved BESS amendment?

Thanks.

Wenjun

From: Piantka, George <George.Piantka@nrg.com>
Sent: Wednesday, March 24, 2021 11:58 AM
To: Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>; Heiser, John@Energy <john.heiser@energy.ca.gov>; Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Lesh, Geoff@Energy <Geoff.Lesh@energy.ca.gov>
Cc: Timothy Leavitt <Timothy.Leavitt@clearwayenergy.com>; Leach, Dan <Daniel.Leach@nrg.com>; Frandsen, David <David.Frandsen@nrg.com>; Moura, Joseph <Joe.Moura@nrg.com>; Seipel, Scott <Scott.Seipel@nrg.com>
Subject: RE: Marsh Landing PTA - BESS modification AQ questions

Hello Wenjun and John,

Thank you for your review of the Battery Energy Storage System (BESS) Capacity and Output Increase Petition to Amend (PTA). This current PTA is a modification of the Commission Decision; the original (2018) BESS PTA which modified the Commission Decision provided a comparison of the BESS construction, commissioning, testing and operations to the original Marsh Landing Generating Station (MLGS) Air Quality emissions. More applicable to this current BESS PTA analysis, the 2018 BESS PTA acknowledged that the potential impacts associated with the BESS construction would be significantly less than the construction-related air quality impacts associated with the MLGS construction (~2010-2013). This current PTA modifies the project description of the BESS project, further describing the changes with respect to potential construction air quality impacts from the original BESS PTA to the BESS Capacity and Output Increase PTA. Irrespective of the changes from the original BESS to the current BESS PTA, potential construction-related air quality impacts remain significantly less than that analyzed in the MLGS construction – less equipment overall and less off-road diesel-powered equipment, less personnel, and less vehicle miles traveled, and the higher Tier engines (Tier 4/4i) where diesel equipment is necessary. While the construction duration of the current BESS PTA has increased by several days as noted below, this increase is less than significant in comparison to the original MLGS construction and in particular in comparison to the original BESS PTA. The foundation design has also changed (matt foundation) such that pile driving is not needed, which eliminates construction-related emissions associated with a pile driver. When considering the daily construction-related emissions, Marsh Landing LLC (Mash Landing) believes that potential construction emissions the BESS Capacity and Output Increase PTA will be less than that of the original BESS PTA. The post-construction tasks (BESS commissioning, testing and operations) remain unchanged to that described and analyzed in the original BESS PTA.

To elaborate, the original BESS PTA construction schedule was estimated to be 91 days, but the overall project was assumed to be over a 6-month period. This included site mobilization, grading, import of soil, pile driving, concrete pours, and equipment setting. The construction equipment was to include an excavator, vacuum truck, trenching machine, backhoe or dozer, three (3) dump trucks, soil compactor, concrete pumper, boom crane, portable generator / welding equipment, forklift, water truck, and pile driver. Although construction emissions were not specifically calculated for the BESS installation, since it was acknowledged that the amount of equipment and personnel would be considerably less on a daily basis than that utilized for construction of MLGS, the emissions were expected to be significantly less than estimated for the construction of MLGS, which were calculated for a 27-month construction period with a work force up to 270 workers. The original MLGS construction was guided by AQ-SC5, which required the use of Tier 3 California Emissions Standards for all 50 horsepower or higher equipment. The original BESS PTA considered the use of pile driving for foundation installation. The BESS Capacity and Output Increase PTA eliminates piling driving and incorporates Tier 4/4i engines – changes that both will reduce hourly emissions during construction of the improved BESS.

Construction emissions from the current BESS PTA are estimated to occur over a 97-day period from site mobilization through equipment setting – thus, approximately 6 days longer than the original BESS PTA. The overall project schedule is assumed to be 4 to 5 months rather than the original 6-month period. The current BESS PTA includes site restoration work for final grading and covering of the stockpile referenced in the MLGS Decision and original BESS PTA. The construction equipment will be required to be compliant with AQ-SC5 (diesel mitigation plan), which requires equipment to be no less than Tier 3 emissions standard. Considering that the CARB Off-Road Diesel Emissions program is well into the Tier 4 requirement, diesel-powered contractor equipment is expected to be Tier 4 or 4i. The refined project design does not require pile foundations, rather matt foundations, which, as noted above, will reduce construction-related emissions. In addition, Marsh Landing anticipates using the onsite stockpiled material to the extent possible for the BESS foundation and grading, which will eliminate an estimated 50 dump truck trips that were previously estimated. Import material will be reduced to concrete, rip-rap, and other basic construction materials. The change (increase) in the foundation area grading will not impact the overall emissions, because the construction method will be simplified (no pile driving), will use Tier 4/4i equipment (less emissions as compared to Tier 3 engines), and will eliminate as much as 50 dump truck trips.

I believe the above background information is responsive to your questions below. Below is brief responses to your respective questions.

Questions:

1. Please clarify whether the construction emissions would increase or not. Marsh Landing LLC estimates that the construction emissions would decrease due to utilization of Tier 4/4i equipment as possible and the elimination of pile driving and reduction of dump truck trips.

2. Please provide the construction emission estimates so that staff can compare them with the emissions approved previously. Attached is the estimate of construction equipment to be used for the BESS Capacity and Output Increase PTA. Marsh Landing LLC has included a comparison of the previously estimated equipment usage and NOx emissions as an example for the original BESS PTA to the BESS Capacity and Output Increase PTA.

Please contact us if you have any further questions.

Best Regards

George L. Piantka, PE
Senior Director
Regulatory Environmental Services
4600 Carlsbad Boulevard
Carlsbad, CA 92008
760-930-1505 (Note new address/office #)
760-707-6833 (mobile)
George.Piantka@nrg.com

From: Seipel, Scott <Scott.Seipel@nrg.com>
Sent: Wednesday, March 17, 2021 2:29 PM
To: Wenjun.Qian@energy.ca.gov
Cc: Timothy Leavitt <Timothy.Leavitt@clearwayenergy.com>; Leach, Dan <Daniel.Leach@nrg.com>; Frandsen, David <David.Frandsen@nrg.com>; Moura, Joseph <Joe.Moura@nrg.com>; Piantka, George <George.Piantka@nrg.com>
Subject: RE: Marsh Landing PTA - BESS modification AQ questions

Wenjun,

We are working on the data request. Should have a response later this week.

Thanks

Scott Seipel
Manager, Environmental Business
NRG Energy, West Region
4600 Carlsbad Blvd
Carlsbad, CA 92008
909-648-5008

From: Qian, Wenjun@Energy <
Sent: Friday, March 12, 2021 11:34 AM
To: Piantka, George <George.Piantka@nrg.com>
Cc: Heiser, John@Energy <john.heiser@energy.ca.gov>; Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Lesh, Geoff@Energy

<Geoff.Lesh@energy.ca.gov>
Subject: Marsh Landing PTA - BESS modification AQ questions

George,

I reviewed the current Marsh Landing PTA - BESS modification. I have the following questions regarding the construction emissions. Could you provide some clarification for us?

Background: Construction Emissions

The footprint of the Battery Energy Storage System (BESS) foundation pad would increase from 70 ft x 80 ft to 60 ft x 240 ft. The 2018 BESS Petition to Amend (PTA [TN 223052]) mentioned approximately 1,000 cubic yards (cy) of fill would be required to raise the site to match existing grade. The current PTA (TN 237000-1) mentioned approximately 2,000 cy would be over-excavated and approximately 1,500 cy of fill would be required to raise the site. But the 2018 BESS PTA did not mention how much soil would be excavated. On the other hand, the construction period would decrease from 5 to 6 months to 4 to 5 months.

Staff needs to understand how the shorter construction period with increased footprint, increased soil filling, and possibly increased excavation would affect the construction emissions.

Questions:

1. Please clarify whether the construction emissions would increase or not.
2. Please provide the construction emission estimates so that staff can compare them with the emissions approved previously.

Thanks.

Wenjun Qian, Ph.D., P.E.
Air Resources Engineer
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814
Email: Wenjun.Qian@energy.ca.gov
Phone: 916-477-1339

Estimated Pieces of Construction Equipment and Schedules													
Equipment	% Use	HP	Fuel	2019						Yearly Total	Maximum Monthly Weighted HP	Annual Weighted HP
				April	May	June	July	Aug	Sept			
On-Road/Off-Road												
Dump Truck	30%	350	Dsl	3	3					6	31,354	62,708
Concrete Pumper	15%	350	Dsl		1					1	5,226	5,226
Concrete Truck	15%	350	Dsl		5					5	26,128	26,128
Pickup Trucks	18%	325	Gas	4	4	4	4	4	4	24	23,292	139,750
Water truck	12%	350	Dsl	1	1	1	1			4	4,181	16,722
Vacuum truck	18%	350	Dsl		1	1	1			3	6,271	18,813
Off-Road												
Excavator	30%	250	Dsl	1	1					2	7,465	14,931
Backhoe	30%	80	Dsl	1	1					2	2,389	4,778
Flatbed-mounted Utility Crane	30%	300	Dsl			1	1			2	8,958	17,917
Portable Generator and Welding Equipment	30%	25	Dsl		1	1	1			3	747	2,240
Trencher/ditch witch	24%	250	Dsl	1	1	1				3	5,972	17,917
Soil compactor	30%	15	Gas	1	1					2	448	896
Pile driver	30%	500	Dsl		1					1	14,931	14,931
Forklift	30%	40	Gas		1	1	1	1		4	1,194	4,778
										Totals	**138,556**	**347,733**

Estimated Pieces of Construction Equipment and Schedules												
Equipment	% Use	HP	Fuel	2021						Yearly Total	Maximum Monthly Weighted HP	Annual Weighted HP
				April	May	June	July	Aug	Sept			
On-Road/Off-Road												
Dump Truck	30%	350	Dsl	1	1					2	10,451	20,903
Concrete Pumper	15%	350	Dsl		1					1	5,226	5,226
Concrete Truck	15%	350	Dsl		5					5	26,128	26,128
Pickup Trucks	18%	325	Gas	4	4	4	4	4	4	24	23,292	139,750
Water truck	12%	350	Dsl	1	1	1	1			4	4,181	16,722
Vacuum truck	18%	350	Dsl		1	1	1			3	6,271	18,813
Off-Road												
Excavator	30%	250	Dsl	2	2					4	14,931	29,861
Backhoe	30%	80	Dsl	2	2					4	4,778	9,556
Flatbed-mounted Utility Crane	30%	300	Dsl			1	1			2	8,958	17,917
Portable Generator and Welding Equipment	30%	25	Dsl			2	2	2		6	1,493	4,479
Trencher/ditch witch	24%	250	Dsl	1	1	1				3	5,972	17,917
Soil compactor	30%	15	Gas	1	1					2	448	896
Pile driver	30%	500	Dsl		0					0	-	-
Forklift	30%	40	Gas		1	1	1	1		4	1,194	4,778
										Totals	**113,323**	**312,944**

Year	Maximum Monthly Weighted HP	Annual Weighted HP
2008	478,750	2,446,000
2019	138,556	347,733
2021	113,323	312,944
2019 from 2008 % change	-71.06%	-85.78%
2019 fraction of 2008 HP	0.2894	0.1422
2021 from 2019 % change	-5.27%	-1.42%
2021 fraction of 2019 HP	0.8179	0.9000
2021 from 2008 % change	-76.33%	-87.21%
2021 fraction of 2008 HP	0.2367	0.1279

2019Estimate

	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_x	VOC
Construction Emissions						
2008 Monthly Emissions (tons)	11.23	3.69	0.16	0.15	0.0043	0.69
2019 Month Emissions (tons)	3.25	1.07	0.05	0.04	0.001	0.20
2008 Yearly Emissions (tons)	85.02	28.7	1.25	1.14	0.034	5.33
2019 Year Emissions (tons)	12.09	4.08	0.18	0.16	0.005	0.76

2021 Estimate

	CO	NOx	PM10	PM2.5	SOx	VOC
2008 Construction Emissions Monthly	11.23	3.69	0.16	0.15	0.0043	0.69
2021 Constuction Emissions Monthly (24% 2008 Rate)	2.66	0.87	0.04	0.04	0.001	0.16
2021 Constuction Emissions Annual (13% 2008 Total)	10.88	3.67	0.16	0.15	0.004	0.68
% Reduction 2021 Compared to 2019 Total Emissions	-10%	-10%	-10%	-10%	-10%	-10%

All Units in tons