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Applicant's Response to Center for Biological Diversity Data Requests dated March 15, 2012 for the APPLICATION FOR CERTIFICATION for the Rio Mesa Solar Electric Generating Facility (Rio Mesa SEGF)

(11-AFC-04)




Submitted to:

CALIFORNIA ENERGY COMMISSION
1516 9th Street, MS15
Sacramento, CA 95814-5504

Submitted by:

RIO MESA SOLAR I, LLC
RIO MESA SOLAR II, LLC
RIO MESA SOLAR III, LLC
1999 Harrison Street, Suite 2150
Oakland, CA 94612

APRIL 12, 2012

URS

April 12, 2012

Pierre Martinez
Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: Response to Center for Biological Diversity Data Requests dated March 15, 2012
Rio Mesa Solar Electric Generating Facility (11-AFC-04)

Dear Mr. Martinez:

On behalf of Rio Mesa Solar I, LLC, Rio Mesa Solar II, LLC, and Rio Mesa Solar III, LLC, please find enclosed a copy of Response to Center for Biological Diversity Data Requests dated March 15, 2012 in response to Staff's Data Requests filed on February 7, 2012. Hard copies and/or electronic copies will be sent to Staff and the Proof of Service list.

Sincerely,

Angela Leiba, Vice President
Senior Project Manager/ Environmental Department Manager

Enclosure

cc: POS List
Project File

Applicant's Response to Center for Biological Diversity

Data Requests dated March 15, 2012

for the

Application for Certification

for the

Rio Mesa Solar Electric Generating Facility

(11-AFC-04)

Submitted to the

Center for Biological Diversity

Submitted by

Rio Mesa Solar I, LLC,
Rio Mesa Solar II, LLC,
Rio Mesa Solar III, LLC

April 12, 2012

Contents

AFC Section **Page**

Figures

Introduction

This document includes data responses for the Rio Mesa Solar Electric Generating Facility (Rio Mesa SEGF) project by Rio Mesa Solar I, LLC, Rio Mesa Solar II, LLC, and Rio Mesa Solar III, LLC (collectively, "Applicant") to Center for Biological Diversity (CBD). The CBD Data Requests for the Rio Mesa SEGF identified three areas where further information is requested. This document provides additional information in the areas of desert kit fox and migratory birds (Data Requests 1, 2a, and 2b) and information regarding the data, model and modeling assumptions used for the March 13, 2012 powerpoint presentation (Data Request 3).

Desert Kit Fox

Data Request

1. *Please provide information on the type of kit fox sign (scat, tracks, and dens) on the proposed site and adjacent off-site areas. Data requested includes a map showing the locations of kit fox sign, kit fox dens and complexes including the number of burrows and whether they are natal or satellite dens and an estimate of the on-site and adjacent population.*

Response:

Per the Biological Technical Report (BTR) filed with the Application for Certification (11-AFC-04), page 4-16:

While desert kit fox den complexes were prevalent in the [Biological Study Area] BSA (193 observed), many den complexes occur within the home ranges of each single female and can be used for birthing or as refuges from coyotes. The species is solitary except during the breeding season and does not maintain territories. A birthing den is chosen in September or October after a female visits most of the dens in her home range. She cleans one for birthing. A female usually uses one complex for birthing that is three to four kilometers from the nearest neighbor to ensure a good hunting home range. Pups are born in February or March and are weaned by June. Den changes are frequent during the summer when puppies are being fed. At three to four months the pups begin to forage with the parents. In October the pups leave their parents' home range. Young foxes may travel long distances (30 or more km) before settling down. With kit fox ranges varying from 1 to 2 square miles (Morrell 1972; O'Farrell, and Gilbertson. 1979). The 193 den complexes observed may only represent 8 to 16 home ranges on site. Figure 6 in the BTR includes kit fox sighting locations. The den distribution was used to make this estimate. Other sign, such as scat and tracks, were associated with the dens.

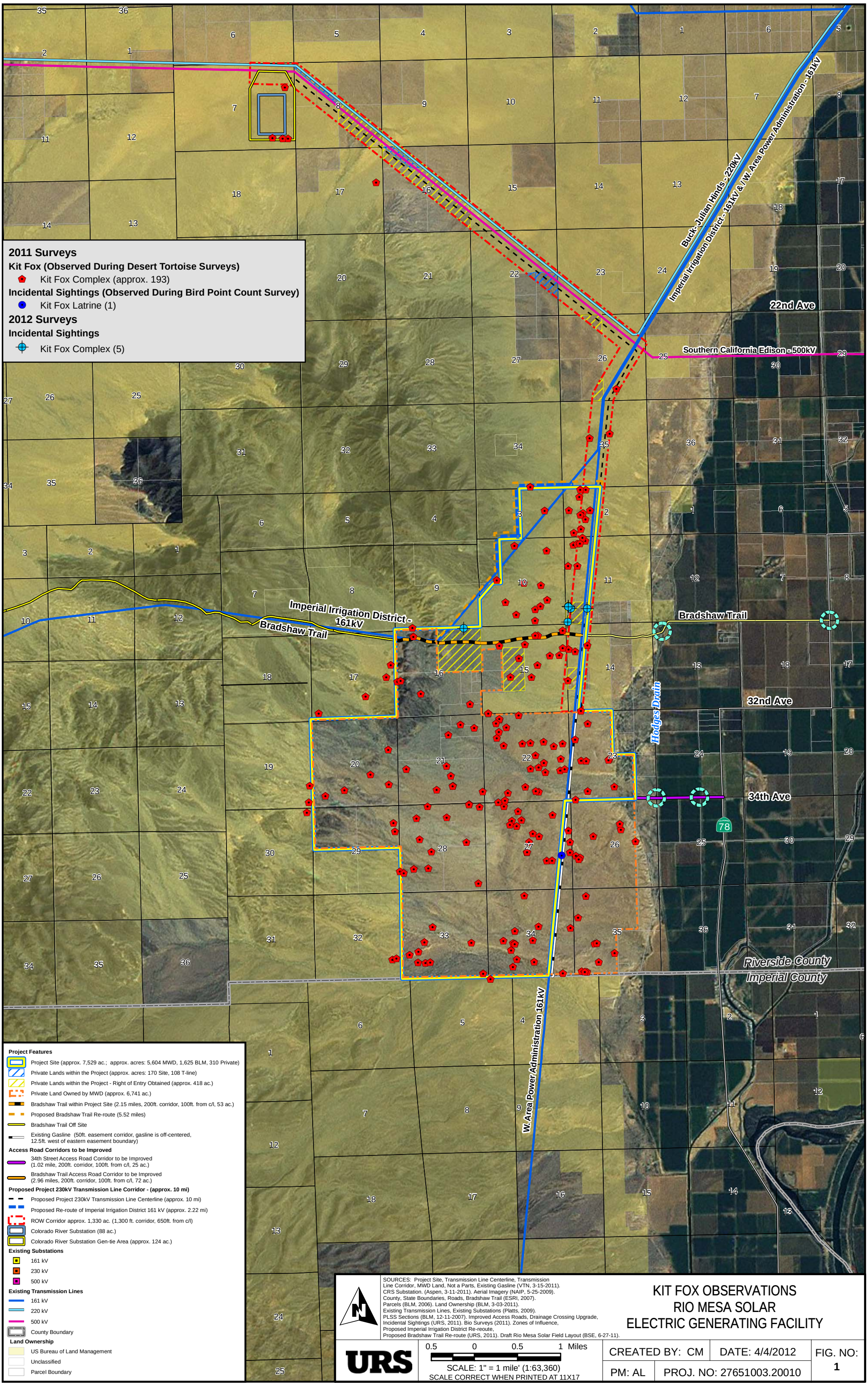
The most current list of "special animals" maintained by CDFG (January 2011) does not include desert kit fox as a protected or otherwise sensitive species. Below is the list from the dog family of CDFG (2011). Desert kit fox are distributed throughout the deserts of North America and is not at risk on a regional or population scale (Ranked as apparently secure across its entire range (G4, NatureServe 2007). The species currently does not meet any of the thresholds for IUCN threatened categories, and it is presently assessed as "Least Concern" on the IUCN Red List.

See also attached Figure 1 (Kit Fox Observations) Map.

CANIDAE (foxes, wolves, and coyotes)						
Urocyon littoralis island fox	(Mapped by subspecies)	G1 S1	None	Threatened	IUCN:CR	Yes
+*Urocyon littoralis catalinae* Santa Catalina Island fox		G1T1 S1	Endangered	Threatened	IUCN:CR	Yes
+*Urocyon littoralis clementae* San Clemente Island fox		G1T1 S1	None	Threatened	IUCN:CR	Yes
+*Urocyon littoralis dickeyi* San Nicolas Island fox		G1T1 S1	None	Threatened	IUCN:CR	Yes
+*Urocyon littoralis littoralis* San Miguel Island fox		G1T1 S1	Endangered	Threatened	IUCN:CR	Yes
+*Urocyon littoralis santacruzae* Santa Cruz Island fox		G1T1 S1	Endangered	Threatened	IUCN:CR	Yes
+*Urocyon littoralis santarosae* Santa Rosa Island fox		G1T1 S1	Endangered	Threatened	IUCN:CR	Yes
+*Vulpes macrotis mutica* San Joaquin kit fox		G4T2T3 S2S3	Endangered	Threatened		
+*Vulpes vulpes necator* Sierra Nevada red fox		G5T3 S1	None	Threatened	USFS:S	

Morrell, S. 1972. Life history of the San Joaquin kit fox. Calif. Fish and Game. 58:162-174.

O'Farrell, T. P., and L. Gilbertson. 1979. Ecological life history of the desert kit fox in the Mojave Desert of southern California. USDI BLM., Riverside. Draft Final Rep. 95pp



SOURCES: Project Site, Transmission Line Centerline, Transmission Line Corridor, MWD Land, Not a Parts, Existing Gasline (VTN, 3-15-2011). CRS Substation. (Aspen, 3-11-2011). Aerial Imagery (NAIP, 5-25-2009). County, State Boundaries, Roads, Bradshaw Trail (ESRI, 2007). Parcels (BLM, 2006). Land Ownership (BLM, 3-03-2011). Existing Transmission Lines, Existing Substations (Platts, 2009). PLSS Sections (BLM, 12-11-2007). Improved Access Roads, Drainage Crossing Upgrade, Incidental Sightings (URS, 2011). Bio Surveys (2011). Zones of Influence, Proposed Imperial Irrigation District Re-reoute, Proposed Bradshaw Trail Re-route (URS, 2011). Draft Rio Mesa Solar Field Layout (BSE, 6-27-11).

KIT FOX OBSERVATIONS
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY

URS

0.5 0 0.5 1 Miles

SCALE: 1" = 1 mile' (1:63,360)

SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: CM	DATE: 4/4/2012	FIG. NO: 1
PM: AL	PROJ. NO: 27651003.20010	

Path: G:\gis\projects\1577\27651002\map_docs\mxd\Bio\DataAdq\DesertKitFox_Revised04032012.mxd, daniel_arellano, 4/4/2012

Migratory Birds

Data Request

2a. Please provide published and/or peer-reviewed studies on avian mortality from the proposed power tower technology.

Response:

Please see the Risk Characterization Study provided by the Applicant labeled Attachment 1 within the Applicant's Reply Brief docketed 3-14-12.

Data Request

2b. Please provide data on migratory pathways in the general area of the proposed project.

Response:

Of the four main flyways that exist in the United States (Pacific, Central, Mississippi, and Atlantic flyways), the Pacific Flyway is perhaps the best defined migratory route. The Pacific Flyway extends from the north in the western Arctic and Alaska to the south in the United States and Mexico, where it then transitions into other flyways through Central and South America. Although the flyway consists of converging and diverging routes from north to south, a critical location for many migratory birds is through inland California, where birds stopover in large numbers before heading southward to western Mexico. Of the many birds that use this flyway, waterfowl and shorebirds are the most numerous (Page et al. 1992).

A review of the ornithological literature suggests that the Lower Colorado River Valley (LCRV) is a secondary bird migration route for migrant songbirds and the river valley is a minor wintering area for waterfowl and shorebird species. The desert scrub habitat, which comprises most of the Rio Mesa Project, is not primary habitat for birds that use the Colorado River as a migratory corridor. These birds more commonly inhabit the riparian habitat associated with the river and the adjoining agricultural lands. Despite a one mile buffer of desert habitat from the agricultural valley floor to the project facilities, the desert habitat on the Rio Mesa Project site is likely to receive some "spillover" from the adjacent agricultural areas with the number of species and relative abundance being far less than those using the preferred riparian or agricultural lands located more than one mile east of the site.

Riparian areas along the LCRV provide some suitable habitat for a number of migratory shorebirds and wintering waterfowl. The Cibola National Wildlife Refuge located approximately 7 to 15 miles to the south of the Project site offers this preferred habitat and typically receives a portion of the migratory birds using the Pacific Flyway. Because desert scrub habitat does not provide the abundant resources required by migratory waterfowl and shorebirds, these birds are restricted primarily to the nearby river, and adjacent riparian areas.

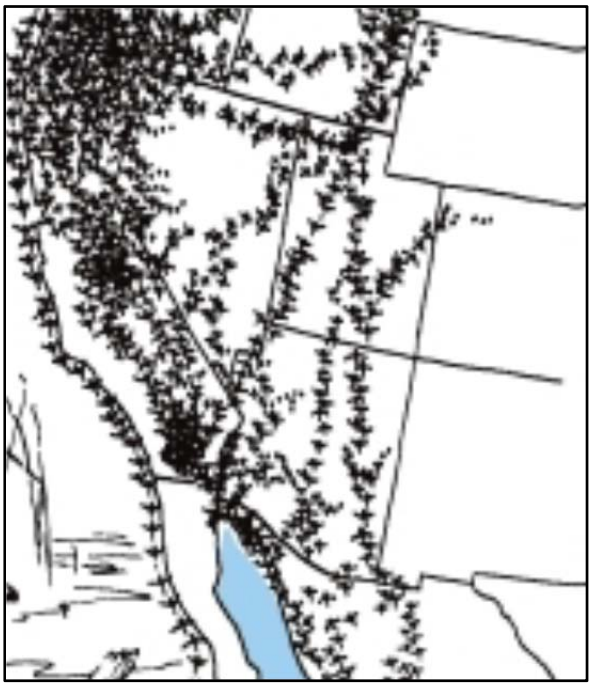
Changes in historic habitat distribution throughout the Colorado River Valley have altered the distribution of migratory birds. Widespread conversion of riparian areas to agricultural fields has transformed formerly productive habitat into areas that only invite a portion of historic migrant waterfowl and shorebird species. Although waterfowl in the LCRV primarily use the Colorado River and adjacent riparian areas, agricultural areas can host a variety of species because of the food and water resources they provide. Irrigation canals are sometimes used by migratory waterfowl, as well as grebes, cormorants, and herons. These agricultural areas can provide food resources for birds such as white-faced ibis and cattle egret, especially when flooded. Shorebirds, waterfowl, and land birds will occasionally use flooded agricultural fields over winter because of the available resources, while they avoid areas of depleted or historically nonexistent resources such as upland desert scrub habitat.

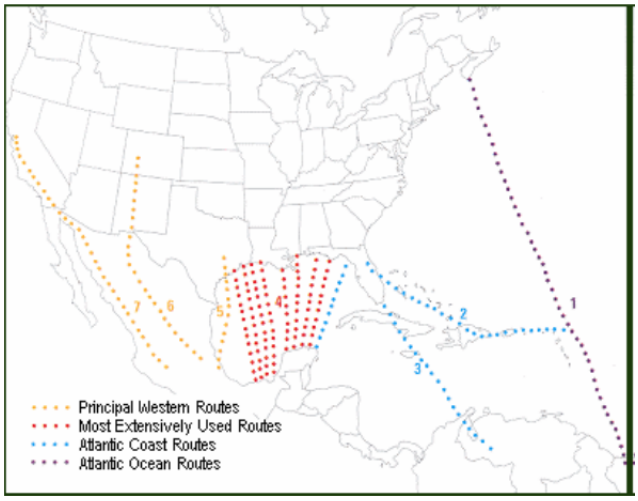
Although several shorebird species consistently follow a migration route through the Colorado River Valley, the number of birds is significantly smaller than the main migration route of the Pacific Flyway, which passes through the Salton Sea to the west (Rosenberg et al. 1991, Patten et al. 2003). Rosenberg et al. suggests that the Salton Sea has become such a lure to water birds that the number of migrating birds actually reaching the Lower Colorado River Valley has decreased dramatically when compared to historical records. The presence of moderate amounts of shorebirds in the Lower Colorado River Valley implies that the region may act primarily as a dispersal route from the Salton Sea. Together with the Great Salt Lake, the Salton Sea supports on average more migrating shorebirds than any other intermountain or desert stopover sites on the Pacific Flyway (Page and Gill 1994; Shuford et al. 2000).

Patten et al. (2003) show the primary migration routes of shorebirds and sea ducks in Figures 21 and 22 respectively, while the migration routes of passerines and other land birds are shown in Figure 23. Please notice that only a small portion of the passerine and other land bird spring migration routes pass near the Project site. A majority of the migration routes occur about 100 miles further west, where birds use the Salton Sea as a primary stop-over location (Patten et al. 2003) and follow the slopes of the transverse and peninsular mountain ranges. The delta of the Colorado River in Mexico is a key location for migratory birds.

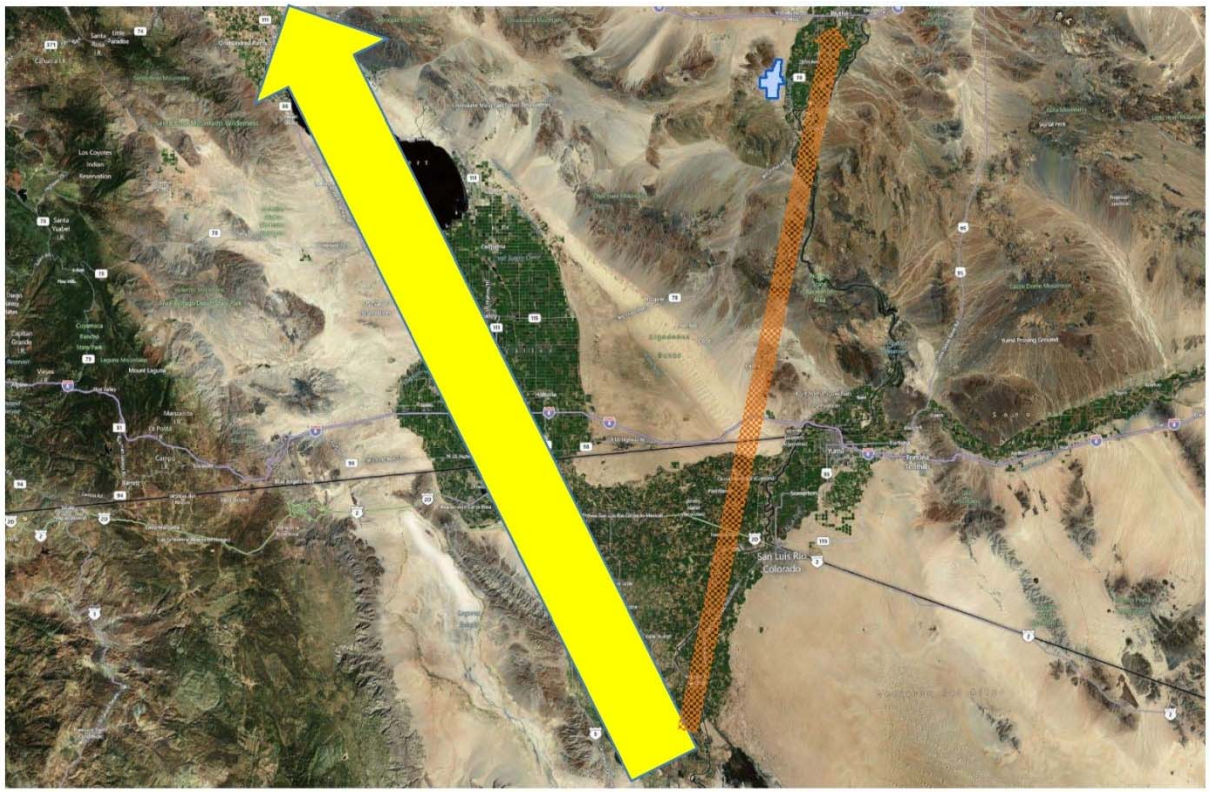
Please also see 2011 Spring and Fall Bird Count Survey for the Rio Mesa SEGF (URS 2012) docketed 2-10-12.

USFWS and USGS Pacific Flyway Maps:





Southern California/Mexico – Pacific Flyway Satellite View



Modeling Assumptions

3. *All original data, modeling and modeling assumptions relied on for statements regarding the SEDC project and Rio Mesa proposed project in the powerpoint presentation titled "RIO MESA SOLAR ELECTRIC GENERATING FACILITY CEC BIOLOGICAL RESOURCES WORKSHOP March 13, 2012", docketed with the Commission, and posted on the web on March 14, 2012.*

Response:

For the purpose of this response, we presume that the request for "data, modeling and modeling assumptions" relied on for statements regarding the SEDC project and the Rio Mesa Project, refers to the statements on the powerpoint slide entitled "Rio Mesa Solar – Risk Factors for Tower Technology".

In the March 13, 2012 CEC workshop, Applicant presented a report titled "Air Temperature Surrounding the SRSG" (the "Air Temp Report"). The Air Temp Report was prepared by Applicant utilizing modeling data that was created by Applicant's consultant in Israel using a Computational Fluid Dynamics (CFD) modeling program. The CFD was used to determine the air temperature profiles near the SRSG for SEDC and Ivanpah. The Air Temp Report was docketed as an Appendix to the Applicant's March 14th, 2012 reply brief. The results of this report are applicable to the Rio Mesa project because the physical heat transfer and natural convection mechanisms are the same for a hot body in ambient air, and differences in the size, relative shape, and elevation do not alter the basic physics. The two differences between the Ivanpah and the Rio Mesa SRSG are as follows:

First, the Rio Mesa Tower is 290' taller than the Ivanpah tower. This is significant because wind speed tends to increase at higher altitude. Higher wind velocity speeds heat dissipation. Because, wind speed tends to increase at higher altitude, it is likely that heat dissipation at Rio Mesa will be more rapid than the rate of heat dissipation shown in the model for Ivanpah.

Second, whereas the Ivanpah SRSG is a square section, the Rio Mesa SRSG is an octagon. The octagonal section of the Rio Mesa SRSG has no acute angles and thus is prone to a more efficient airflow around it than is a square section (due to a more continuous boundary layer). This, in turn, creates smaller low pressure zones (vortices) where hot air off the SRSG skin tends to linger. This geometrical difference will result in a more rapid rate of heat dissipation for Rio Mesa than the rate of heat dissipation shown in the model for Ivanpah.

As mentioned above, the modeling work was conducted for Applicant by a consultant who specializes in CFD modeling. The Air Temp Report includes the relevant input data (boiler dimensions and geometry, tube surface temperatures, and ambient conditions). Applicant does not own the expensive (~$75,000/seat) ANSYS FLUENT 3-D modeling software. However, with access to the software and the expert(s) to use it, the Air Temp Report contains the necessary data to recreate the model.

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 *RIO MESA SOLAR*
ELECTRIC GENERATING FACILITY

DOCKET NO. 11-AFC-04
PROOF OF SERVICE
(Revised 2/27/12)

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*indicates change

DECLARATION OF SERVICE

I, Darin Neufeld, declare that on April 12, 2012, I served and filed copies of the attached, dated April 12, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/riomesa/index.html].

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(*Check all that Apply*)

For service to all other parties:

X Served electronically to all e-mail addresses on the Proof of Service list;

X Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

X by sending electronic copies to the e-mail address below (preferred method); *OR*

___ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-4
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

___ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
mlevy@energy.state.ca.us

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original Signed by
Darin Neufeld

*indicates change

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

TO: *All Parties* *Date: February 27, 2012*

RE: ***RIO MESA SOLAR ELECTRIC GENERATING FACILITY***
Proof of Service List
Docket No. 11-AFC-04

Attached is the ***newly revised*** Proof of Service List for the above-mentioned project, current as of February 27, 2012. Please pay particular attention to the ***new*** filing instructions.

Energy Commission regulations (Cal. Code Regs., tit. 20, § 1210) require, in addition to any electronic service, that a paper copy be served in person or by first class mail except where a party requests to receive an electronic copy when one is available. Individuals and groups on the Proof of Service list who prefer to receive filings by e-mail and do not require a paper copy shall inform the Hearing Adviser assigned to the proceeding.

The Proof of Service list for this matter will delineate those individuals and groups and it is sufficient to serve those individuals with an e-mailed copy only. Those not so delineated must be served with a paper copy in addition to any e-mailed copy that the filing party chooses to provide. Signatures may be indicated on the electronic copy by **"*Original Signed By*"** or similar words. The original signed copy or an electronic copy shall be filed with the Energy Commission's Dockets Unit.

Unless otherwise specified in a regulation, all materials filed with the Commission must also be filed with the Docket Unit. (Cal. Code Regs., tit. 20, § 1209(d).) Some regulations require filing with the Commission's Chief Counsel instead of the Docket Unit. For example, Section 1720 requires a petition for reconsideration to be filed with the Chief Counsel and served on the parties. Service on the attorney representing Commission staff does not satisfy this requirement. This Proof of Service form is not appropriate for use when filing a document with the Chief Counsel under Title 20, sections 1231 (Complaint and Request for Investigation) or 2506 (Petition for Inspection or Copying of Confidential Records). The Public Advisor can answer any questions related to filing under these sections.

New addition(s) to the Proof of Service are indicated in **bold font** and marked with an asterisk (*). Additionally, if two or more persons are listed on a Proof of Service List with a single address, only one physical copy of a document need be mailed to the address.

Use this newly revised list for all future filings and submittals. This Proof of Service List will also be available on the Commission's Project Web Site at:

[http://www.energy.ca.gov/sitingcases/riomesa/index.html]

Please review the information and contact me at sharris@energy.state.ca.us or (916) 654-3893, if you would like to be removed from the Proof of Service or if there are any changes to your contact information.

Sandra Harris
Hearing Adviser's Office

Attachment