CH2M HILL 2485 Natomas Park Drive Suite 600 Sacramento, CA 95833 Tel 916-920-0300 Fax 916-920-8463

 DOCKET

 07-AFC-5

 DATE
 June 02 2009

 RECD.
 June 02 2009

June 2, 2009 File No.: 04.02.16.02 Project No. 357891

Mr. John Kessler, Project Manager California Energy Commission Systems Assessment and Facilities Siting Division 1516 9th Street, MS 15 Sacramento, CA 95814-5504

RE: Data Response, Set 1L Ivanpah Solar Electric Generating System (07-AFC-5)

Dear Mr. Kessler:

On behalf of Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC (Applicant), please find attached one original and four hard copies, plus five CD copies of Data Response, Set 1L, which contains the Streambed Alteration Agreement Application.

Please call me if you have any questions.

Sincerely,

CH2M HILL Carrier

John L. Carrier, J.D. Program Manager

Enclosure

c: POS List Project File

Ivanpah Solar Electric Generating System (ISEGS) (07-AFC-5)

Data Response, Set 1L

(Response to Data Request: Biological Resources)

Submitted to the California Energy Commission

Submitted by Solar Partners I, LLC; Solar Partners II, LLC; Solar Partners IV, LLC; and Solar Partners VIII, LLC

June 2, 2009

With Assistance from

CH2MHILL 2485 Natomas Park Drive Suite 600 Sacramento, CA 95833

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Introduction

Attached are Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC (Applicant) response to the California Energy Commission (CEC) Staff's data request numbers 111 for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) Project (07-AFC-5). The CEC Staff served these data requests on December 12, 2007, as part of the discovery process for Ivanpah SEGS. The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as CEC Staff presented them and are keyed to the Data Request numbers (1 through 116). New graphics or tables are numbered in reference to the Data Request number. For example, the first attachment used in response to Data Request 19 would be numbered Table DR19-1A.

The Applicant looks forward to working cooperatively with the CEC and BLM staff as the Ivanpah SEGS Project proceeds through the siting process. We trust that these responses address the Staff's questions and remain available to have any additional dialogue the Staff may require.

Background

AFC Table 5.2-15 provides an overview of permits required for biological resources and indicates that the process for each requires approximately six to nine months. The AFC also refers to informal consultation with staff members at agencies regarding the project and potential biological issues of concern. However, staff could not find any documentation on the dates, personnel, and content of communications with the California Department of Fish and Game (CDFG), U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), or U.S. Fish and Wildlife Service (USFWS) regarding sensitive biological resources, such as the federally threatened desert tortoise, jurisdictional waters, and permitting requirements. In addition, a USFWS-approved Biological Assessment (BA) with agreed upon mitigation needs to be provided so the Preliminary and Final Staff Assessments can be completed.

Data Request

- 19. For jurisdictional waters, please provide expected impact acreages as well as mitigation ratios and acreages for the Clean Water Act section 401 and 404 permits and CDFG Streambed Alteration Agreement, as appropriate.
- **Response:** A Streambed Alteration Agreement (SAA) application has been filed with CDFG. A copy of the application is provided as Attachment DR19-2A. The following seven documents were included with the SAA application. Since all of these documents have been filed and served on the parties, they have not been included in this filing.

Attachment No.	Document Title	Filed as/Date
BR5-1A	Desert Tortoise Translocation/Relocation Plan	Supplemental Data Response, Set 2D / May 7, 2009
DR19-1B	Wetland Delineation Report (Revised)	Data Response Set 1G / September 10, 2008
DR124-1A	Draft Biological Assessment*	Data Response, Set 2D / September 12, 2008
DR125-3A	Draft Closure, Revegetation and Relocation Plan*	Data Response Set 2G / January 28, 2009
DR130-2B	Plan of Development Project Description	Data Response Set 2I / May 18, 2009
DR139-1A	Exhibit BSE-3, Hydrology Study	Data Response Set 2I / May 18, 2009
DR140-1B	Preliminary Draft Drainage, Erosion, and Sediment Control Plan	Data Response Set 2H / May 13, 2009

*These documents are currently being revised.

ATTACHMENT DR19-2A Streambed Alteration Agreement Application



CH2M HILL 2485 Natomas Park Drive Suite 600 Sacramento, CA 95833 Tel 916.920.0300 Fax 916.920.8463

June 2, 2009

Ms. Becky Jones Eastern Sierra and Inland Deserts (Region 6) LSAA Program 4665 Lampson Avenue, Suite J Los Alamitos, CA 90720

Subject: CDFG Streambed Alteration Agreement for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) Project

Dear Ms. Jones,

Construction and operation of the Ivanpah SEGS project would result in the diversion and/or substantial changes to the natural ephemeral drainages within the project boundary. These drainages were evaluated during a wetland delineation conducted in 2007 and 2008. In compliance with Section 1602 of the Fish and Game Code, enclosed is a completed standard California Fish and Game (CDFG) Streambed Alteration Agreement (SAA) Form (FG2023) and a check for \$14,400. Additional details on project construction, drainage and vegetation resources present, and impacts that are anticipated to occur as a result of project implementation are provided in Exhibit A, Supplemental Information.

Seven other environmental documents that have been prepared in support of this project will also be needed to complete your review. They include the following Attachments:

BR5-1A	Desert Tortoise Translocation/Relocation Plan
DR19-1B	Wetland Delineation Report (Revised)
DR124-1A	Draft Biological Assessment*
DR125-3A	Draft Closure, Revegetation and Relocation Plan*
DR130-2B	Plan of Development Project Description
DR139-1A	Exhibit BSE-3, Hydrology Study
DR140-1B	Preliminary Draft Drainage, Erosion, and Sediment Control Plan

For your convenience, copies of all of these documents are being provided to CDFG as part of this application package. Additionally, all of the above documents are provided in electronic format (enclosed). Should you have any questions regarding this application, please contact John Carrier, Program Manager, at 916-286-0224, or via email at: jcarrier@ch2m.com.

Sincerely, CH2M HILL

Annie)

John L. Carrier, J.D. Program Manager

Enclosure

* These documents are currently being updated. Copies will be provided once complete.



BRIGHTSOURCE ENERGY, INC.

California Dept of Fish and Game Date Type Reference 5/26/2009 Bill Ckreq052609

5/27/2009 Original Amt. Balance Due Discount Payment 14,400.00 14,400.00 14,400.00 Check Amount 14,400.00

7550

Wells Fargo Bank-612 CDFG 1602 (Streambed Alteration Permit) Appli

14,400.00

FOR DEPARTMENT USE ONLY							
Date Received	Amount Received	Amount Due	Amount Due Date Complete Notification No.				
	\$	\$					



STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME

NOTIFICATION OF LAKE OR STREAMBED ALTERATION



Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Solar Partners I, LLC; Solar Partners II, LLC; Solar Partners VIII, LLC, and Solar Partners IV, LLC.				
Business/Agency	Contact: Steve De Young, Director, Environmental, Safety and Health, Bright Source Energy				
Street Address	1999 Harrison Street, Ste. 2150				
City, State, Zip	Oakland, CA 94612				
Telephone	(510) 550-8903 Fax				
Email	sdeyoung@brightsourceenergy.com				

2. CONTACT PERSON (Complete only if different from applicant)

Name	Russell Huddleston				
Street Address	155 Grand Ave, Suite 1000				
City, State, Zip	Oakland, CA 94612				
Telephone	(510) 587-7681 Fax (510) 893-8205				
Email	Russell.huddleston@ch2m.com				

3. PROPERTY OWNER (Complete only if different from applicant)

Name	Bureau of Land Management (BLM), Needles Field Office. Contact: George Meckfessel					
Street Address	1303 South Hwy 95					
City, State, Zip	Needles, CA 92363-4228					
Telephone	Phone: (760) 326-7008 Fax Fax: (760) 326-7099					
Email	George_Meckfessel@ca.blm.gov					

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name			Ivanpah Solar Electric Generating System				
B. Agreement Term Requested		X Regular (5 years or less)					
			□ Long-term (<i>greater than 5 years</i>)				
C. Project Term			D. Seasonal Work Period		E. Number of Work Days		
Beginning (year) Ending (year)			Start Date (month/day)	End Date (month/day)			
2010	2013				See Exhibit A		

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

5. AGREEMENT TYPE

Che	Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.					
Α.	X Standard (Most construction projects, excluding the categories listed below)					
В.	Gravel/Sand/Rock Extraction (<i>Attachment A</i>) Mine I.D. Number:					
C.	□ Timber Harvesting (<i>Attachment B</i>)	THP Number:				
D.	Water Diversion/Extraction/Impoundment (Attachment C) SWRCB Number:					
E.	□ Routine Maintenance (<i>Attachment D</i>)					
F.	□ DFG Fisheries Restoration Grant Program (FRGP)	FRGP Contract Number:				
G.	□ Master					
Н.	□ Master Timber Harvesting					

6. FEES

Plea and	Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. <i>Note: The Department may not process this notification until the correct fee has been received.</i>						
A. P	A. Project Cost C. Project Fee						
1	Ivanpah SEGS (including three separate solar plants – as described in Attachment A). Fee for each site plant = \$4,000	>500,000	\$12,000				
2							
3							
4							
5	5						
		D. Base Fee (if applicable)	\$2,400				
		E. TOTAL FEE ENCLOSED	\$14,400				

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?					
□Yes (Provide the information below) X No Applicant:					
B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?					
X No □Yes (Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.)					
		□ Cont	inued on additional page(s)		

8. PROJECT LOCATION

A. Address or description of project location.

(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)

The proposed site is within the Ivanpah Valley located in eastern San Bernardino County, 4.5 miles southwest of Primm, Nevada, 3.1 miles southwest of the California-Nevada border (see figures provided in Exhibit A). The site is located in Township 17N, Range 14E, and Township 16N, Range 14E, on land administered by the Bureau of Land Management. The center of the project is located between Sections 33 and 34 of Township 17N, Range 14E. Access to the site is via the Yates Well Road interchange on Interstate 15 and Colosseum Road. The site is located 0.5 mile to the west of the Primm Valley Resorts Desert Golf Club.

 \Box Continued on additional page(s)

B. River, stream, or lake affected by the project. Several ephemeral drainages (see Attachment DR19-1B, Wetland Delineation Report)						B, Wetland			
C. What water	body is	the river, s	stream, or lake trib	outary to	o? lva do	inpah wn slo	Dry Lake is locate ope and east of the second seco	ated approximate the project site.	ely 1.6 miles
D. Is the river state or federa	or strea al Wild a	m segment nd Scenic I	affected by the p Rivers Acts?	roject lis	sted in the		□Yes	X No	□Unknown
E. County	San Be	ernardino							
F. USGS 7.5 N	Minute C	Quad Map N	Name		G. Towns	hip	H. Range	I. Section	J. ¼ Section
Ivanpah Lake 7.5-Minute Qu	United S adrangl	States Geo e Map	logical Survey (U	SGS)	16N, ⁻	17N	14E	See Exhibit	A See Exhibit A
								X Continued on	additional page(s)
K. Meridian (c	heck on	e)	□Humboldt	⊐Mt. Di	ablo X	San B	ernardino		
L. Assessor's	Parcel N	lumber(s)							
0573-101-03, 0	573-101- 573-161-	04, 0573-10 15, 0573-16	1-05, 0573-101-09, 1-16, and 0573-171	0573-10 -12)1-10, 0573-	161-02	2, 0573-161-03, 0	573-161-09, 0573	-161-10,
				·-				Continued or	additional page(s)
M. Coordinate	s (If ava	nilable, prov	vide at least latitud	de/longi	tude or UTI	И соо	rdinates and ch	eck appropriate	boxes)
		Latitude: 35.55326 Longitude: -115.43462							
Latitude/Longi	tude	Degrees/Minutes/Seconds X Decimal Degrees Decimal Minutes					nutes		
UTM		Easting:	ing: Northing: Zone 10 Zone 1				□Zone 11		
Datum used for Latitude/Longitude or UTM				□ NAD 27 X NAD 83 or WGS 84			NGS 84		

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

9. PROJECT CATEGORY AND WORK TYPE (Check each box that applies)

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	Х		
Bank stabilization – rip-rap/retaining wall/gabion	Х		
Boat dock/pier			
Boat ramp			
Bridge			
Channel clearing/vegetation management	Х		
Culvert	Х		
Debris basin			
Dam			
Diversion structure – weir or pump intake			
Filling of wetland, river, stream, or lake	Х		
Geotechnical survey			
Habitat enhancement – revegetation/mitigation			
Levee			
Low water crossing			
Road/trail			
Sediment removal – pond, stream, or marina			
Storm drain outfall structure			
Temporary stream crossing			
Utility crossing : Horizontal Directional Drilling			
Jack/bore			
Open trench			
Other (specify):			

10. PROJECT DESCRIPTION

- A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included. -Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
 - -Specify the type and volume of materials that will be used.
 - -If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

Please see Attachment DR130-2B for a complete project description.

		X Continued	on additional page(s)
B. Specify the equipment and machinery that will be used to con Please see Attachment DR130-2B for a complete project description	nplete the project. otion.		
		X Continued	l on additional page(s)
C. Will water be present during the proposed work period (specitive the stream, river, or lake (specified in box 8.B).	fied in box 4.D) in	□Yes	X No (Skip to box 11)
D. Will the proposed project require work in the wetted portion of the channel?	□Yes (<i>Enclose a p</i> X No	lan to divert	water around work site)

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

Most of the project site will maintain the original grades and natural drainage features present within the project area (see Appendix A of Attachment DR130-2B). Construction of project facilities including power blocks, access roads, substation and administration building will result in permanent impacts to 49,943 linear feet (6.06 acres) of ephemeral desert washes within the project area.

X Continued on additional page(s)

B. Will the project affect any vegetation?	X Yes (Complete the tables below) □No		
Vegetation Type		Permanent Impact		
		Linear feet:		
Mojave Creosote Brush Scrub		Total area: See Project Description:		
		Attachment DR130-2B		
		Linear feet:		
		Total area:		
Tree Species	Number of Trees to be Removed	Trunk Diameter (range)		
None				
		X Continued on additional page(s)		
C. Are any special status animal or plant	species, or habitat that could support suc	ch species, known to be present on or		
near the project site?				
X Yes (List each species and/or describe	the habitat below) \Box No \Box I	Inknown		
Moiave Desert Tortoise (Conherus agass	sizii)			
	<i>ii i i i i i i i i i</i>	_		
		\Box Continued on additional page(s)		
D. Identify the source(s) of information the	at supports a "yes" or "no" answer above	in Box 11.C.		
Presence/Absence Survey for the Mojave Desert Tortoise (Gopherus agassizii), on the proposed Ivanpah Solar Electric				
Generating System in Ivanpah Valley, Sa	n Bernardino County, California			
		\Box Continued on additional page(s)		
E. Has a biological study been completed	I for the project site?			
X Yes (Enclose the biological study)				
See Attachment DP124 1A				
Note: A biological assessment or study n	hav be required to evaluate potential proje	ect impacts on biological resources		
F. Has a hydrological study been comple	ted for the project or project site?			
X Yes (Enclose the hydrological study)	⊔ No			
See Exhibit BSE-3				
Note: A budrological study or starting				
INDIE. A INVITOIODICAL STUDY OF OTHER INFORM	nation on aito hydroylica /a a flasse -l	and abarastariation and/ar flagd		
requirence intervale) may be required to	nation on site hydraulics (e.g., flows, char avaluate potential preject imposts on hur	nnel characteristics, and/or flood		

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses	s during and after co	nstruction.
Please see: Attachment DR140-1B: Preliminary Draft, Drainage, Erosion, and Sedim (Revision 2)	nent Control Plan,	
Cont	inued on additional pa	ge(s)
B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and pla	nt resources.	
DR125-3A, Draft Closure, Revegetation and Rehabilitation Plan		
X Cont	inued on additional pa	ge(s)
C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, an	d plant resources.	
Mitigation and/or compensation measures to protect wildlife and plant resources are CDFG and BLM management.	under negotiation	with
	Continued on addition	onal page(s)
13. PERMITS		
List any local, state, and federal permits required for the project and check the correspondir each permit that has been issued.	ng box(es). Enclose	a copy of
A LLS Fish and Wildlife Service, Colifernia Department of Fish and Come Insidental Take Permit	X Applied	
С.		
D. Unknown whether \Box local, \Box state, or \Box federal permit is needed for the project. (<i>Check</i>	each box that applie	es)
	Continued on addit	ional page(s)

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?					
\Box Yes (Check the box for	each CEQA, NEPA, CESA, a	nd ESA documer	nt that has been prepared an	d enclose a copy of each)	
X No (Check the box for e	əach CEQA, NEPA, CESA, an	nd ESA documen	t listed below that will be or is	s being prepared)	
□Notice of Exemption	Mitigated Negative I	Declaration	X NEPA document (<i>t</i> y	/pe): EIS	
□Initial Study	X Environmental Impa	ct Report	\Box CESA document (<i>t</i>)	ype):	
□Negative Declaration	□Notice of Determinat	ion <i>(Enclose)</i>	X ESA document (<i>typ</i>	ve): BA	
□THP/ NTMP	X Mitigation, Monitorin	g, Reporting Pl	an		
B. State Clearinghouse	Number (<i>if applicable</i>)				
C. Has a CEQA lead ag	ency been determined?	X Yes (Com	olete boxes D, E, and F)	\Box No (Skip to box 14.G)	
D. CEQA Lead Agency	California Energy Commis	ssion			
E. Contact Person	John Kessler		F. Telephone Number	916-654-4679	
G. If the project describe	ed in this notification is part	of a larger proj	ject or plan, briefly describ	e that larger project or plan.	
□ Continued on additional page(s)					
H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?					
□Yes (Enclose proof of payment) X No (Briefly explain below the reason a filing fee has not been paid)					
The filing fee will be paid before the filing of the notice of determination per Section 21080.5 of the Public Resources Code.					
Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid					

15. SITE INSPECTION

Check one box only.
□ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.
X I request the Department to first contact (<i>insert name</i>) <u>George Meckfessel</u> at (<i>insert telephone number</i>) <u>(760) 326-7008</u> to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

X Yes (Please enclose the information via digital media with the completed notification form)

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signature of Applicant or Applicant's Authorized Representative

5/27/09

Date

Steve De Young

Print Name

Exhibit A

Supplemental Information for the California Department of Fish and Game 1600 Streambed Alteration Agreement Application

Ivanpah Solar Energy Project: Eastern San Bernardino County, California

Prepared for

Solar Partners I, LLC Solar Partners II, LLC Solar Partners IV, LLC Solar Partners VIII, LLC

June 2009

CH2MHILL 2485 Natomas Park Drive Suite 600 Sacramento, CA 95833

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Tables

Table A-1	Area Affected by Ivanpah SEGS
Table A-2	Summary of Ephemeral Washes Identified in the Project Study Area

Figures

- A-1 Vicinity Map
- A-2 Site Plan and Linear Corridors
- A-3 Fiber Optic Route
- A-4 Eldorado Ivanpah Transmission Project Access Roads
- A-5 Ivanpah 1 and Colosseum Road
- A-6 Ivanpah 2, Substation and Administration Area

Attachments

BR5-1ADesert Tortoise Translocation/Relocation PlanDR19-1BWetland Delineation Report (Revised)DR124-1ADraft Biological AssessmentDR125-3ADraft Closure, Revegetation and Relocation PlanDR130-2BPlan of Development Project DescriptionDR139-1AExhibit BSE-3, Hydrology StudyDR140-1BPreliminary Draft Drainage, Erosion, and Sediment Control Plan

Question 1 – Applicant Information

Solar Partners I, LLC; Solar Partners II, LLC; Solar Partners VIII, LLC, the owners of the three separate solar plants, and Solar Partners IV, LLC, the owner of shared facilities required by the three solar plants (the "Applicant") are proposing to develop a solar facility (together referred to as the Ivanpah Solar Electric Generating System, or Ivanpah SEGS).

The three plants would be separately owned and operated by Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC to facilitate the construction, financing, and possible sale of the three separate plants. In addition, a fourth company, Solar Partners IV, LLC, would own the shared facilities that are required for the operation of each of the solar plants. These four companies are Delaware limited liability companies. BrightSource Energy Inc. (BSE), a Delaware corporation, is a technology and development company, and the parent company of the Solar Partners entities.

Questions 4C - 4E – Project Name and Agreement Term and Construction Schedule

Construction of Ivanpah SEGS, from site preparation and grading to commercial operation, is expected to begin about the First Quarter of 2010 and be completed within 48 months. The phasing is planned so that Ivanpah 1 (southern plant) would be constructed first, followed by Ivanpah 2 (middle plant), then Ivanpah 3 (northern plant), though the order of construction may change. Construction of each plant would begin about 12 months following the start of the prior plant. Construction of the shared facilities would occur with the first solar plant. Commercial operation of the last plant is expected to occur during the fourth quarter of 2013. Ivanpah SEGS is designed for an operating life of 50 years.

There would be an average and peak workforce of approximately 474 and 959, respectively, of construction craft people, supervisory, support, and construction management personnel onsite during construction. The peak construction site workforce level is expected to occur in the 32nd month of construction.

Question 8 – Project Location

Ivanpah SEGS will be located in southern California's Mojave Desert, in San Bernardino County, California, on federal land managed by the BLM. It is located about 3.1 miles west of the California/Nevada border, to the west of Ivanpah Dry Lake, just north of Interstate 15 (I-15) – about 48 miles south of Las Vegas, Nevada (see Figure A-1, all figures are located at the end of this Exhibit).

Legal Description	Acres
San Bernardino Principal Meridian	1100
Sur Demaranto i incipar Meridian	
Ivanpah 1 Site	913.50
T. 16 N. R.14 E.,	
Sec. 2: Lots 2, 3, 4, and SW ¹ / ₄ NE ¹ / ₄ , S ¹ / ₂ NW ¹ / ₄	4. SW ¹ /4. W ¹ /2SE ¹ /4
Sec. 3: Lots 1, 2, and S ¹ / ₂ NE ¹ / ₄ , SE ¹ / ₄ NW ¹ / ₄ , S ¹ / ₂	/2SW ¹ /4, SE ¹ /4
Sec. 10: NE ¹ / ₄ , E ¹ / ₂ NW ¹ / ₄	,
Sec. 11: W ¹ / ₂ NE ¹ / ₄ , NW ¹ / ₄	
Ivanpah 2 Site	920.74
T. 17 N., R. 14 E.,	
Sec. 27: SW ¹ / ₄ SE ¹ / ₄ , SW ¹ / ₄	
Sec. 28: SE ¹ / ₄ SW ¹ / ₄ , SE ¹ / ₄	
Sec. 33: E ¹ / ₂ , E ¹ / ₂ W ¹ / ₂	
Sec. 34: W ¹ / ₂ E ¹ / ₂ , W ¹ / ₂	
Ivanpah 3 Site	1,836.27
T. 17 N., R.14 E.,	
Sec. 20: E ¹ / ₂ , E ¹ / ₂ W ¹ / ₂	
Sec. 21: All	
Sec. 22: W ¹ / ₂ W ¹ / ₂	
Sec. 27:W ¹ / ₂ NW ¹ / ₄ , NW ¹ / ₄ SW ¹ / ₄	
Sec. 28: N ¹ / ₂ , SW ¹ / ₄ , N ¹ / ₂ SE ¹ / ₄ , SW ¹ / ₄ SE ¹ / ₄	
Sec. 29: E ¹ / ₂ , SE ¹ / ₄ NW ¹ / ₄ , E ¹ / ₂ SW ¹ / ₄	
Administrative Site and Substation	25.00
T. 16 N., R. 14 E.,	
Sec. 3: W ¹ / ₂ NE ¹ / ₄ , W ¹ / ₂ NW ¹ / ₄	
Sec. 4: E ¹ / ₂ NE ¹ / ₄	
T + 1 + (6 + 1 +	
Iotal Allected Acreage	3093.48
TUP (Temp construction area)	
for (remp construction area)	
T 16 N D 14 E	

Subpart F: Township, Range, Section and ¼ Section

T. 16 N., R. 14 E., Sec. 3: W¹/₂NE¹/₄, NE¹/₄, N¹/₂SW¹/₄ Sec. 4: NE¹/₄, NE¹/₄SE¹/₄

T. 17 N., R. 14 E., Sec. 33: SE¼SW¼, S½SE¼ Sec. 34: S½SW¼, SW¼SE¼

Question 10 - Project Description

Overview

Three solar generating plants are proposed: Ivanpah 1, Ivanpah 2, and Ivanpah 3 (collectively, these are referred to as the Ivanpah SEGS). Infrastructure elements include a construction logistics area, substation, a utility corridor, and other permanent facilities like an administration/warehouse building, transmission towers, linear facilities and access roads. The site plan and linear corridors are shown in Figure A-2. The total area required for construction and operation of all three solar plant sites including the shared infrastructure is approximately 4,072 acres (minus the acreage for existing established dirt roads equals about 4,065 acres, net). This includes approximately 3,715 acres of permanent effects and approximately 357 acres¹ of work area that would be subject to restoration following construction.

In addition to the project site, the action area includes the installation of a fiber optic line. This optic fiber route consist of two segments. The first segment is from Ivanpah substation to Mountain Pass substation using the existing Nipton 33-kV distribution line poles built along the transmission line corridor that crosses between Ivanpah 1 and 2 (see Figure A-3). The second segment would be from Mountain Pass substation to the telecommunications facility approximately 1.5 miles away at an interface point to be designated by the local telecommunication carrier. The fiber-optic cable would be installed on the existing Earth 12-kV distribution line poles.

Construction access to the plant site would be from Colosseum Road to the plant entrance road (Figure A-2). Colosseum Road is an existing dirt road, which is planned to be paved from the Primm Valley Golf Club to the project site. The project would re-route a portion of Colosseum Road around the southern end of Ivanpah 2. Within the project site, paved access roads would be created in several locations to access the power blocks of the three Ivanpah plants and provide all-season emergency medical and fire access. The utility corridor located north of Ivanpah 3 would be accessed via the existing dirt road that parallels the existing Kern River gas line.

Solar Generating Facility

The solar generating facility is composed of solar fields with one heliostat (mirror) array constructed within each 100-MW plant and five heliostat arrays constructed within the 200-MW plant. Each heliostat array would be arranged around a single centralized solar power tower (SPT).

Electrical Transmission and Telecommunications

Ivanpah 1, 2, and 3 would be interconnected to the Southern California Edison (SCE) grid through an upgraded SCE 115-kV line passing between Ivanpah 1 and 2 on a northeast-southwest utility corridor. A substation would be constructed between Ivanpah 1 and 2 (to be known as the Ivanpah Substation) that would be used to connect Ivanpah SEGS to the electrical grid (see Figure A-2).

¹ These numbers may be less once the stormwater plan is completed.

In addition, the proposed Ivanpah substation would also require new telecommunication infrastructure to be installed to provide protective relay circuit, Supervisory Control and Data Acquisition (SCADA) circuit, data, and telephone services. The telecommunication path from Ivanpah substation to local carrier facility interface at Mountain Pass area consists of approximately 8 miles of fiber optic cable to be installed overhead on existing poles and new underground conduits to be constructed in the substation and telecom carrier interface point.

This fiber optic route consists of two segments. The first segment is from Ivanpah Substation to Mountain Pass Substation using the existing Nipton 33-kV distribution line poles built along the transmission line corridor that crosses between Ivanpah 1 and 2. The second segment is from Mountain Pass substation to the telecommunications facility approximately 1.5 miles away at an interface point to be designated by the local telecommunication carrier. The fiber cable would be installed on the existing Earth 12-kV distribution line poles.

Biological surveys of the fiber optic corridor were conducted by EPG, Inc. (2008) on April 7 to 10, 2008 and April 14 to 15, 2008. These surveys were conducted on foot and from vehicles. Protocol-level desert tortoise surveys were not conducted. EPG also conducted a limited regional literature search, queried the California Natural Diversity Database, and consulted with the CDFG, Nongame Wildlife Program, USFWS, and BLM. Based on the review, no other Federal-listed species other than the desert tortoise where identified. The entire fiber optic project area was determined to be within the range of the desert tortoise, and most of the area provides suitable habitat for tortoises. Tortoise sign was observed during the surveys (EPG, 2008).

Waters of the U.S. were not delineated during these biological resources studies of the fiber optic corridor. Based on a review of aerial photography, several waters of the U.S. likely occur adjacent to the existing distribution line. However, the fiber optic cable would be installed on the existing 12kV distribution line poles. With the exception of 20 poles, ground disturbance outside the roadway is not expected to occur, and all work will be conducted within the existing roadway. In both segments, the fiber cable would be installed on the existing distribution line poles, within an existing roadway, and outside of any waters or wetland features.

SCE estimates that approximately 20 poles are not accessible from the existing dirt service roads. Poles with potential access issues are located between Pole 4045066E/67E (the last H-frame structure accessible from the dirt service road east of Mountain Pass Substation) and Pole 4045099E – the single corner pole before you get to the end of the existing access road southwest of the proposed Ivanpah substation site (see Figure A-4). Construction of the fiber-optic line on these poles would be done by workers on foot.

Fuel System

Natural gas would be used as a supplementary fuel for project operation. Natural gas would be obtained by the construction of a new 6-mile-long, 4- to 6-inch distribution pipeline from the existing Kern River Gas Transmission (KRGT) pipeline located approximately 0.5 mile north of the Ivanpah 3 site (see Figure A-2). Gas metering stations would also be required and they would be located outside the project's fenced heliostat

fields. A dirt access road would follow the pipeline so that the gas company has access to it for maintenance.

During construction, a 75-foot-wide ROW may be disturbed. This temporary construction corridor would be used to store the excavated soil, provide access for equipment and vehicles, and space for fitting the pipeline prior to installation and backfill via backhoe (should open trench construction be used). Construction would require temporary disturbance of the ROW (e.g., vegetation clearing, trench excavation, soil compaction, dust generation, and restoration). The temporary construction disturbance area for the natural gas pipeline would also include a 200-foot by 200-foot area required for construction of the KRGT tap point. Construction of the Ivanpah 3 metering set would use a temporary laydown area within the Ivanpah 3 site; whereas, construction of the Ivanpah 1 and 2 metering set would use a temporary 5-acre triangular area just outside the southeast corner of Ivanpah 2.

Water System

Water consumption is considered minimal (estimated at less than 100 acre-feet/year for all three solar plants) and would mainly be used to provide water for washing heliostats and to replace boiler feedwater blowdown. Groundwater would go through a treatment system for use as boiler make-up water and to wash the heliostats.

Two new supply wells would be drilled and developed to provide raw water for the Ivanpah SEGS project. The water would be drawn from one of the two wells that would be located near the northwest corner of Ivanpah 1 (see Figure A-2), with the other well serving as 100 percent redundant backup. To reduce impacts on the land and provide operating efficiencies, the wells would provide water to all three plants. The 400-MW capacity of the three plants would require up to 46 gallons per minute (gpm) of raw water make-up, which would be drawn from the wells and distributed to the plants via underground high density polyethylene (HDPE) or polyvinyl chloride (PVC) pipe. Each plant would have a raw water tank with a capacity of 250,000 gallons. A portion of the raw water (100,000 gallons) is for plant use while the majority would be reserved for fire water.

There would be a dirt access road to the wells. The water supply line would go from the wells to the paved road on the northwest corner of Ivanpah 1 and run north to Administration Building, Ivanpah 2, and Ivanpah 3 along the same corridor as the gas line; and south to Ivanpah 1 along the paved access road leading to the power block. This new water distribution line would be approximately 1,075 feet long from the wells to the main line going to each of the plants.

During construction, a 50-foot wide right-of-way may be disturbed. This temporary construction corridor would be used to store the excavated soil, provide access for equipment and vehicles, and space for fitting the pipeline prior to installation and backfill via backhoe. Construction would require temporary disturbance to the corridor (e.g., vegetation clearing, trench excavation, soil compaction, dust generation, and restoration). The temporary construction disturbance area for the water supply line outside of the project footprint for three solar fields encompasses 1.2 acres, with permanent disturbance of 0.3 acres.

In addition, a monitoring well would be installed southeast of the Administration Building near the northwest corner of Ivanpah 1 (see Figure A-2). The permanent area required for the installation of the monitoring well and access to it is 0.16 acres.

Operation requirements necessitate the washing of some portion of the project's solar heliostats on a nightly basis. Individual heliostats are thus washed about once every 2 weeks (i.e., bi-weekly). Impacts from the use of wash water are described in the Project Description (see Attachment DR130-2B). The water used for heliostat washing would be deionized water, and thus, very high quality containing only minimal iron and copper from the water piping. A pressure washer or other method (see Project Description, Attachment DR130-2B) would be used to wash the heliostats to minimize the amount of water used (about 2.5 gallons per heliostat), and no water is anticipated to run offsite as a result of these washing activities. Due to the high evaporation rates in the area, and the minimal amount of water used, it is likely that wash water would evaporate at or just below the ground surface. Stormwater discharge during construction would adhere to a Stormwater Pollution Prevention Plan² (SWPPP) and the DESCP and to state water quality standards.

Concrete Holding Basins

Two concrete-lined (or an approved alternate lining system) holding basins of about 40 feet by 60 feet by 6 feet deep are included in the power block area. They can serve for boiler commissioning and emergency outfalls from any of the processes. No waste streams will be discharged to the concrete holding basins.

Waste Management

Waste management is the process whereby all operational wastes produced at Ivanpah SEGS are properly collected, treated (if necessary), and disposed of. Wastes may include process waste, nonhazardous waste, and hazardous waste, both liquid and solid.

The primary wastewater collection system would collect process wastewater from all equipment, including the boilers and water treatment equipment. Each power block would include portable facilities that will be serviced regularly by an outside vendor. The administrative/warehouse building would include a small onsite wastewater package treatment plant that would treat wastewater from domestic waste streams, such as showers and toilets. Sewage sludge would be removed from the site by a sanitary service provider. All wastewater would be recycled in the system, except for a small stream that would be treated and used for landscape irrigation around the administrative building. Drinking water will either be brought onsite or a small filter/purification system would be used to provide potable water at the administration building.

Fire Protection

The fire protection system would be designed to protect personnel and limit property loss and plant downtime in the event of a fire. The primary source of fire protection water would be the raw water storage tank located in each of the power blocks. Fire protection would be supplied to the Administration Building from the water supply line going from the wells to

² The most recent copy of the Construction SWPPP was submitted as Appendix 5.15A2 of Supplemental Data Response Set 2B, filed wit the California Energy Commission on May 13, 2009.

the raw water storage tanks at the power blocks. Electric jockey pumps and electric-motordriven main fire pump would be provided to increase the water pressure in the plant fire main to the level required to serve all fire fighting systems. Additionally, a back-up diesel engine-driven fire pump would be provided to pressurize the fire loop if the power supply to the electric-motor-driven main fire pump fails. A fire pump controller would be provided for each fire pump.

The fire pump may discharge to a dedicated underground firewater loop piping system. Normally, the jockey pump would maintain pressure in the firewater loop. Both the fire hydrants and the fixed suppression systems would be supplied from the firewater loop. Fixed fire suppression systems would be installed at determined fire risk areas, such as the transformers and turbine lube oil equipment. Sprinkler systems would also be installed in the administration/ control/warehouse/maintenance building and fire pump enclosure as required by National Fire Protection Association (NFPA) and local code requirements. Hand-held fire extinguishers of the appropriate size and rating would be located in accordance with NFPA. BSE is consulting with the San Bernardino County Fire Marshal on the design of the fire system.

Vegetation

Construction would require temporary disturbance of the ROW (e.g., vegetation clearing, trench excavation, soil compaction, dust generation, and restoration), and would result in the permanent loss of habitat within the project footprint. Inclusive of these solar plant sites and the area used for access roads, transmission poles, and the substation and administration building, the total area that would be permanently disturbed by development activities consists of approximately 3,715 acres, or approximately 5.8 square miles. The area affected by construction would be larger, about 4,072 acres as shown in Table A-1.

TABLE A-1			
Area Affected by	y Ivan	pah SEGS	5

FACILITY DESCRIPTION	Length (Feet)	Acres
Ivanpah 1		913.5
Ivanpah 2		920.7
Ivanpah 3		1,836.3
Construction Logistics Area		377.5
Kern River Gas Line Tap Station (150' x 100')		0.3
Kern River Gas Line Tap Station construction laydown area (200' x 200')		0.9
75-foot-wide Gas Line construction corridor from Tap Station to Ivanpah 3	2,011	3.5
12' trail to access mining claim – new dirt road	1,492	0.4
Colosseum Road Improvement (100-foot-wide construction corridor from the Golf Club to Ivanpah 2)	8,442	19.4
TOTAL AFFECTED AREA		4,072.5

The Ivanpah SEGS project is intended to be constructed in three stages, beginning with site preparation. Initial site clearing and grading of each of the three phases (Ivanpah 1, 2, and 3) would each take place over a 5-month period, commencing once the CEC license, BLM ROW grant and project financing are obtained. Construction of each site would be staggered to begin about 12 months following the start of the prior site. For construction of the phased facilities, no work would be done within a project site until project financing has been obtained for that site and construction is ready to proceed. Construction of the shared facilities would be part of the initial phase of the project.

To construct the heliostat array fields located within these sites, some vegetation clearing would occur. In areas where general site grading is not required for equipment access and stormwater management, vegetation clearing would not be performed. Vegetation clearing (but not leveling or grading) will be performed in areas throughout the site where the existing terrain will not permit access of installation equipment and materials. Outside of access roads and maintenance tracks, vegetation will be cut to a height that allows clearance for heliostat function and leaves the root structures intact. The vegetation will be cut with a flail-type mower mounted on skids that will be mounted on a low-ground pressure tractor (approximately 4.2 pounds per square inch [psi]).

Clearing the site of vegetation will not be performed in areas where the existing terrain will permit access for installation equipment and materials throughout the site during construction (without the need of leveling or grading). Vegetation is to be cut to an elevation that allows clearance for heliostat function and leaves the root structures intact. Occasional cutting of the vegetation may be required to control plant regrowth that could affect heliostat mirror movement. Where existing site topography is favorable, the natural drainage features will be maintained.

A Closure, Revegetation and Rehabilitation Plan (Attachment DR125-2A) has been prepared and is currently being revised. The purpose of this site rehabilitation and revegetation plan is to set forth the procedures and practices that would be employed by the project owner, to meet federal and state requirements for the reclamation of sites temporarily affected during construction of Ivanpah SEGS, and for the rehabilitation and revegetation of the project after decommissioning. It addresses revegetation of temporary construction areas, once construction activities have been completed. It also address the closure, revegetation and restoration of the facility at the end of its 50-year design life.

Stormwater

Precipitation

The project site is located in southern California's Mojave Desert in the Ivanpah Valley. Ivanpah Valley is a semi-arid, topographically closed basin. Average annual precipitation at the project site from 1971 to 2000 was between 5.5 and 6.7 inches. Most of the precipitation in the project area falls during January through March and July through September. The estimated rainfall for a 100-year 24-hour event is 3.28 inches, and 2.83 inches for a 6-hour event. For a 10-year 24-hour event the estimated rainfall is 1.92 inches, and 1.60 inches for a 6-hour event ³ (stormwater runoff and sediment transport are addressed in Exhibit BSE-3).

Drainage

Stormwater runoff at the site is predominantly sheet flow from west to east, eventually discharging into Ivanpah Dry Lake. In support of a low-impact design (LID), with exception of the power block areas, solar field development will maintain sheet flow where possible, with water exiting the site in existing natural contours and flows. In addition, the majority of the project site will maintain the original grades and natural drainage features and, therefore, requires no added storm drainage control.

Existing small to moderate ephemeral washes will remain intact at locations capable of being traversed by installation equipment. Large ephemeral washes will be graded to the extent necessary to provide equipment access. In limited areas such as the power blocks and administrative areas, a storm drainage system will be designed using diversions channels, by-pass channels, or swales to direct run-on flow from up-slope areas, and run-off flow through and around each facility. The design will be developed for sheet flow for all storm events less than or equal to a 100-year, 24-hour storm event. Diversion channels will be designed so that a minimum ground surface slope of 0.5 percent shall be provided to provide positive, puddle-free drainage. Storm drainage channels will be sized to convey floods at relatively low velocities that will not result in significant scour or particle transport, and may be lined with a non-erodible material such as compacted rip-rap, geo-synthetic matting, or engineered vegetation. A sediment transport analysis will be completed prior to finalization of the DESCP.

Stormwater will be allowed to sheet flow across roads. An "Irish Bridge" style crossing will be constructed where permanent asphalt paved access roads cross major ephemeral washes on the site. The Irish Bridges will be constructed of reinforced concrete or gabion baskets and are being designed to prevent the scour and washout of major asphalt access roads during storm events (see Appendix A of the Project Description, Attachment DR130-2B).

When necessary, offsite stormwater drainage will be collected using a system of swales, berms, and existing ephemeral washes to control and direct stormwater through and around the Ivanpah SEGS site.

The stormwater drainage system will be designed by using the Soil Conservation Service (SCS) method (TR-55), and by determining the amount of rainfall during a specific rainfall storm event. This method is in accordance with requirements specified in the most current version of the San Bernardino County and Clark County requirements.

All surface runoff during and after construction will be controlled in accordance with the requirements of the NPDES General Permit for Construction Activities, the requirements of the San Bernardino Water Quality Management Plan manual, and all other applicable laws, ordinances, regulations and standards. Stormwater management practices will follow the California Storm Water Quality Association (CASQA) California Storm Water BMP Handbook for Construction.

³ The general accepted design standard for a BMP is to a precipitation intensity of a 10-year, 6-hour event. The majority of the operational BMPs at the site, however, have been designed to a precipitation intensity of 100-year, 24-hour event.

As described previously, the DESCP (Attachment DR140 - B) will be updated once the final site layout, site drainage, and erosion control design has been completed. Design drawings would be incorporated into the DESCP once this information is available.

Hydraulic Analysis

Preliminary stormwater calculations are located in Appendix B of the DESCP (Attachment DR140-1B). The watershed of the project area is 14,856 acres in size.

Hydrology calculations were performed using methods that, at a minimum, adhere to the TR-55 method. Calculations will determine the amount of pre- and post-development stormwater run-on and run-off for each basin or sub-basin within each facility. (See Exhibit BSE-3, Stormwater Runoff and Sediment Transport).

Both San Bernardino County and Clark County requirements were used (where applicable) to classify soil characteristics, expected soil types, and other design criteria necessary for use with the TR-55 calculations. Offsite flows were determined using the western watershed boundaries from available state watershed information, contour intervals, and available soil mapping information. Watersheds were further broken down into sub-basins as required to determine the western flow from the ephemeral washes upslope of the Ivanpah SEGS project areas. This process is necessary to determine the offsite flow required to design the bypass channels through the developed Ivanpah SEGS site.

Project Maintenance

The Ivanpah SEGS will require routine inspections and maintenance outside fenced areas to remain in operation. The security fences around each of the three solar plants would be designed to exclude desert tortoises. The potential for direct effects on tortoises from maintenance are only expected as a result of those few actions that would be conducted outside the fenced areas. Therefore, only those maintenance activities occurring outside of the fenced area are included in this section. Those project components would include the natural gas pipeline ROW, water pipeline ROW, and perimeter fence.

The anticipated maintenance activities that could occur outside the fenced solar plant sites are grouped into the following five categories:

- Class I: Maintenance activities that do not result in new surface disturbance
- Class II: Maintenance activities that result in minimal surface disturbance
- Class III: Maintenance activities that result in major surface disturbance
- Class IV: Maintenance activities that may extend outside the project ROW
- Class V: Emergency repairs

Class I are those maintenance activities outside the fenced area that do not result in new surface disturbance. These activities include tasks that would be performed by hand or with the use of tools, equipment, and/or vehicles. Class I activities would take place on existing structures or would be staged from existing roads or likewise disturbed areas (excluding those areas subjected to restoration). They would not include off-road travel. Vehicles used for such tasks would likely include those primarily used for transportation or lifting

purposes. Low-boy tractor and trailer, flat bed, utility trucks, forklifts, scissor lifts, cherry pickers, and mechanical hoists may be used to transport equipment and materials and to lift heavy objects. Labor may involve several workers confined to the area in need of maintenance. These activities may need to be performed on a routine daily or as-needed basis.

Class II activities would result in minimal surface disturbance. These activities would likely be performed with heavy earth-moving equipment including motor grader, bulldozer, front-end loader, backhoe, water truck, asphalt paver, and dump truck. Labor may involve several workers confined to the area in need of maintenance. Class II activities may involve the following:

- a) Underground utility (e.g., water, gas, sewage, electrical, communication, etc.) repairs, upgrades, and tie-ins to structures
- b) Maintenance of drainages for proper flow of water runoff, including the removal of debris along the security fences and remedy for areas of undercut fence
- c) Major security and desert tortoise exclusionary fence repairs
- d) Pipeline segment replacement; if a below grade inspection reveal severe damage, then excavation and replacement of a portion of the pipeline would be necessary
- e) Installation of anodes, if routine cathodic protection surveys reveal an isolated gas pipeline segment with low pipe-to-soil electrical potentials
- Below-grade gas pipe and coating inspections indicating low pipe-to-soil electrical potentials where a portion of the pipe would be excavated for visual inspection
- g) Installation of anode flex for cathodic protection, if a below-grade inspection reveals failed gas pipeline coating where excavation and recoating of the pipeline segment could be necessary

Class III includes maintenance activities that result in major surface disturbance. Class III activities may involve the following:

- a) Installation of a new underground pipeline a distance of 1,000 feet or more
- b) Disturbance of 1 acre or more for construction of a new stormwater drainage feature

Class IV includes maintenance activities that may include any of the previously mentioned actions that would extend beyond these limits. The extent of disturbance may vary with the project and depend upon the ROW width, topography, layout, and other factors. Class IV activities may require additional consultation with the USFWS prior to implementation.

Class V includes emergency actions to ensure public safety, service reliability, and to protect the environment. Emergency repairs may include temporary closure and bringing the solar plant back online, utility outages, pipeline leaks or breaks, fire control, human medical emergency, and reestablishment of access roads severely damaged by storms. These activities may involve a backhoe and/or cat-loader, motor grader, and possibly other heavy earth-moving equipment. It is anticipated that most emergency situations would affect less than 0.5 acre, although the amount of habitat disturbance would vary depending upon the nature of the emergency. The applicant may need to consult with the USFWS following the emergency action if those activities extend beyond the action area. It is intended that emergency vehicles will use paved public roads for access.

Question 11 - Impacts

Ephemeral Washes

Based on the field data, each wash was assigned a size category class between 1 and 5.

Category 1 washes are large ephemeral drainages over 36 feet wide. The largest category 1 wash mapped was 85 feet wide.

Category 2 washes are relatively large ephemeral drainages over 20 feet wide and no more than 35 feet wide.

Category 3 washes are over 10 feet wide and no more than 20 feet wide.

Category 4 includes ephemeral washes over 4 feet wide and no more than 10 feet wide. Category 1, 2, 3 and 4 washes include single, large channels with well-defined bed and banks, as well as broad, but weakly expressed, assemblages of braided erosional channels.

Category 5 includes weakly expressed erosional/flow channels that generally lack defined cut banks and are no more than 4 feet wide.

Approximately 198.72 acres of ephemeral washes were identified and mapped in the project study area. The project study area includes approximately 16.78 acres of category 1 washes, 8.22 acres of category 2 washes, 40.37 acres of category 3 washes, 73.71 acres of category 4 washes, and 55.68 acres of category 5 washes (see Table A-2).

Summary of Epher	neral Washes Identified in the	e Project Study Area		
Wash Category	Project Feature	Number of Washes*	Wash Length (feet)	Wash Acreage
	Ivanpah 1	0	0	0.00
	Ivanpah 2	3	7,066	7.48
Category 1 (36-85 feet)	Ivanpah 3	4	5,392	8.29
	Utility Corridor	1	1,100	1.01
	Colosseum Road	0	0	0.00
	Substation and Administrative Area	0	0	0.00
	Category 1 Total	8	13,559	16.78

TABLE A-2

TABLE A-2

|--|

Wash Category	Project Feature	Number of Washes*	Wash Length (feet)	Wash Acreage
Category 2 (21-35 feet)	Ivanpah 1	0	0	
	Ivanpah 2	4	5,847	3.90
	Ivanpah 3	7	6,399	3.96
	Utility Corridor	1	706	0.36
	Colosseum Road	0	0	0.00
	Substation and Administrative Area	0	0	0.00
	Category 2 Total	12	12,953	8.22
Category 3 (11-20 feet)	Ivanpah 1	10	19,850	7.06**
	Ivanpah 2	22	21,903	7.79**
	Ivanpah 3	32	46,069	16.39**
	Utility Corridor	8	8,497	3.02**
	Colosseum Road	9	6,018	2.14**
	Substation and Administrative Area	13	11,111	3.95**
	Category 3 Total	94	113,446	40.37
Category 4 (5-10 feet)	Ivanpah 1	95	103,016	17.74**
	Ivanpah 2	130	110,833	19.08**
	Ivanpah 3	171	169,855	29.24**
	Utility Corridor	16	8,624	1.48**
	Colosseum Road	11	3,589	0.62**
	Substation and Administrative Area	36	32,167	5.54**
	Category 4 Total	459	428,083	73.71
Category 5 (1-4 feet)	Ivanpah 1	397	245,095	14.07**
	Ivanpah 2	292	200,172	11.49**
	Ivanpah 3	449	399,574	22.93**
	Utility Corridor	29	24,459	1.40**
	Colosseum Road	36	4,442	0.25**
	Substation and Administrative Area	197	96,386	5.53**
	Category 5 Total	1,400	970,129	55.68
All Categories (Total)		1,973	1,538,170	198.72

Note:

* Number of washes is based on number of segments in each category mapped in each of the project areas. ** Acreage calculated using Wash Length and the median width of the category range No wetlands were observed within the entire project area.

Small- to medium-sized washes are common and widespread throughout the entire project area, while the larger washes (categories 1, 2 and 3) are most abundant in the northern section of Ivanpah 3 as well as the east and west sides of Ivanpah 2 (see Figures 3-1 through 3-3 and Appendix A of the Wetland Delineation Report, Attachment DR19-1B).

The larger washes tend to dissipate into smaller, more braided channels as they progress downslope. The majority of the drainages terminate prior to reaching Ivanpah Dry Lake with defined erosion features diminishing and becoming broad surface flow only. All of the ephemeral washes identified in the study area typically flow only in response to storm events. Representative photographs of the drainage features are provided in Appendix B of the Wetland Delineation Report, Attachment DR19-1B.

As shown in Table A-2, almost 2,000 (1,973) ephemeral washes (or segments of braided washes) were mapped within the project area. The ephemeral washes range in size from small (1 to 4 feet wide), weakly expressed erosional features to large, broad (over to 85 feet wide) drainages. The large majority of washes identified onsite (about 1,400) are narrow features ranging in width from 1 to 4 feet.

The active flow channels of the smaller washes are generally devoid of vegetation and typically have a sandy-gravel substrate, although some washes also contained cobble and scattered larger rocks. Most of the larger channels typically contained scattered vegetation including creosote bush and cheesebush, especially in braided channels that contain slightly elevated areas intermixed with the active flow channels.

Catclaw acacia (*Acacia greggii*) occurs in the washes onsite as part of the Mojave Wash Scrub vegetation type. It is much less abundant in the moderate to smaller washes. It was not observed at all in the very narrow washes (that were dominated by cheesebush (*Hymenoclea salsola*). Most of the catclaw acacia were small, no larger than the size of "shrubs," and without a defined trunk or canopy. In at least two places, the arborescent form was observed: the first location is in the well-incised wash system near the northern boundary of Ivanpah 3, and the second is in the sandy wash that separates the large metamorphic hill from the smaller metamorphic hill to the south in the eastern one-mile buffer area. Additional information on the vegetation identified within the washes onsite is included in the Wetland Delineation Report (Attachment DR19-1B) and Botanical Resources Survey Report (GANDA 2008).

Fencing

Prior to clearing vegetation and site grading, each site boundary would be permanently fenced with an 8-foot-high chain-link for security purposes. Tortoise guards would be installed to allow equipment access to the fenced sites and exclude desert tortoises. The first step would include clearing an approximate 12-foot-wide linear swath of vegetation along the entire outer edge of each facility boundary to create an internal perimeter road and install the fencing. The perimeter road would be within the fence line or site boundary. Once the fence is installed and prior to vegetation clearing and site grading, a desert tortoise clearance survey according to USFWS protocol and a project-specific translocation plan would be performed.

Although soil disturbance would be minimized to the degree possible, the entire area covered by the solar plant sites and related facilities would no longer be available to

tortoises for habitat. The sites (and the related facilities such as the substation and Administration/warehouse Building) would be fenced and tortoises excluded during construction and operation. Inclusive of these solar plant sites and the area used for access roads, transmission poles, and the substation and administration building, the total area that would be permanently disturbed by development activities consists of approximately 3,715 acres or approximately 5.8 square miles.

Grading and Leveling

At some washes, slopes may be too steep for equipment, and cuts into the side of the existing embankments may be necessary (a detail is provided on drawings in Appendix A of Attachment DR130-2B). Surface rocks and boulders may be relocated to allow proper installation of heliostats and facilities. These rocks and boulders will be harvested using LID construction techniques to minimize any necessary clearing or grading. Boulders will be harvested using a Caterpillar 950 (gross vehicle weight of 40,000 pounds [lbs] or similar), front-end wheel loaded with high floatation tires. The tires will generate much less impact than standard Caterpillar tires. The loader will be equipped with a skeleton bucket to harvest rocks larger than about 10 or 12 inches in diameter.

The highest concentration of large rocks occurs in the northeastern 170-acre area of Ivanpah 3. These rocks and boulders will be used for rip-rap and other uses where possible. Site grading will be designed to maintain all local materials onsite and attempt to minimize the import of offsite material. The import of suitable stone aggregate or rip-rap may be required if not available onsite given the limited excavation planned. To the extent possible, the site's excavation and embankment volumes will be approximately balanced in an effort to eliminate or minimize the import of material to the site.

An area of light grading for equipment access and boulder clearing, including rock harvesting, is anticipated in Ivanpah 3. In this area, there may be up to 135,000 cubic yards of material graded and rock harvested. These areas of light grading will not be compacted to optimum moisture content; rather, compaction efforts will attempt to attain natural compaction to allow existing infiltration rates.

Heavy to medium grading will be performed within the solar project's proposed receiver tower and power block areas, for the substation, and in the administration/maintenance building area. In each of these individual areas, BSE will approximately balance earthwork cuts and fills. The total quantity of cut anticipated for these areas is approximately 245,000 cubic yards. Most earthwork in the power block and common areas will be excavated and compacted with Caterpillar D-9 size bulldozers and sheepsfoot compactors. These areas will be compacted to the recommendations of the geotechnical report.

The surface soil grade of each facility will be designed to provide the minimum requirements for access of installation equipment and materials during site construction and operations. Most of the natural drainage features will be maintained and any grading required will be designed to promote sheet flow where possible.

Areas disturbed by grading will be hydro-mulched, (or as specified in the revised Closure, Revegetation, and Rehabilitation Plan, Attachment DR125-3A), and/or protected by other means to mitigate erosion using BMPs.

Grade is to be designed to provide positive drainage of rainfall runoff away from each structure. The drawings in Appendix A of Attachment DR130-2B provide additional clarity regarding typical areas of disturbance within the heliostat array fields. The total graded area is estimated to be approximately 600 acres.

References Cited

EPG, Inc. 2008. Eldorado-Ivanpah Project, Biological Resources Summary Report. Prepared for Southern California Edison. July.

GANDA (Garcia and Associates). 2008. Technical Report: Botanical Resources of the Ivanpah Solar Electric Generating System. Attachment BR3-1A, Supplemental Data Response, Set 1D; filed September 24.



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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA 1516 NINTH STREET, SACRAMENTO, CA 95814 1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE IVANPAH SOLAR ELECTRIC GENERATING SYSTEM DOCKET NO. 07-AFC-5

PROOF OF SERVICE (Revised 4/16/09)

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DECLARATION OF SERVICE

I, <u>Mary Finn</u>, declare that on <u>June 2 & 3, 2009</u>, I served and filed copies of the attached <u>Data Response Set 1L</u>. 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:

[www.energy.ca.gov/sitingcases/ivanpah]. The document has 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:

- <u>x</u> sent electronically to all email addresses on the Proof of Service list; (June 2)
- x by personal delivery or by depositing in the United States mail at <u>Sacramento</u>, <u>CA</u> 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." (June 3)

AND

FOR FILING WITH THE ENERGY COMMISSION:

<u>x</u> 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. <u>07-AFC-5</u> 1516 Ninth Street, MS-4 Sacramento, CA 95814-5512 <u>docket@energy.state.ca.us</u>

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

Mary Finn