



**DOCKET**

**08-AFC-5**

DATE AUG 10 2009

RECD AUG 17 2009

August 10, 2009

Jaime Hernandez  
Imperial County Air Pollution Control District  
150 South 9th Street  
El Centro, CA 92243

Subject: Solar Two Authority to Construct and Permit to Operate Review for  
ICAPCD Permit 3838

Dear Mr. Hernandez;

SES has reviewed the draft ATC/PTO for the Solar Two Project (Project) and this letter outlines our comments on the draft ATC/PTO. Since the initial ATC/PTO application was submitted to ICAPCD, SES has reviewed the entire project to find opportunities to reduce air emissions from the project during construction and operation. These changes were outlined in the responses to CEC data requests submitted in March 2009.

There are two changes that affect the ATC/PTO. The first is to the fire water pump, which will be electric, no longer diesel. The second change is a noted increase in fuel throughput for the gasoline tank which will be 85,000 gallons per year.

The only stationary sources of emission associated with the Project are one emergency diesel standby generator and one gasoline tank. Although there will also be fugitive dust road emissions associated with the Project due to travel on sealed and paved roads onsite.

SES is requesting that ICAPCD revise the emission estimates of fugitive dust from the travel on sealed and paved roads on the project site as discussed during our meeting on August 4, 2009. SES is requesting the complete EPA paved road and unpaved road emission factors be applied to the main access road and sealed roads, respectively, in place of the MDAQMD emission factors. The EPA emission factors include a factor that accounts for the small reduction in emissions due to local precipitation. Also, the MDAQMD emission factors are based on old versions of the EPA emission factors which have been updated recently. As agreed to at the August 4 meeting, fugitive dust from travel on the sealed roads will be estimated with the EPA unpaved road emission factor using a 90% dust control efficiency and a silt content of 7%. SES requests that ICAPCD estimate the fugitive dust from travel on the paved main access road, using the EPA paved road emission factor with a silt loading of 1.6 g/m<sup>2</sup> as outlined in the CARB, Emission Inventory Database (Section 7.8 SJV - Entrained Paved Road Dust - Rural Roads, June 2006, <http://www.arb.ca.gov/ei/areasrc/PMSJVPavedRoadMethod2003.pdf>). SES is recommending the use of the San Joaquin Valley rural road silt loading as CARB has not estimated a rural road silt loading for any other region in the state (<http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9.pdf>). This silt loading should be representative of the actual silt loading as periodic washing of this road will occur which will minimize the silt loading. URS has estimated the fugitive dust emissions from travel along the main access road and sealed roads using the techniques outlined above. These



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Imperial County Air Pollution Control District  
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emissions are presented in the attached spreadsheet. The total onsite fugitive dust emissions are predicted to be 108 lb/day and 19 tons/year.

SES also requests the following changes to the draft ATC/PTO:

- Remove all references to the diesel firewater pump.
- Change the gasoline tank throughput to 85,000 gallons per year and adjust the associated VOC emissions to match this throughput.
- Change all references to a black start engine to emergency generator.
- Change permit condition 3 in the Unpaved Roads within the Facility section to "The Permittee shall apply Soiltac soil conditioner or similar product on all unpaved roads once per year or as necessary to comply with application information."
- As all emissions of all nonattainment pollutants are estimated to be less than the ICAPCD offset threshold, remove all language referring to offsets and ERCs.

Please incorporate the information provided in this letter and from our discussion August 4<sup>th</sup>. If you have any questions please contact Ms. Julie Mitchell of URS Corporation or Mr. Richard Knox of SES to discuss. We look forward to receiving the revised draft ATC/PTO.

Sincerely,

URS CORPORATION

Julie Mitchell  
Senior Air Quality Scientist

cc: Israel Hernandez, Imperial County Air Pollution Control District  
Will Walters, California Energy Commission  
Richard Knox, Stirling Energy Systems  
Kim Whitney, Stirling Energy Systems

**Solar Two  
Fugitive Dust Emissions (on-site)**

**Travel on unpaved surfaces**

$E = k * (s/12)^a * (W/3)^b * [(365 - P)/365]$

90% Control due to application of Soiltac or similar product

EPA AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2

E = particulate emission factor (lb/VMT),

k = particle size multiplier for particle size range and units of interest

8.5 s = surface material silt content (%)

W = average weight (tons) of the vehicles traveling the road, and

C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

Construction sites - Scraper routes

constants

	PM <sub>2.5</sub>	PM <sub>10</sub>
k	0.15	1.5
a	0.9	0.9
b	0.45	0.45

12 P = Mean number of days per year with at least 0.01 inches of precipitation (from EL CENTRO 2 SSW COOP Station)

365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on sealed roads	Max Daily Distance per Vehicle to drive on sealed roads (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	PM <sub>2.5</sub> EF (lbs/VMT)	PM <sub>10</sub> EF (lbs/VMT)
Washing Vehicle	35	7	100%	7	245	12	8	30	0.198	1.985
LRU Maintenance Truck with Boom	20	7	100%	7	140	10	8	30	0.183	1.828
Staff & Security Truck	5	33	100%	33	165	2.25	24	30	0.093	0.934
Rubber-wheeled forklift with telescoping boom	2	10	100%	10	20	4	8	30	0.121	1.211
Forklift	2	10	100%	10	20	3	8	30	0.106	1.064
Telescoping Man Lift	7	10	100%	10	70	3	8	30	0.106	1.064
Staff Cars	100	3	0%	0	0	2.0	2	30	0.089	0.886
Van Pooling	4	3	0%	0	0	4	2	30	0.121	1.211
Visitor Cars	8	3	0%	0	0	2	8	22	0.089	0.886
Operations and Maintenance Supplies truck	1	3	0%	0	0	5	2	5	0.134	1.339
Waste Management truck	1	3	0%	0	0	20	2	5	0.250	2.498
Hazardous Waste truck	1	3	0%	0	0	20	2	5	0.250	2.498
Transport Tractor Trailers truck	1	10	70%	7	7	20	2	5	0.250	2.498

Vehicle Type	Watering Control Efficiency		PM <sub>10</sub> Emissions (lb/hr)		PM <sub>10</sub> Emissions (lb/day)		% of daily emissions	PM <sub>10</sub> Emissions (tons/year)		PM <sub>2.5</sub> Emissions (lb/hr)		PM <sub>2.5</sub> Emissions (lb/day)		PM <sub>2.5</sub> Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Washing Vehicle	0%	90%	60.78	6.08	486.27	48.63	47.03%	87.53	8.75	6.08	0.61	48.63	4.86	8.75	0.88
LRU Maintenance Truck with Boom	0%	90%	32.00	3.20	255.98	25.60	24.76%	46.08	4.61	3.20	0.32	25.60	2.56	4.61	0.46
Staff & Security Truck	0%	90%	6.42	0.64	154.19	15.42	14.91%	27.75	2.78	0.64	0.06	15.42	1.54	2.78	0.28
Rubber-wheeled forklift with telescoping boom	0%	90%	3.03	0.30	24.21	2.42	2.34%	4.36	0.44	0.30	0.03	2.42	0.24	0.44	0.04
Forklift	0%	90%	2.66	0.27	21.27	2.13	2.06%	3.83	0.38	0.27	0.03	2.13	0.21	0.38	0.04
Telescoping Man Lift	0%	90%	9.31	0.93	74.45	7.45	7.20%	13.40	1.34	0.93	0.09	7.45	0.74	1.34	0.13
Staff Cars	0%	90%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Van Pooling	0%	90%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Visitor Cars	0%	90%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operations and Maintenance Supplies truck	0%	90%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste Management truck	0%	90%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hazardous Waste truck	0%	90%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Transport Tractor Trailers truck	0%	90%	8.74	0.87	17.48	1.75	1.69%	0.52	0.05	0.87	0.09	1.75	0.17	0.05	0.01
<b>TOTAL Fugitive emissions for vehicles traveled on sealed road (paved)</b>			<b>122.94</b>	<b>12.29</b>	<b>1033.87</b>	<b>103.39</b>		<b>183.47</b>	<b>18.35</b>	<b>12.29</b>	<b>1.23</b>	<b>103.39</b>	<b>10.34</b>	<b>18.35</b>	<b>1.83</b>

**Travel on paved road**

$$E = [ k * (sL/2)^{0.65} * (W/3)^{1.5} - C ] (1 - P/4N)$$

Emission estimates same as those presented in the CEC Data Requests March 2009

EPA AP-42 Section 13.2.1 Paved Roads Equation 1

E = particulate emission factor (lb/VMT),

k = particle size multiplier for particle size range and units of interest

1.6 sL = road surface silt loading (grams per square meter) (g/m<sup>2</sup>),

W = average weight (tons) of the vehicles traveling the road, and

C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

From CARB - Emission Inventory Database - Section 7.8 SJV - Entrained Paved Road Dust - Rural Roads (emission inventory code: 640-643-540)

constants

	PM <sub>2.5</sub>	PM <sub>10</sub>
k	0.0024	0.016
C	0.00036	0.00047

12 P = Mean number of days per year with at least 0.01 inches of precipitation (from EL CENTRO 2 SSW COOP Station)

365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on paved road	Max Daily Distance per Vehicle to drive on paved road (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	PM <sub>2.5</sub> EF (lbs/VMT)	PM <sub>10</sub> EF (lbs/VMT)
Washing Vehicle	35	7	0%	0	0	12	8	30	0.016	0.109
LRU Maintenance Truck with Boom	20	7	0%	0	0	10	8	30	0.012	0.083
Staff & Security Truck	5	33	0%	0	0	2.25	24	30	0.001	0.008
Rubber-wheeled forklift with telescoping boom	2	10	0%	0	0	4	8	30	0.003	0.021
Forklift	2	10	0%	0	0	3	8	30	0.002	0.013
Telescoping Man Lift	7	10	0%	0	0	3	8	30	0.002	0.013
Staff Cars	100	3	100%	3	300	2	2	30	0.001	0.007
Van Pooling	4	3	100%	3	12	4	2	30	0.003	0.021
Visitor Cars	8	3	100%	3	24	2	8	22	0.001	0.007
Operations and Maintenance Supplies truck	1	3	100%	3	3	5	2	5	0.004	0.029
Waste Management truck	1	3	100%	3	3	20	2	5	0.035	0.236
Hazardous Waste truck	1	3	100%	3	3	20	2	5	0.035	0.236
Transport Tractor Trailers truck	1	10	30%	3	3	20	2	5	0.035	0.236

Vehicle Type	Watering Control Efficiency		PM <sub>10</sub> Emissions (lb/hr)		PM <sub>10</sub> Emissions (lb/day)		% of daily emissions	PM <sub>10</sub> Emissions (tons/year)		PM <sub>2.5</sub> Emissions (lb/hr)		PM <sub>2.5</sub> Emissions (lb/day)		PM <sub>2.5</sub> Emissions (tons/year)	
	Unmitigated	Mitigated <sup>7</sup>	Unmitigated	Mitigated <sup>7</sup>	Unmitigated	Mitigated <sup>7</sup>		Unmitigated	Mitigated <sup>7</sup>	Unmitigated	Mitigated <sup>7</sup>	Unmitigated	Mitigated <sup>7</sup>	Unmitigated	Mitigated <sup>7</sup>
Washing Vehicle	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LRU Maintenance Truck with Boom	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber-wheeled forklift with telescoping boom	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Telescoping Man Lift	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff Cars	0%	0%	1.05	1.05	2.10	2.10	44.46%	0.38	0.38	0.11	0.11	0.23	0.23	0.04	0.04
Van Pooling	0%	0%	0.12	0.12	0.25	0.25	5.25%	0.04	0.04	0.02	0.02	0.03	0.03	0.01	0.01
Visitor Cars	0%	0%	0.02	0.02	0.17	0.17	3.56%	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
Operations and Maintenance Supplies truck	0%	0%	0.04	0.04	0.09	0.09	1.84%	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Waste Management truck	0%	0%	0.35	0.35	0.71	0.71	14.96%	0.02	0.02	0.05	0.05	0.11	0.11	0.00	0.00
Hazardous Waste truck	0%	0%	0.35	0.35	0.71	0.71	14.96%	0.02	0.02	0.05	0.05	0.11	0.11	0.00	0.00
Transport Tractor Trailers truck	0%	0%	0.35	0.35	0.71	0.71	14.96%	0.02	0.02	0.05	0.05	0.11	0.11	0.00	0.00
<b>TOTAL Fugitive emissions for vehicles traveled on paved road</b>			<b>2.30</b>	<b>2.30</b>	<b>4.73</b>	<b>4.73</b>		<b>0.51</b>	<b>0.51</b>	<b>0.30</b>	<b>0.30</b>	<b>0.61</b>	<b>0.61</b>	<b>0.06</b>	<b>0.06</b>

## on-site fugitive

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Max. Operating Hours / Day	Assumed distance percentage to drive on sealed road (paved)	Assumed distance percentage to drive on paved road	Sealed Road - PM <sub>10</sub> Fugitive Emissions (lb/day)	Paved Road PM <sub>10</sub> Fugitive Emissions (lb/day)	Total PM <sub>10</sub> Fugitive Emissions (lb/day)	Sealed Road - PM <sub>10</sub> Fugitive Emissions (ton/yr)	Paved Road PM <sub>10</sub> Fugitive Emissions (ton/yr)	Total PM <sub>10</sub> Fugitive Emissions (ton/yr)
Washing Vehicle	35	7	8	100%	0%	48.63	0.00	48.63	8.75	0.00	8.75
LRU Maintenance Truck with Boom	20	7	8	100%	0%	25.60	0.00	25.60	4.61	0.00	4.61
Staff & Security Truck	5	33	24	100%	0%	15.42	0.00	15.42	2.78	0.00	2.78
Rubber-wheeled forklift with telescoping boom	2	10	8	100%	0%	2.42	0.00	2.42	0.44	0.00	0.44
Forklift	2	10	8	100%	0%	2.13	0.00	2.13	0.38	0.00	0.38
Telescoping Man Lift	7	10	8	100%	0%	7.45	0.00	7.45	1.34	0.00	1.34
Staff Cars	100	3	2	0%	100%	0.00	2.10	2.10	0.00	0.38	0.38
Van Pooling	4	3	2	0%	100%	0.00	0.25	0.25	0.00	0.04	0.04
Visitor Cars	8	3	8	0%	100%	0.00	0.17	0.17	0.00	0.02	0.02
Operations and Maintenance Supplies truck	1	3	2	0%	100%	0.00	0.09	0.09	0.00	0.00	0.00
Waste Management truck	1	3	2	0%	100%	0.00	0.71	0.71	0.00	0.02	0.02
Hazardous Waste truck	1	3	2	0%	100%	0.00	0.71	0.71	0.00	0.02	0.02
Transport Tractor Trailers truck	1	10	2	70%	30%	1.75	0.71	2.46	0.05	0.02	0.07
						<b>103.39</b>	<b>4.73</b>	<b>108.11</b>	<b>18.35</b>	<b>0.51</b>	<b>18.86</b>





BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
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**APPLICATION FOR CERTIFICATION**  
*For the SES SOLAR TWO PROJECT*

**Docket No. 08-AFC-5**

**PROOF OF SERVICE**

(Revised 8/10/09)

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\*indicates change

**DECLARATION OF SERVICE**

I, Kimberly S Whitney, declare that on Aug. 13, 2009, I served and filed copies of the attached, Permit 3838 dated, August 11, 2009. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [\[http://www.energy.ca.gov/sitingcases/solartwo/index.html\]](http://www.energy.ca.gov/sitingcases/solartwo/index.html).

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

**(Check all that Apply)**

**FOR SERVICE TO ALL OTHER PARTIES:**

sent electronically to all email addresses on the Proof of Service list;

by personal delivery or by depositing in the United States mail at Phoenix, AZ with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

**AND**

**FOR FILING WITH THE ENERGY COMMISSION:**

sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (**preferred method**);

**OR**

depositing in the mail an original and 12 paper copies, as follows:

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 08-AFC-5  
1516 Ninth Street, MS-4  
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[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

I declare under penalty of perjury that the foregoing is true and correct.



Kimberly S Whitney