



TETRA TECH EC, INC.

DOCKET

09-AFC-8

DATE NOV 12 2009

RECD. NOV 18 2009

November 12, 2009

California Energy Commission
Docket No. 09-AFC-8
1516 9th St.
Sacramento, CA 95814

Genesis Solar Energy Project - Docket Number 09-AFC-8

Docket Clerk:

Pursuant to the provisions of Title 20, California Code of Regulation, Genesis Solar LLC, a Delaware limited liability company, hereby submits an informational letter to the Mojave Desert Air Quality Management District regarding additional permit applications for the two cooling towers and two heat transfer systems associated with the Genesis Solar Energy Project.

If you have any questions, please contact Meg Russell at (561) 304-5609 or me at (303) 980.3727.

Sincerely,

Tricia Bernhardt
Project Manager/Tetra Tech EC

cc: Mike Monasmith /CEC Project Manager





TETRA TECH EC, INC.

November 12, 2009

Mr. Alan DeSalvio
Mojave Desert Air Quality Management District
14306 Park Ave.
Victorville, CA 92392-2310

Genesis Solar Energy Project – CEC Docket Number 09-AFC-8

Dear Mr. DeSalvio:

Enclosed please find three copies of a response letter to the MDAQMD based on an email from Richard Wales the California Energy Commission on 10/27/09. This letter addresses the concerns raised in the email correspondence.

Additionally three copies of the additional permit applications are enclosed. The original signed forms, along with a check in the amount of \$678 from the applicant, Genesis Solar, LLC and parent company NextEra Energy Resources, LLC have been sent to you under separate cover.

If you have any questions, please contact Meg Russell at (561) 304-5609 or me at (303) 980.3727.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Tricia Bernhardt'.

Tricia Bernhardt
Project Manager/Tetra Tech EC

cc: Mike Monasmith /CEC Project Manager



Responses to MDAQMD Draft Letter to CEC (via email on 10-27-09) from Richard Wales (MDAQMD)

Permit Application Issues:

The District needs permit applications for the 2 cooling towers and the 2 heat transfer systems (ullage). Currently one of the previously submitted permit application is not needed. Therefore 3 applications and 3 filling fees of \$226.00 each are needed.

Response: The AFC, per Appendix B.9 should have contained the following AQMD permitting applications; (1) a general application form, (2) two internal combustion engine forms for the two fire pump systems, (3) two internal combustion engine forms for the two emergency generator engine sets, and (4) two external combustion (boiler) forms for the two auxiliary boilers (heat transfer systems). A search of the MDAQMD website (permitting forms page) did not reveal any permit applications forms for cooling towers or HTF systems. Per the guidance provided by Alan De Salvio (MDAQMD), we are submitting the following four (4) permit applications on the AQMD "general" application form:

- Two (2) applications, one for each of the power block cooling towers.
- Two (2) applications, one for each of the HTF systems for each power block and solar field.
- Fees totaling \$678.00 for three of the four attached applications (note that per Mr. DeSalvio, the existing application fee of \$226.00 will be applied to the fourth application)

Technical Issues:

1. 'Table of Contents' the titles on Figures 5.2-1 through 5.2-5 are for the 'Blythe Airport' and not 'Lancaster Fox Field'.

Response: This is simply a typographical error in the Table of Contents. The correct titles for the figures noted are as follows:

Figure 5.2-1. Blythe ASOS Wind Rose – Annual

Figure 5.2-2. Blythe ASOS Wind Rose – Spring

Figure 5.2-3. Blythe ASOS Wind Rose – Summer

Figure 5.2-4. Blythe ASOS Wind Rose – Fall

Figure 5.2-5. Blythe ASOS Wind Rose – Winter

2. Table 5.2-19 for the MDAQMD the contact is Eldon Heaston (not Easton). The mailing address is 14306 Park Avenue, Victorville, CA 92392-2310 and the telephone number is (760) 245-1661.

Response: Table 5.2-19 is amended to read as follows:

Table 5.2-19. Agencies, Contacts, Jurisdictional Involvement, Required Permits for Air Quality

Agency	Contact	Jurisdictional Area	Permit Status
California Energy Commission (CEC)	Assigned Project Manager 1516 Ninth Street Sacramento, CA 95814	Primary reviewing and certification agency.	Will certify the facility under the energy siting regulations and CEQA. Certification will contain a variety of conditions pertaining to emissions and operation.
MDAQMD	Eldon Heaston, APCO 14306 Park Ave. Lancaster, CA 92392 (760) 245-1661	Prepares Determination of Compliance (DOC) for CEC, Issues MDAQMD Authority to Construct (ATC) and Permit to Operate (PTO), Primary air regulatory and enforcement agency.	DOC will be prepared subsequent to AFC submittal. The AFC contains the AQMD permitting application forms. The AFC plus these forms will constitute the required AQMD permitting application.
California Air Resources Board (CARB)	Mike Tollstrup Chief, Project Assessment Branch 1001 I Street, 6th Floor Sacramento, CA 95814 (916) 322-6026	Oversight of AQMD stationary source permitting and enforcement program	CARB staff will provide comments on applicable AFC sections affecting air quality and public health. CARB staff will also have opportunity to comment on draft ATC.
Environmental Protection Agency, Region IX	Gerardo Rios Chief, Permits Section USEPA-Region 9 75 Hawthorne Street San Francisco, CA 94105 (415) 947-3974	Oversight of all AQMD programs, including permitting and enforcement programs	USEPA Region 9 staff will receive a copy of the DOC. USEPA Region 9 staff will have opportunity to comment on draft ATC.
	San Francisco, CA 94105 (415) 947-3974		

3. Table 5.2-2 several toxic substance are listed as criteria pollutants, see Table 5.15-3 for correct listing. Note that lead is both a criteria pollutant and a toxic substance.

Response: This discrepancy is simply the result of a formatting error. The correctly formatted table is as follows:

Table 5.2-2. Criteria and Toxic Pollutants Potentially Emitted from the Project

Criteria Pollutants	Toxic Pollutants	
NO _x CO VOCs SO _x PM ₁₀ /PM _{2.5} Lead	Acetaldehyde Acrolein Benzene 1-3 Butadiene Ethylbenzene Formaldehyde Hexane Naphthalene PAHs Propylene Propylene Oxide Xylene	Chromium Copper Nickel Manganese Selenium Mercury Zinc Biphenyl Diesel PM Lead Toluene Arsenic Cadmium

4. The application has two values for the amount of Heat Transfer Fluid (HTF) lost. On page 5.2-7 the loss rate is 17.7 tpy and in Appendix B.1-1 the loss rate is 22.1 tpy.

Response: This discrepancy is due to the insertion of an earlier table into the AFC Appendix B.1. The correct table which follows shows VOC emissions from the HTF system to be 17.7 tons per year. Please note that the re-submittal of the new BACT controls on the HTF system will necessitate a revision to the HTF VOC emissions values.

Most recent version of HFF Emissions table (Appendix B.1, Attachment B.1-1)

Attachment K.1-1 HTF Venting and Fugitive Loss Rate Emissions

SEGS	Years													00-09	Avg Gals Year	Gals Sys vol	% in 10 yrs	% System Volume Loss	
	1990	1991	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008						2009
III	X	X	0	15000	6000	4700	6000	5400	1720	1720	1960	0	0	0	27500	2750	106400	25.8%	2.58
IV	X	X	0	0	6000	4700	6000	5400	1720	1720	1960	0	0	0	27500	2750	106400	25.8%	2.58
V	X	X	0	2600	6000	4700	6000	5400	1720	1720	1960	0	0	0	27500	2750	121900	22.8%	2.26
VI	X	X	0	2400	6000	4700	6000	5400	1720	1720	1960	0	0	0	27500	2750	110000	26.9%	2.60
VII	X	X	0	2400	6000	4700	6000	5400	1720	1720	1960	40000	0	0	87500	6750	110000	61.4%	6.14
VIII	30000	12000	X	X	3500	6100	0	16022	0	5000	4000	6000	0	0	37822	3782.2	340500	11.0%	1.10
IX		0	X	X	3500	5100	0	0	0	5000	4000	6000	0	0	22800	2260	340500	6.6%	0.66

Avg Loss Rate of Newer Systems at SEGS VIII and IX 0.88 %
 New CST technology employing nitrogen blanketing and enhanced O&M should be able to substantially reduce this loss rate. Avg % Loss 2.55

Therminol Properties:

Form: Liquid
 Components: Diphenyl ether and biphenyl
 Density: 1.06 g/cm³ at 25 deg C (8.85 lbs/gal)
 Boiling Point: 287 deg C
 Autoignition Temp: 612 deg C

Genesis Project Data:

HTF System Capacity: 2000000 gals Ref: Final POD, CACA 48880, Table 2-3, June 2009
 (2-125 MW units total) 17700000 lbs
 Losses at 0.88% Rate: 166524.1 lbs/year VOC
 426.8 lbs/day VOC
 78.3 tons/yr VOC

Estimated Loss Rate for the Genesis System: 0.2 %



5. Note the USEPA released modification to AERMOD on October 23, 2009.

Response: The modeling analysis was conducted using the appropriate version of AERMOD at the time of application submittal to the CEC and AQMD. Based on consultation with the project modeling staff, the AERMOD release of 10-23-09 will have no effect on the project impact analysis. Any subsequent modeling performed for the project will use the latest version of AERMOD.

6. The District is aware the some HTF have added a condenser or carbon filters to reduce VOC and HAP emissions. Therefore, the BACT determination will need to be amended.

Response: The applicant is aware of the HTF BACT issue and is currently working on the design and feasibility of a BACT system which will utilize either chiller/condenser technology, carbon absorption technology, or a combination of such technologies. We will supply this re-design, as well as the revised emissions calculations, updated modeling (if required), and updated HRA as soon as the system is finalized.

7. The one hour NO₂ ambient air concentration amount in Table 5.2-17 exceeds the proposed USEPA limit of 80 ppb.

Response: On July 15, 2009 EPA proposed a new NO₂ standard based on the 3-year average of the 99th percentile (or fourth highest) of 1 hour daily maximum concentrations. EPA proposed to set the new short term standard within the range of 80 to 100 ppb, and has solicited comments on standard levels in the range of 65 to 150 ppb. This proposed standard is under review and comment, and will not be finalized until January 22, 2010. Based on a review of the EPA proposed rule analysis as published in the Federal Register (FR, Vol 74, No. 134, page 34404-) we note that before state and local district SIPs can be amended to incorporate the new standard provisions, the individual areas will have to be classified as to "attainment" status, which will be followed by specific SIP amendments and submittals. This process will take well over 2 years, and as such we believe it is premature to address or include an analysis of the draft proposed standard.

8. Appendix B.3 needs supporting data as to why this facility is not subject to PSD. If subject to PSD this facility is within 60 miles of a Class I Area. The area is the Joshua Tree National Park.

Response: The facility, per Table 5.2-7 does not have emissions of PSD applicable pollutants in excess of 250 tons per year. Emissions PTE values for all pollutants except VOC are well below 5 tons per year. VOC emissions, currently estimated at

17.77 tons per year, will decrease substantially with the addition of the HTF BACT system noted in response #6. We would expect the HTF VOC control system efficiency to be 90% or greater, resulting in emissions of VOCs on the order of less than 2 tons per year. The facility is not one of the source types listed in the "28" source categories subject to the 100 ton per year applicability threshold. In addition, the facility modeling does not indicate that any impacts above any established significance levels will occur at the boundary of, or interior to any Class I area (including Joshua Tree NP). Therefore, there is nothing to date that would indicate that the proposed facility would be subject to PSD.

9. Appendix B.6 - PM₁₀ BACT for an emergency diesel engine is 0.15 g/bhp.

Response: All of the engines as proposed meet the BACT limit noted in the comment above. The two (2) fire pump engines are currently rated at 0.018 g/bhp-hr, and the two (2) emergency generator engines are rated at 0.055 g/bhp-hr. These engines meet all the required EPA and CARB Tiered emissions standards for the particular size rating (hp), and year of manufacture. Table B.6-1 in Appendix B.6 simply presents the range of current BACT limits as derived from air district databases and EPA/CARB tier standards.

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue, Victorville, CA 92392-2310
 (760) 245-1661 Facsimile: (760) 245-2022

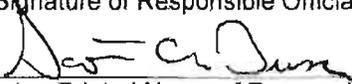
www.mdaqmd.ca.gov

Eldon Heaston
 Executive Director

APPLICATION FOR AUTHORITY TO CONSTRUCT AND PERMIT TO OPERATE

Page 1 of 2: please type or print

REMIT \$226.00 WITH THIS DOCUMENT (\$129.00 FOR CHANGE OF OWNER)

1. Permit To Be Issued To (company name to receive permit): Genesis Solar, LLC		1a. Federal Tax ID No.: 35-2303285	
2. Mailing/Billing Address (for above company name): 700 Universe Blvd., Juno Beach, FL. 33408			
3. Facility or Business License Name (for equipment location): Genesis Solar Energy Project			
4. Facility Address - Location of Equipment (if same as for company, enter "Same"): Riverside County, Blythe, CA		Location UTM or Lat/Long: 33°38'5.39"N, 114°57'20.58"W	
5. Contact Name/Title: Duane McCloud	Email Address: duane.mccloud@nexteraenergy.com	Phone/Fax Nos.: (561) 694-3577	
6. Application is hereby made for Authority To Construct (ATC) and Permit To Operate (PTO) the following equipment: Genesis Solar Energy Project (See AFC Air Quality section and appendices for equipment details)			
Air Pollution Control Equipment, if any (note that most APCE require a separate application): Cooling Tower for the Unit-1 Solar Field			
7. Application is for: <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Modification* <input type="checkbox"/> Change of Owner*		For modification or change of owner: *Current Permit Number:	
8. Type of Organization (check one): <input type="checkbox"/> Individual Owner <input type="checkbox"/> Partnership <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Utility <input type="checkbox"/> Local Agency <input type="checkbox"/> State Agency <input type="checkbox"/> Federal Agency			
9. General Nature of Business: Solar Electric Power Generation		Principal Product: Electricity	SIC Code (if known):
10. Distances (feet and direction to closest): _____ Fenceline _____ Residence _____ Business _____ School See AFC for this data.			
11. Facility Annual Throughput by Quarters (percent): 25 % 25 % 25 % 25 % _____ Fenceline _____ Residence		12. Expected Facility Operating Hours: 16 7 52 5840 _____ Business _____ School	
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13. Do you claim Confidentiality of Data (if yes, state nature of data on reverse in Remarks)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
14. Signature of Responsible Official: 		Official Title: Director	
Typed or Printed Name of Responsible Official: Scott A. Busa		Phone Number: (561) 691- 2889	Date Signed: 11/6/09
- For District Use Only -			
Application Number:	Invoice Number:	Permit Number:	Company/Facility Number:

**MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT
GENERAL APPLICATION, continued**

Page 2 of 2: please type or print

Stack No.	FT. agl Stack Height	FT. Stack Diameter	F deg Exhaust Temp	ACFM Exhaust Flow Rate	FT/SEC Exhaust Velocity
1					
2					
3					
4					
additional stacks					
5					
6					
7					
8					
See AFC and Appendices for this data.					
9					
10					
11					
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21					
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23					
24					
25					

Stack Height is the distance above ground level to discharge point (feet)
 Stack Diameter is the diameter (or equivalent circular diameter) of discharge point (nearest tenth foot)
 If using cross-sectional area (A in square feet), equivalent diameter is $D = (1.273A)^{0.5}$
 Exhaust Temp in degrees F, actual or estimated to nearest 50 deg F
 Exhaust Flow Rate at discharge point in actual cubic feet per minute (ACFM)
 Exhaust Velocity in feet per second, design or measured

16. Remarks (basis for confidentiality of data, process description, modification description, etc.):

None, See AFC Sections on Air Quality and Public Health, and Appendices.

If you wish to specify process information as proprietary or confidential, space is provided for this purpose.
 The kinds and rates of emissions may not be held confidential; emissions are subject to public disclosure.

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GENERAL APPLICATION, continued

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Stack No.	FT. agl Stack Height	FT. Stack Diameter	F deg Exhaust Temp	ACFM Exhaust Flow Rate	FT/SEC Exhaust Velocity
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2					
3					
4					
additional stacks					
5					
6					
7					
8					
See AFC and Appendices for this data.					
9					
10					
11					
12					

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- 15
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- 23
- 24
- 25

Stack Height is the distance above ground level to discharge point (feet)
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4						
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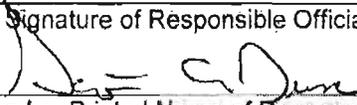
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GENERAL APPLICATION, continued**

Page 2 of 2: please type or print

Stack No.	FT. agl Stack Height	FT. Stack Diameter	F deg Exhaust Temp	ACFM Exhaust Flow Rate	FT/SEC Exhaust Velocity
1					
2					
3					
4					
additional stacks					
5					
6					
7					
8	See AFC and Appendices for this data.				
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Stack Height is the distance above ground level to discharge point (feet)
Stack Diameter is the diameter (or equivalent circular diameter) of discharge point (nearest tenth foot)
If using cross-sectional area (A in square feet), equivalent diameter is $D = (1.273A)^{0.5}$
Exhaust Temp in degrees F, actual or estimated to nearest 50 deg F
Exhaust Flow Rate at discharge point in actual cubic feet per minute (ACFM)
Exhaust Velocity in feet per second, design or measured

16. Remarks (basis for confidentiality of data, process description, modification description, etc.):

None, See AFC Sections on Air Quality and Public Health, and Appendices.

If you wish to specify process information as proprietary or confidential, space is provided for this purpose.
The kinds and rates of emissions may not be held confidential; emissions are subject to public disclosure.