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July 2, 2010

DOCKET	
09-AFC-2	
DATE	JUL 02 2010
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383194.AP.PM

Ms. Felicia Miller
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Almond 2 Power Plant (09-AFC-02)
Technical Memorandum – Description of Suspected Special-Status Species Habitat along PG&E's Line 7216-03

Dear Ms. Miller:

Attached please find 1 hard copy and 1 electronic copy of the Almond 2 Power Plant's Technical Memorandum – Description of Suspected Special-Status Species Habitat along PG&E's Line 7216-03.

If you have any questions about this matter, please contact me at (916) 286-0249 or contact Susan Strachan at (530) 757-7038.

Sincerely,

CH2M HILL

Sarah Madams
AFC Project Manager

Attachment
cc: S. Strachan, Strachan Consulting
R. Baysinger, TID

Description of Suspected Special-Status Species Habitat along PG&E's Line 7216-03

PREPARED FOR: David Bise / California Energy Commission

PREPARED BY: Bridget Canty/CH2M HILL

COPIES: Tom Johnson/PG&E
Sarah Madams/ CH2M HILL
Debra Crowe/ CH2M HILL
Todd Ellwood/CH2M HILL
Susan Strachan/Strachan Consulting

DATE: June 29, 2010

Purpose

Pacific Gas and Electric Company (PG&E) proposes to extend its existing natural gas system with Line 7216-03 approximately 13.4 miles northward in Stanislaus County, California, to reinforce PG&E's existing natural gas service in the Modesto area and supply natural gas to a proposed power plant, the Turlock Irrigation District Almond 2 Power Plant located in an existing industrial area in Ceres, California.

A small area of an irrigated cattle pasture with an area of approximately 40 acres that is located just east of the pipeline corridor between W. Simmons Road and Harding Road was previously identified as potentially suitable for federally listed vernal pool crustaceans by CH2M HILL biologists, a "cattle wallow." In addition, during a subsequent meeting regarding the cattle wallow on June 1, 2010, the U.S. Fish and Wildlife Service expressed a concern that a portion of the pasture that appeared on an aerial photograph as dark in color, suggesting ponding, which could have provided suitable habitat for the federally listed California tiger salamander[1].

This document provides additional information about the existing conditions related to the cattle wallow, other low spots in the pasture, and the darkened area identified on the aerial photo, including the on-going irrigation regime, that, based on the facts discussed below, preclude occurrence of both vernal pool crustaceans and California tiger salamanders.

Background

Temporary ponding was first observed in a cattle wallow in the northwest corner of the fenced pasture adjacent to the pipeline corridor between W. Simmons Road and Harding Road in January 2010. Examinations of the cattle wallow conducted by CH2M HILL biologists on January 27, March 3, April 28, and May 19, 2010 noted the absence of the typical characteristics of vernal pools, such as bands of vernal-pool associated vegetation or

[1] Maryann Owens. 2010. Personal communication between Maryann Owens (USFWS) Debra Crowe (CH2M HILL),Bridget Canty (CH2M HILL), Susan Strachan (Strachan Consulting), and Tom Johnson (PG&E) regarding potential wildlife habitat in a pasture between W. Simmons Road and Harding Road. June 1.

hardpan or claypan soils. Further, to investigate the darkened area noted on the aerial photograph, CH2M HILL conducted a field habitat assessment on June 23, 2010.

Habitat Requirements for Special-Status Species and Nearest Known Occurrences

Vernal Pool Crustaceans

The following vernal pool crustaceans were identified as potentially occurring in Stanislaus County during the information review conducted for the PG&E natural gas pipeline corridor as well as the power plant site: conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*B. longiantenna*), vernal pool fairy shrimp (*B. lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*) referred to collectively here as "fairy shrimp". The life cycles of each of these species require a period of inundation (usually during the winter rainy season) followed by a period of drying out during the spring, summer and fall when fairy shrimp embryos form into cysts that are resistant to desiccation. Alteration of the wet/dry regime of vernal pool habitat can adversely affect the reproductive cycles of fairy shrimp. Increased inundation can reduce habitat suitability for vernal pool fairy shrimp as they are commonly found in only the smaller shorter-lived pools[2], which allow the species to complete its reproductive cycle. Presumably, if pools are inundated for a longer period of time, due to irrigation or other causes, the pools would begin to support predator species such as bullfrogs (*Bufo boreas*), which are known to prey on fairy shrimp[3]. The vernal pool tadpole shrimp requires ponding of at least 15 to 30 days to support reproduction, whereas, the conservancy, longhorn, and vernal pool fairy shrimp require 6-7 weeks of ponding in the winter and/or 3 weeks of ponding in the spring[3].

The nearest CNDDB occurrence of fairy shrimp is more than 10 miles from the proposed pipeline and power plant.

California Tiger Salamander

California tiger salamanders (*Ambystoma californiense*) breed in freshwater habitats including temporary ponds, stock ponds, and sometimes slow-moving streams[4]. This species typically requires ponding for at least 10 weeks to complete metamorphosis from larvae to juvenile salamanders[5]. After breeding, they move to upland areas where they inhabit burrows, usually those constructed by California ground squirrels (*Spermophilus beecheyi*) or other rodents. As with fairy shrimp, if pools are inundated for a longer period of time, due to irrigation or other causes, the pools would likely begin to support predator species such as bullfrogs (*Bufo boreas*) and introduced fish species, which are known to prey on tiger salamanders[6].

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[2] Eriksen, C. and D. Belk. 1999. Fairy shrimps of California's puddles, pools, and playas. Mad River Press, Inc.; Eureka, California. 196 pp.

[3] Morey, S. 1996. Amphibian life history attributes and implications for vernal pool conservation practice. C.W. Witham, E. Bauder, D. Belk, W. Ferren, and R. Ornduff(Editors). Ecology, Conservation and Management of Vernal Pool Ecosystems-Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA.

[4] California Herps. 2010. *Ambystoma californiense* - California tiger salamander. Accessed at: http://www.californiaherps.com/salamanders/pages/a.californiense.html.

[5] Feaver, P. E. 1971. Breeding pool selection and larval mortality of three California amphibians: *Ambystoma tigrinum californiense* Gray, *Hyla regilla* Baird and Girard, and *Scaphiopus hammondii* Girard. MA Thesis, Fresno State College, Fresno, CA.

[6] U.S. Fish and Wildlife Service. 2010. Species Account. California tiger salamander, *Ambystoma californiense*. Accessed at: http://www.fws.gov/sacramento/es/animal_spp_acct/california_tiger_salamander.pdf.

The nearest CNDDB occurrence of the California tiger salamander is approximately 9.5 miles from northern origination point of the proposed pipeline.

Existing Conditions
The cattle pasture located between W. Simmons Road and Harding Road has been actively used for grazing for more than 20 years. In addition to the cattle wallow previously identified in the northwest corner, field observations identified several other low spots in the pasture that hold water for short durations[7].

In addition, the darkened area noted on the aerial photograph was identified in the the field as a topographic high spot. This high spot, located in the southern part of the pasture and approximately 500 feet east of the proposed pipeline corridor, was identified by the landowner as a site where cattle gather, particularly on cool winter nights and other nights when the fields are inundated[7].

The current irrigation regime at the cattle pasture consists of flood irrigation approximately every 2 weeks from approximately March 1 to October 31[8]. During flood irrigation, the entire field is flooded over an 8-hour period at a rate of approximately 15 cubic feet per second. Winter rains typically keep the field inundated or fairly wet, precluding the need for irrigation during normal conditions in winter months.

Conclusions
The cattle wallow in the northwest corner of the pasture is one of several low areas in the pasture. The pasture is inundated frequently from winter rains and then from flood irrigation from spring into fall, but the cattle wallow and other low spots in the pasture do not typically pond water for more than a few days after irrigation or rain events. Due to this regime, the low spots/wallows are extremely unlikely to support fairy shrimp, as fairy shrimp require at least 15 days of continuous ponding followed by a dry season uninterrupted by anything more than occasional rainfall to support the development of cysts and completion of their life cycle. In this case, the flood irrigation regime in this cattle pasture is contrary to the wet-dry cycle associated with fairy shrimp. Therefore, because the cattle wallow and other low spots in the pasture do not pond for more than a few days at a time and because of the existing irrigation regime, which prevents complete drying of these features, this site does not provide suitable habitat for fairy shrimp and no impacts are expected to vernal pool fairy shrimp or their habitat.

The darkened area that appears on aerial photographs in the southern part of the pasture is a high spot or rise where cattle gather on cool nights, not a water feature. The topography of this rise precludes it from holding water. Low spots in the pasture may pond water for a few days after flood irrigation or rain events. Therefore, because of the lack of sufficient ponding to support reproduction, this site does not provide suitable habitat for the

[7] Scott Cole. 2010. Personal communication between Scott Cole (Turlock Irrigation District) and Susan Strachan (Strachan Consulting) regarding the irrigation regime and history of use at Parcel #87. June 23.

[8] Scott Cole. 2010. Personal communication between Scott Cole (Turlock Irrigation District) and Susan Strachan (Strachan Consulting) regarding the irrigation regime and history of use at Parcel #87. June 23.

California tiger salamander and no impacts from the proposed pipeline are expected to the species or its habitat.

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 TID ALMOND 2 *POWER PLANT PROJECT*

Docket No. 09-AFC-2

PROOF OF SERVICE
(Revised 2/8/10)

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DECLARATION OF SERVICE

I, Stephanie Moore, declare that on July 2, 2010, I served and filed copies of the attached Technical Memorandum – Description of Suspected Special-Status Species Habitat along PG&E's Line 7216-03, dated, July 2, 2010. 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/almond].

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:

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

_____ by personal delivery or by depositing in the United States mail at Sacramento, CA 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:

__x__ 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. 09-AFC-2
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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

Stephanie Moore