

BIOLOGICAL RESOURCES

Testimony of Stuart Itoga and Rick York

INTRODUCTION

This section provides the Energy Commission staff's analysis of potential impacts to biological resources from the construction and operation of the Russell City Energy Center (RCEC). This analysis addresses potential impacts to state and federally listed species, species of special concern, wetlands, and other areas of critical biological concern. This analysis also describes the biological resources of the project site and at the locations of appurtenant facilities. It also determines the need for mitigation, the adequacy of mitigation proposed by the applicant, and where necessary, specifies additional mitigation measures to reduce identified impacts to less than significant levels. It also determines compliance with applicable laws, ordinances, regulations, and standards (LORS), and recommends conditions of certification.

This analysis is based, in part, upon information provided in the RCEC Application for Certification (AFC) (RCEC 2001), workshops, staff data requests and Calpine/Bechtel responses, site visits, project description clarifications and discussions with various state and federal agency representatives.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

FEDERAL

- **Clean Water Act of 1977**

Title 33, United States Code, sections 1251-1376, and Code of Federal Regulations, part 30, section 330.5(a)(26).

- **Endangered Species Act of 1973**

Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq., designate and provide for protection of threatened and endangered plant and animal species, and their critical habitat.

- **Migratory Bird Treaty Act**

Title 16, United States Code, sections 703-712, prohibits the take of migratory birds.

STATE

- **California Endangered Species Act of 1984**

Fish and Game Code sections 2050 et seq. protects California's rare, threatened, and endangered species.

- **Nest or Eggs-Take, Possess or Destroy**

Fish and Game Code section 3503 protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs or any bird.

- **Birds of Prey or Eggs-Take, Possess, or Destroy**

Fish and Game Code section 3503.3 protects California's birds of prey and their eggs by making it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

- **Migratory Birds-Take or Possession**

Fish and Game Code section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act or any part of such migratory non-game bird.

- **Fully Protected Species**

Fish and Game Code sections 3511, 4700, 5050, 5515 prohibit take of animals that are classified as Fully Protected in California.

- **Significant Natural Areas**

Fish and Game Code section 1930 et seq. designates certain areas such as refuges, natural sloughs, riparian areas and vernal pools as significant wildlife habitat.

- **Native Plant Protection Act of 1977**

Fish and Game Code section 1900 et seq. designates state rare, threatened, and endangered plants.

- **California Code of Regulations**

Title 14, sections 670.2 and 670.5 list animals of California designated as threatened or endangered.

- **Clean Water Act**

To verify that the federal Clean Water Act permitted actions comply with state regulations, the RCEC will need to get a Section 401 certification from the San Francisco Bay Regional Water Quality Control Board. The Regional Board provides its certification after reviewing the federal Nationwide Permit(s) that is provided by the U.S. Army Corp of Engineers (USACE).

LOCAL

- **City of Hayward General Plan, Vegetation and Wildlife Habitats, General**

The planting of native vegetation should be encouraged, and whenever possible, vegetation removed during construction should be replaced. The City's remaining riparian plant communities should be protected and development should not encroach into important wildlife habitats. Documented habitats of unique, rare and/or endangered species of plants and wildlife should be protected, and application of toxic chemicals should be kept to a minimum.

- **City of Hayward General Plan, Vegetation and Wildlife Habitats, Shoreline**

Existing salt marshes should be preserved and new marshes established. Tidal flats and salt ponds of low salinity should be preserved for migratory waterfowl. Saltwater evaporation ponds should be preserved or enhanced in a manner commensurate with continued salt production, and activities that could have adverse effects on marine fisheries should be avoided.

SETTING

REGIONAL

The proposed project is located in the upper portion of the San Leandro Valley near the eastern shore of San Francisco Bay. The city of Oakland lies to the north, the foothills of the Diablo Range to the east and the city of Fremont to the south. The proposed project region was historically dominated by coastal salt marsh habitat. The diverse coastal salt marsh community supports a wide range of organisms; however, urban and industrial development, salt evaporation ponds, and horticultural landscapes have replaced much of the original coastal marsh habitat. There are several wildlife habitat restoration projects in the area which are attempting to restore wetlands, but only remnants of the original coastal salt marsh now exist in the form of preserves and refuges.

LOCAL

The proposed RCEC will occupy approximately 14.7 acres in the Industrial Corridor of the City of Hayward, California. Radio transmission facilities for station KFAX and a sandblasting facility presently occupy the proposed RCEC site. It is bordered to the north by the city of Hayward Water Pollution Control Facility, to the south by an area of uplands, a stormwater channel and retention pond and to the east by various industrial facilities. On the western border is a trucking terminal beyond which lie a variety of seasonal, fresh and brackish water wetlands.

Although the proposed project site is within an area zoned for industrial use, significant biological resources areas lie to the west and southwest of the proposed project site. These include: Hayward Area Parks and Recreation District's (HARD) salt marsh restoration project and East Bay Regional Parks District's (EBRPD) Cogswell Marsh and Salt Marsh Harvest Mouse Preserve. Approximately 20 acres of privately owned upland habitat is located south and southwest of the proposed RCEC site. This property forms a buffer zone between wetlands and areas of industrial development. The stormwater channel located south of the proposed site is used for regulating the flow of freshwater into the Salt Marsh Harvest Mouse Preserve.

Of the remaining habitat types within a one-mile radius around the proposed project site, approximately one-half include ruderal (weedy) vegetation and horticultural landscapes. The other habitat types found near the project include northern coastal salt marsh and brackish sloughs, emergent and brackish/freshwater marshes, annual grasslands and mud flats.

Annual grassland species found in the proposed project area are a mixture of grasses and herbaceous species. Non-native species include wild oat (*Avena fatua*), rip-gut brome (*Bromus diandrus*), bermuda grass (*Cynodon dactylon*), Italian rye grass (*Lolium multiflorum*), fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*), filaree (*Erodium cicutarium*) and bull mallow (*Malva nicaeensis*). Native species include three-week fescue (*Vulpia microstachys*), wild barley (*Hordeum leporinum*), coyote brush (*Baccharis pilularis*), wild pea (*Lathyrus* sp.) and California poppy (*Eschscholzia californica*).

Seasonal wetland vegetation on the proposed project footprint is dominated by salt grass (*Distichlis spicata*), alkali heath (*Frankenia salina*), curly dock (*Rumex crispus*), and spike rush (*Eleocharis* sp.). Pickleweed (*Salicornia virginica*), brass buttons (*Cotula coronopifolia*) and various ruderal (weedy) species dominate wetland vegetation at the stormwater retention pond.

Calpine/Bechtel provided information for a variety of sensitive species likely to occur in the project area including: alkali milk-vetch (*Astragalus tener*), Congdon's tarplant (*Hemizonia parryi* ssp. *congdonii*), hairless popcorn flower (*Plagiobothrys glaber*), western burrowing owl (*Athene cunicularia hypugea*), salt marsh harvest mouse (*Reithrodontomys raviventris*), salt marsh wandering shrew (*Sorex vagrans halicoetes*), black skimmer (*Rynchops niger*), California black rail (*Laterallus jamaicensis coturniculus*), California clapper rail (*Rallus longirostris obsoletus*), California least tern (*Sterna antillarum browni*), northern harrier (*Circus cyaneus*), and western snowy plover (*Charadrius alexandrinus nivosus*). For a list of sensitive species evaluated by Calpine/Bechtel see Table 1 below.

Table 1. Sensitive species evaluated by Calpine/Bechtel for the RCEC project area.

Scientific Name	Common Name	Federal/State/CNPS	Habitat in Impact area?
Plants			
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vetch	SC/--/1B	Yes
<i>Atriplex depressa</i>	Brittlescale	SC/--/1B	No
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	Big-scale balsamroot	--/--/1B	No
<i>Cordyanthus maritimus</i> ssp. <i>Palustris</i>	Point Reyes bird's-beak	SC/--/1B	Yes
<i>Cordyanthus mollis</i> ssp. <i>Hispidus</i>	Hispid bird's-beak	SC/R/1B	Marginal
<i>Fritillaria liliacea</i>	Fragrant fritillary	SC/--/1B	No
<i>Helianthella castanea</i>	Diablo rock rose	SC/--/1B	No
<i>Hemizonia parryi</i> ssp. <i>Congdonii</i>	Congdon's tarplant	SC/--/1B	No
<i>Horkelia cuneata</i> ssp. <i>sericea</i>	Kellog's horkelia	SC/--/1B	No
<i>Lasthenia conjugens</i>	Contra Costa goldfields	E/--/1B	No
<i>Lathyrus jepsonii</i>	Delta tulle pea	SC/--/1B	Marginal
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	SC/R/1B	No
<i>Plagiobothrys glaber</i>	Hairless popcorn flower	SC/--/1A	Yes
<i>Suaeda californica</i>	California seablite	PE/--/1B	Marginal
Mammals			
<i>Corynorhinus townsendii</i> <i>Townsendii</i>	Pacific western big-eared bat	SC/CSC	No
<i>Eumops perotis californicus</i>	Greater western mastiff-bat	SC/CSC	No
<i>Myotis evotis</i>	Long eared bat	SC/--	No
<i>Myotis thysanodes</i>	Fringed myotis bat	SC/--	No
<i>Myotis volans</i>	Long legged myotis bat	SC/--	No
<i>Myotis yumanensis</i>	Yuma myotis bat	SC/CSC	No
<i>Neotoma fuscipes annectens</i>	San Francisco dusky footed Woodrat	SC/CSC	No
<i>Reithrodontomys raviventris</i>	Salt marsh harvest mouse	E/E	Yes
<i>Sorex vagrans halicoetes</i>	Salt-marsh wandennng shrew	SC/CSC	Yes

Birds			
<i>Accipiter striatus</i> (nesting)	Sharp-shinned hawk	--/SSC	No
<i>Agelaius tricolor</i> (nesting Colony)	Tricolored blackbird	SC/CSC	No
<i>Amphispiza belli belli</i>	Bell's sage sparrow	SC/CSC	No
<i>Aquila chrysaetos</i> (nesting & Wintering)	Golden Eagle	--/SSC	
<i>Ardea herodias</i> (rookery)	Great blue heron	--/--	No
<i>Asio flammeus</i> (nesting)	Short-eared owl	--/SSC	No
<i>Aithya cunicularia hypugea</i> (burrow sites)	Western burrowing owl	SC/CSC	Yes
<i>Branta canadensis</i> <i>Leucopareia</i>	Aleutian Canada goose	T/--	No
<i>Buteo regalis</i>	Ferruginous hawk	SC/CSC	Winter foraging
<i>Charadrius alexandrinus</i> <i>Nivosus</i> (nesting)	Western snowy plover	T/CSC	No
<i>Circus cyaneus</i> (nesting)	Northern harrier	--/CSC	Yes
<i>Elanus leucurus</i> (nesting)	White-tailed kite	--/--	Yes
<i>Falco peregrinus anatum</i>	American peregrine falcon	--/E	Yes-foraging
<i>Geothlypis trichas sinuosa</i>	Common yellowthroat	SC/CSC	No-foraging
<i>Haliaeetus leucocephalus</i>	Bald eagle	T/E	No
<i>Laterallus jamaicensis</i> <i>Coturniculus</i>	California black rail	SC/T	No
<i>Melospiza melodia pusillula</i>	Alameda song sparrow	SC/CSC	Yes
<i>Pelicanus occidentalis</i> <i>Californica</i>	California brown pelican	E/E	No
<i>Phalacrocorax auritus</i>	Double-crested cormorant	--/SSC	No
<i>Rallus longirostris obsoletus</i>	California clapper rail	E/E	No
<i>Rynchops niger</i>	Black skimmer	--/SSC	Yes
<i>Riparia riparia</i> (nesting)	Bank swallow	--/T	No
<i>Sterna antillarum browni</i> (nesting colony)	California least tern	E/E	No
Reptiles			
<i>Clemmys marmorata</i> <i>Marmorata</i>	Northwestern pond turtle	SC/CSC	Marginal
<i>Clemmys marmorata pallida</i>	Southwestern pond turtle	SC/CSC	Marginal
<i>Masticophis lateralis</i> <i>Euryxanthus</i>	Alameda whipsnake	T/T	No
<i>Phrynosoma coronatum</i> <i>Frontale</i>	California horned lizard	SC/CSC	No
Amphibians			
<i>Ambystoma californiense</i>	California tiger salamander	C/CSC	No
<i>Rana aurora draytonii</i>	California red legged frog	T/CSC	No
<i>Rana boylei</i>	Foothill yellow legged frog	SC/CSC	
Fish			
<i>Hypomesus transpacificus</i>	Delta smelt	T/T	No
<i>Oncorhynchus kisutch</i>	Coho Salmon	T/E	No
<i>Oncorhynchus mykiss</i>	Central California Valley Steelhead	T/E	No
<i>Oncorhynchus mykiss</i>	Central California Valley Steelhead	T/E	No
<i>Oncorhynchus tshawytscha</i>	Winter run chinook salmon	E/E	No
<i>Pogonichthys macrolepotus</i>	Sacramento splittail	PT/CSC	No
<i>Sprninchus thaleichthys</i>	Longfin smelt	SC/CSC	No
Invertebrates			
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	T/--	No
<i>Danaus plexippus</i>	Monarch butterfly	--/--	No
<i>Hydrochara nckseckeri</i>	Ricksecker's scavenger Beetle	SC/--	Marginal
<i>Tryonia imitator</i>	Mimic tryonia (California Brackishwater snail)	SC/--	Marginal

Status Categories:

Codes used in the table are as follows:

E= Endangered; T= Threatened; R= California Rare; PE= Proposed Endangered C= Candidate: Taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened. SC= USFWS Species of Special Concern: Taxa for which existing information may warrant listing, but for which substantial biological information to support a proposed rule is lacking. SSC= CDFG "Species of Special Concern". CNPS (California Native Plant Society Inventory of Rare and Endangered Vascular Plants of California, 1994) List: 1A= Presumed extinct in CA; 1B= Rare or Endangered in CA and elsewhere; 2= R/E in CA and more common elsewhere; 3= Need more information; 4= Plants of limited distribution. -- = species not state listed.

ANALYSIS OF IMPACTS

Primary concerns associated with construction and operation of the proposed RCEC are habitat loss and the project's potential impacts to the following sensitive species:

- Salt marsh harvest mouse (*Reithrodontomys raviventris*), federally and state listed endangered.
- California clapper rail (*Rallus obsoletus*), federally and state listed endangered.
- California least tern (*Sterna antillarum browni*), federally and state listed endangered.
- Western snowy plover (*Charadrius alexandrinus nivosus*), federally listed threatened and state Species of Special Concern.

To address potentially significant impacts to sensitive species and habitats associated with the RCEC, Calpine/Bechtel has submitted a Biological Assessment (BA) to staff and the U.S Fish and Wildlife Service (USFWS). Staff has reviewed the BA and Calpine/Bechtel's proposed mitigation measures and has proposed Biological Resources Conditions of Certification to reduce potential impacts to levels less than significant.

At the present time, the USFWS has not reviewed the BA for the RCEC and has not decided on the need for a formal Section 7 consultation with the USACE. The USFWS will decide, after review of the BA, if the impacts to federally listed species are adverse and if a formal consultation is necessary.

Staff is concerned that Calpine/Bechtel has not submitted, for review and approval by staff and the USFWS, an avian predator perch deterrent monitoring plan; furthermore, no formal proposal for habitat compensation has been submitted. A suitable plan for mitigating construction and operational noise also needs to be proposed. Although Calpine/Bechtel is currently developing mitigation measures, they have yet to be formally submitted and approved by the USFWS, USACE and staff. Staff requires an agreement on mitigation measures between Calpine/Bechtel, the USFWS and staff be reached before they recommend the project for certification.

ENVIRONMENTAL CHECKLIST

	Potentially Significant	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X1			

	Potentially Significant	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES – Would the project:				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	X1 Wetlands fill		X Effluent discharge	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	X1-Noise X1-Habitat loss	X-Bird collision and electrocution		X Solids facility, gas and water lines, transmission line route, laydown areas
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

X1=Calpine/Bechtel is still developing mitigation measures in consultation with the USFWS, USACE and staff. Until adequate mitigation is agreed upon by the agencies, applicant and staff, the project has Potentially Significant and unmitigated impacts and staff can not recommend the project for certification.

DISCUSSION OF IMPACTS

Direct Impacts

a) Impacts to Listed or Sensitive Species: potentially significant impact.

Construction and operation of the RCEC could adversely affect the salt marsh harvest mouse, California clapper rail (*Rallus obsoletus*), California least tern (*Sterna antillarum browni*), and western snowy plover (*Charadrius alexandrinus nivosus*). The proposed architectural screening treatment and changes to the existing landscape could provide additional nest, perch and roost sites for avian predators (e.g. red-tail hawk, crows, ravens) of sensitive species in the proposed project area. To address these concerns, the applicant has proposed the following mitigation measures (Calpine/Bechtel 2001):

- All potential raptor perches on project infrastructure will be fitted with NIXALITE® or similar perch deterrent device.

- Landscaping at the project site will be limited to trees that discourage raptor perching.
- All new towers associated with the transmission line will be of non-lattice, single-pole construction.
- A raptor perching monitoring program will be developed and implemented.

Staff proposes that the project owner develop and implement a Sensitive Species Management Plan. This Management Plan must identify the landscaping species to be used. The landscaping species are to be chosen from a list provided by the USFWS (Calpine/Bechtel 2001). The Plan must also identify perch deterrent devices that will be installed on the power plant facilities such as the architectural façade and other facilities that may be of concern. And, this must address how the perch deterrent and landscaping will be monitored to determine if the devices and plans are effective, and what will be done if the perch deterrent plans are not effective. For more information, see Biological Resources Condition of Certification **BIO-14**.

It is staff's opinion that with the development and implementation of **BIO-14**, potential impacts to sensitive species can be reduced to levels less than significant. However, the USFWS has yet to review and approve the BA, and although Calpine/Bechtel submitted a BA for the RCEC, the raptor perching monitoring program proposed by Calpine/Bechtel (Calpine/Bechtel 2001) was not included. Before conclusions on impact significance associated with the proposed project can be made, staff requires review of this plan by the USFWS.

b) Impacts to Surrounding Wetlands: less than significant with mitigation incorporated.

Staff, USFWS, CDFG, HARD and EBRPD have all expressed concerns about the project's potential impacts to adjacent sensitive areas due to its stormwater runoff. Of particular concern are East Bay Regional Parks District's freshwater marsh and adjacent Salt Marsh Harvest Mouse Preserve.

Calpine/Bechtel has proposed a Storm Water Management Plan to be prepared. As part of their proposed plan, water discharge following storm events will be coordinated with the management of the HARD Marsh and the Salt Marsh Harvest Mouse Preserve to ensure discharge does not occur when salt water is being introduced into the marshes(Calpine/Bechtel 2001).

Staff proposes that the plan specifically address how stormwater runoff from the proposed project will be managed to prevent adverse impacts to surrounding wetlands managed by EBRPD and HARD. Staff concludes that if Calpine/Bechtel develops, and implements, the Stormwater Management Plan in consultation with all concerned agencies (including East Bay Regional Parks District and Hayward Area Recreation District), potential impacts to surrounding wetlands will be reduced to levels less than significant. For more information, see Biological Resources Condition of Certification **BIO-9** and Soil and Water Resources Condition of Certification **Soil & Water-3**.

c) Impacts to San Francisco Bay: less than significant impact.

The proposed project has the potential to affect shallow water habitat in San Francisco Bay. The project will share an existing effluent discharge pipe with the City of Hayward Water Pollution Control Facility (WPCF). The effluent from this pipe is discharged through the East Bay Dischargers Authority (EBDA) pipeline to the EBDA outfall in San Francisco Bay. The EBDA pipeline is shared by a number of users including the cities of: Hayward, Fremont, Union City, Newark, San Leandro and Livermore.

Calpine/Bechtel has indicated that, at peak conditions, the proposed project will use 5.27 million gallons per day (mgd) of secondary effluent obtained from the WPCF. The secondary effluent will be treated at the RCEC Advanced Wastewater Treatment Plant (AWT) so that tertiary effluent (water) may be used for cooling and process water. At peak levels, the RCEC will return 0.07 mgd of cooling wastewater and 1.47 mgd of wastewater from the AWT to the City of Hayward Water Pollution Control Facility (WPCF). A net reduction in the volume of liquid effluent discharged from the WPCF is expected (13.3 mgd to 9.5 mgd) due to losses at the RCEC from cooling tower evaporation.

The temperature of the cooling tower wastewater when it leaves the RCEC is projected to be between 85 and 100 degrees Fahrenheit (Calpine and Bechtel 2001b). AWT wastewater is not used in the cooling process and is not discharged at elevated temperatures. The cooling tower wastewater from the RCEC (0.07 mgd) will combine with AWT wastewater and large volumes of existing effluent from the WPCF and EBDA pipeline before discharge at the EBDA outfall approximately 12 miles from the RCEC. The dilution of RCEC wastewater with existing effluent and the distance traversed before discharge will provide sufficient cooling before discharge to the bay.

Staff concludes that wastewater from the proposed RCEC will have a less than significant impact on the water quality of shallow water habitats in the vicinity of the effluent outfall.

c) Fill of Jurisdictional Wetlands: potentially significant impact.

The proposed project will fill approximately 1.68 acres of jurisdictional wetlands. Calpine/Bechtel has completed a wetland delineation, which has been verified by the USACE. Calpine/Bechtel will need to procure an individual permit under Section 404 of the Clean Water Act, see Biological Resources Condition of Certification **BIO-7**.

In consultation with the USFWS, USACE and staff, Calpine/Bechtel is attempting to identify suitable habitat compensation to mitigate the fill of jurisdictional wetlands, but no formal habitat compensation measures have been proposed.

Staff concludes that the proposed project has the potential to adversely impact jurisdictional wetland habitat, but staff has proposed a condition that will mitigate this impact by requiring Calpine/Bechtel to provide compensation for the fill of 1.68 acres of wetlands. For more information see Biological Resources Condition of Certification, **BIO-10**.

d) Construction and Operational Noise: potentially significant impact.

Staff is concerned that construction impacts, particularly noise, could directly impact sensitive species nesting areas and wildlife using the surrounding areas. The USFWS has also raised this as a concern. Calpine/Bechtel estimates noise levels from pile-driving and steam blow activities will range from 106 dBA @ 50 feet to 65 dBA @ 1.02 miles (Calpine and Bechtel 2001c). Sensitive nesting species within a one-mile radius of the proposed project site could be exposed to noise levels above 60 dBA. A general rule for estimating noise levels at increasing distances is to decrease the noise level by 6 dBA as the distance is doubled (Birdsell 2001). Applying this to the pile-driving and steam blow activities provides estimated noise levels of 100 dBA @ 100 feet, 76 dBA @ 1,600 feet (> ¼ mile) and 70 dBA @ 3,200 feet (> ½ mile) respectively.

Numerous waterfowl and shorebird species inhabit the proposed project region, and some studies indicate ducks, geese, long distance migrants and colonial nesting birds are particularly susceptible to noise disturbances (Burger, 1981; Markham and Brechtel 1979). Recon (1980) concluded that noise levels above 60 dBA affected the territorial behavior of the Least Bell's vireo (*Vireo bellii pusillus*), a state and federally listed species not known from the RCEC project region. This noise level is also used by the USFWS as a reference point for evaluating noise impacts to wildlife (Buford, personal communication, 2001).

Noise disturbances from construction activities during the mating and nesting season may have an adverse effect on formation of pair bonds and/or reproductive success of sensitive species in the project area; furthermore, construction related disturbances could discourage habitat use by wildlife. Information obtained from the EBRPD documents the presence of several breeding/nesting species under federal/state protection within a one-mile radius of the project footprint (Taylor personal communication 2001). These include: federally and state endangered -salt marsh harvest mouse (*Reithrodontomys raviventris*), federally threatened, state species of concern-Western snowy plover (*Charadrius alexandrinus nivosus*), federally and state endangered-clapper rail (*Rallus longirostris obsoletus*), state species of concern, black skimmer (*Rynchops niger*) and the state and federally endangered-California least tern (*Sterna antillarum browni*). Joe Didonato, Wildlife Program Manager for the East Bay Regional Parks District, indicated the presence of snowy egret (*Egretta thula*) and black-crowned night heron (*Nycticorax nycticorax*) rookeries within one-quarter mile of the proposed project site (Didonato personal communication 2001). These rookeries are listed as sensitive by CDFG.

Indirect Impacts

Calpine/Bechtel has indicated that operational noise levels of the RCEC are expected to be approximately 69 dBA at the perimeters of the proposed project footprint (Calpine and Bechtel 2001c). Operational noise levels of the proposed project could indirectly impact upland habitat adjacent to the proposed RCEC site. This upland area is an important buffer zone between wetlands and areas of industrial development.

Operational noise expected from a 24 hour/day, 7day/week operations schedule would exist for the life of the proposed power plant. Operational noise at the projected level, could adversely affect the physiology and behavior of wildlife in the adjacent upland area and other nearby wildlife habitats.

Calpine/Bechtel has proposed the following mitigation measures (Calpine/Bechtel 2001):

- Avoid sudden loud noises during construction and operation.
- Monitor species reaction to noise levels during construction. This can be accomplished by assessing waterfowl/shorebird breeding in adjacent habitats and assessing reaction of nesting pairs. If construction noise, particularly pile driving and steam blows, disturbs nesting birds, implement measures to protect the birds from the noise. These measures could include erection of temporary noise baffles in the pile driving area.
- Assess existing noise levels and strive to maintain or decrease these levels over time.

Staff concludes that construction and operational noise associated with the proposed RCEC could adversely affect sensitive species nesting areas and wildlife in the surrounding areas. Staff proposes that the project owner develop a construction and operational noise mitigation plan that addresses how noise impacts to state and federally listed nesting and breeding sensitive vertebrate species will be minimized during construction and for the life of the project. For more information, see Biological Resources Condition of Certification, **BIO-12**.

d) Permanent and Temporary Habitat Loss: potentially significant impact.

Calpine/Bechtel conducted sensitive species surveys for the proposed project site and for a one-mile radius around it. Calpine/Bechtel indicated no sensitive species were observed during these surveys, but the proposed power plant site is utilized by a variety of wildlife, and nearby open-space areas are used by a variety of sensitive nesting species (Itoga personal observation 2001, Taylor 2001, Didonato 2001).

Although the proposed plant site is zoned industrial, current use leaves most of it as open-space. Construction of the proposed RCEC will displace wildlife species from the wetland and grassland habitats on the project site. In addition, construction of the proposed project will eliminate habitat available to species in nearby wetland areas. Kantrud and Stewart (1984) and Cowardin (1969), found that some wetland species require a combination of wetland and other land cover types. Daily movement between pickleweed (*Salicornia virginica*) and grasslands often are exhibited by the state and federally listed endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) (California Department of Fish and Game, 1990). Many wildlife species are known to move between different habitat types in sustaining their daily energy budgets.

The proposed power plant will occupy approximately 14.7 acres. Construction of the proposed RCEC will result in the permanent loss of approximately 9.4 acres of annual grassland and approximately 1.68 acres of jurisdictional wetlands.

Calpine/Bechtel indicated that expansion of PG&E's East Shore Substation will be needed to accommodate the input from the proposed RCEC (Calpine and Bechtel 2001) and that acquisition of approximately two acres of PG&E land will also be required (Calpine and Bechtel 2001b). The land proposed for substation expansion supports ruderal vegetation and is currently undeveloped. Total acreage required for

the proposed expansion will need to be included in calculation of project impact acreage.

In addition to permanent habitat loss, Calpine/Bechtel has proposed a 10-acre construction laydown/worker parking area to be located on open land south of PG&E's East Shore Substation (Calpine and Bechtel 2001b). As with the substation expansion, staff considers the open land around the substation to be habitat. The use of this area for parking will temporarily disturb habitat and will be included in the calculation of project impact acreage as temporary habitat loss. Although Calpine/Bechtel has informally discussed habitat compensation measures with USFWS, EBRP and staff, no formal mitigation proposal has been made.

Staff concludes that the proposed project will cause permanent and temporary losses of habitat. Consequently, staff has proposed conditions that will require Calpine/Bechtel to provide habitat compensation for the permanent losses of 9.4 acres of annual grassland, 1.68 acres of seasonal wetlands and 2.0 acres of ruderal habitat. In addition, compensation for temporary habitat loss associated with 10.0 acres of ruderal habitat will also be required. For more information see Biological Resources Condition of Certification **BIO-10**.

d) Collision and Electrocutation: less than significant impact

The close proximity of the proposed project to sensitive biological resource/open-space areas combined with diverse communities of avian species create the potential for direct impacts to birds through electrocution or collisions with transmission lines/towers, architectural screening, boiler, cooling tower and exhaust stacks. During storms, birds may be attracted to the power plant by artificial night lighting thereby increasing the risk of collisions.

Birds can be electrocuted when they simultaneously contact two conductors of different phases or contact a conductor and a ground. Bird electrocutions are commonly associated with distribution lines, not transmission lines, due to closer spacing of conductors and grounds (APLIC 1996). Staff anticipates that the proposed RCEC transmission line towers and conductors will be constructed to federal standards (PUC 1981 - General Order 95). These standards require minimum distances between conductors, and therefore make it highly unlikely that even very large birds (hawks, eagles, etc.) are likely to contact different phases or contact a conductor and a ground. Staff concludes that the proposed RCEC transmission lines will not pose a significant electrocution hazard to birds in the project area.

Avian collisions with architectural screening, boiler stacks, cooling towers and turbine stacks are possible; however, Calpine/Bechtel has indicated that the tallest stack proposed for the RCEC heat recovery steam generator (HRSG) will not exceed 145 feet in height. The architectural screening surrounding the HRSG units and stacks will be approximately 135 feet tall. The cooling tower stacks and associated screening have a projected height of 64 feet. These structures are considered relatively short and of low risk for bird collisions, as most documented bird collision deaths are associated with facilities ranging from 500 to 650 feet high (Goodwin 1975, Maehr et al. 1983, Weir 1974, Zimmerman 1975). Additionally, lighting will be shielded to direct light downward,

reducing the risk of bird attraction. (see Visual Resources Assessment, Condition of Certification **VIS-5**). For these reasons, staff does not anticipate significant impacts to birds from collisions with stacks or architectural screening.

d) Collisions: less than significant with mitigation incorporated

Collisions with transmission lines have also been documented as a source of bird mortality. Commonly associated with migratory birds, collisions are likely to occur during periods of darkness or inclement weather, and usually occur when birds impact ground wires located above the conductors. In consultation with EBRPD, USFWS and CEC staff has determined that because of the large numbers of migratory birds in the proposed project area, the ground wire(s) associated with the project could pose a significant collision hazard if they are located above the conductors.

To minimize the potential for bird collisions with ground wires, Calpine/Bechtel has proposed the use of bird flight deterrents, such as streamers (Calpine/Bechtel 2001).

Staff concludes that the proposed transmission line will pose a significant collision hazard to birds in the area; however, the installation of bird flight diverters on transmission line ground wires will reduce the risk of collision to levels less than significant. Staff proposes the use of the Swan Flight Diverter. See Biological Resources Condition of Certification **BIO-13**.

d) Solids handling facility, laydown areas and linears: no impact.

Calpine/Bechtel has proposed a relocation plan to move a portion of the RCEC AWT across Enterprise Avenue to the WPCF. The proposed relocation will occupy 1.38 acres within the WPCF fence line. Currently, the proposed relocation site is used for drying and storing sludge created in the water treatment process. The proposed area is bordered on the north by auto salvage yards and to the west by sewage ponds. Movement of sludge for drying and storage is done by heavy machinery leaving the area highly disturbed. Foster Wheeler staff conducted a sensitive species survey of the proposed site on September 5, 2001, and concluded the proposed site did not contain suitable sensitive species habitat (Calpine and Bechtel 2001b). Staff agrees with their assessment and concludes that relocation of the solids handling facility to the proposed WPCF site will not impact biological resources in the area.

Calpine/Bechtel has proposed two additional construction laydown areas. The two sites consist of a 10-acre trailer storage area off Depot Road and a five-acre trailer storage site located on Enterprise Avenue. These proposed laydown areas are paved/graveled areas with only sparse ruderal vegetation. Considering the disturbed nature and current levels of industrial activity already affecting these proposed areas, staff concludes that there will be no impacts to biological resources from the use of these areas for construction laydown and worker parking.

Calpine/Bechtel has proposed approximately 0.9 miles of new pipeline to supply the RCEC with natural gas from an existing PG&E line. The proposed RCEC line will be routed beneath paved roadways, a graveled portion of a Berkeley Farms processing plant and a set of Union Pacific Railroad (UPRR) tracks. The proposed pipeline will be connected to the PG&E pipeline located west of the UPRR tracks. Because of the

existing urban development and disturbance along the proposed route, staff anticipates no impacts to biological resources from construction of the natural gas pipeline.

To connect the RCEC to PG&E's Eastshore Substation, an overhead transmission line has been proposed. Calpine/Bechtel has proposed 600 feet of new line from the RCEC switchyard to the existing East Bay-Grant 115-kV transmission line corridor, approximately 1.1 miles of new 230-kV overhead line and seven additional towers. The tie-in from the East Bay-Grant Corridor lines to the Eastshore Substation will require approximately 500 feet of additional transmission line (Calpine and Bechtel 2001).

Calpine/Bechtel originally indicated five new towers would replace existing towers in the East Bay Grant 115-kV corridor. It has now been proposed that the new line will be constructed parallel to the existing one (Calpine and Bechtel 2001b). The parallel lines will be spaced 80 feet apart. Calpine/Bechtel has indicated that seven tubular, not lattice, towers will be constructed (Calpine and Bechtel 2001b). Staff believes that tubular towers are more desirable than lattice towers since tubular towers provide minimal perch opportunities for birds and pose less of a collision threat.

The proposed RCEC transmission line will traverse areas of commercial and industrial development. Calpine/Bechtel has indicated that five of the proposed tower locations are covered with asphalt. The sixth will be located within the State Route 92 on-ramp loop. Calpine/Bechtel has indicated that the ground within this loop is covered with sand, piles of dirt and asphalt fill. The seventh tower will be located north of Enterprise Avenue near the proposed RCEC site (Calpine and Bechtel 2001b). Sensitive species surveys done by Calpine/Bechtel for the originally proposed transmission line were conducted for 1000 feet on each side of the existing line (Calpine and Bechtel 2001). Staff has reviewed the proposed tower locations and concludes that because the proposed route will traverse disturbed areas and will be located within the existing transmission line corridor, the original transmission line surveys conducted by Calpine/Bechtel are sufficient to address potential impacts caused by construction of the newly proposed transmission line, and staff anticipates no impacts to biological resources along the proposed route.

Calpine/Bechtel has proposed the construction of the RCEC Advanced Wastewater Treatment Plant (AWT) for treatment of secondary effluent obtained from the City of Hayward Water Pollution Control Facility (WPCF). Enterprise Avenue separates the proposed RCEC and the WPCF. The AWT will process secondary effluent delivered from the WPCF before use as cooling and process water. After cycling through the cooling process, the water will be returned to the wastewater treatment plant. Calpine/Bechtel has indicated that all pipelines proposed for inflow and outflow of industrial and potable water will be routed underground. Inflow and outflow pipelines connecting the WPCF and the proposed RCEC will be routed beneath Enterprise Avenue. Calpine/Bechtel has proposed a connecting pipeline from the East Bay Dischargers Authority pipeline to the AWT. This connecting pipeline will also be routed underground beneath Enterprise Avenue and the WPCF site. Because the pipelines will be routed beneath disturbed/developed areas, staff does not anticipate any adverse biological resource impacts due to construction of water pipelines.

e) Local policies or ordinances: no impact.

Staff does not anticipate any conflicts with local policies or ordinances.

f) Habitat conservation plans: no impact.

HARD has filed a local plan identified as the Hayward Shoreline Enhancement Plan. Following conversations with HARD staff (Willyerd personal communication, September 10, 2001), who have reviewed the proposed RCEC project, staff has concluded that the RCEC will not be in conflict with the Hayward Shoreline Enhancement Plan or any other approved local, regional, or state habitat conservation plan.

CUMULATIVE IMPACTS

Staff concludes that this project may have cumulative effects due to anticipated habitat impacts (loss of wildlife habitat and wetlands), increased noise, increased risk of bird collisions with transmission line ground wires and impacts to sensitive species by predatory bird species. The loss of wetlands and wildlife habitat have resulted from various projects in the proposed project area, and construction of the RCEC will develop some of the last remaining upland areas adjacent to the Hayward Shoreline. These upland areas act as buffer zones between wildlife habitat and areas of industrial development. In addition, industrial activities associated with these developments have caused an increase in noise levels, to which the proposed project could contribute. Increased noise levels could potentially impact nesting sensitive species and other wildlife in areas close to the plant site. Staff is also concerned that the addition of new transmission line ground wires within the existing East Bay-Grant Corridor would increase the risk of collisions for migratory birds in the area, and the proposed project could provide additional perch opportunities for avian predators of sensitive species in the project area.

COMPLIANCE WITH LORS

The proposed project will fill 1.68 acres of seasonal wetlands, and Calpine/Bechtel will need to apply for, and procure, a USACE Section 404 permit to be in compliance with the federal and state Clean Water Acts.

The USFWS requested a Biological Assessment for the proposed RCEC and is informally discussing the project. This document has been submitted but needs to be reviewed by the USFWS, USACE and CDFG before a determination of need for a formal Section 7 consultation can be made. Until the USFWS makes a decision on the need for a formal Section 7 consultation, CEC staff can not determine the proposed project's compliance with applicable LORS. However, Biological Resources Condition of Certification **BIO-6** requires all consultation mitigation measures be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan (Biological Resources Condition of Certification, **BIO-4**).

FACILITY CLOSURE

Sometime in the future, the RCEC will experience either a planned closure, or be unexpectedly (either temporarily or permanently) closed. When facility closure occurs, it must be done in such a way as to protect the environment and public health and safety. To address facility closure, an "on-site contingency plan" will be developed by the project owner, and approved by the Energy Commission Compliance Project Manager (CPM). Facility Closure mitigation measures will also be included in the Biological Resources Mitigation Implementation and Monitoring Plan prepared by the applicant.

The restoration of annual grassland and seasonal wetland habitats on the proposed project footprint will need to be addressed in any discussion of facility closure. Habitat restoration plans should include such tasks as the removal of all structures and the immediate implementation of habitat restoration measures to establish native plant species and native habitat.

Staff does not have any biological resource facility closure recommendations in the event of an unexpected temporary closure of the RCEC. However, in the event that the Energy Commission CPM decides that the facility is permanently closed, the facility closure measures provided in the on-site contingency plan and Biological Resources Mitigation Implementation and Monitoring Plan would need to be implemented.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

AGENCY COMMENTS

U.S. Fish and Wildlife Service

USFWS (8-27)-1: *Landscaping and infrastructure will provide roosting and perching locations for avian predators of the salt marsh harvest mouse, California clapper rail, California least tern, and western snowy plover and an increase in power lines may contribute to an increase in bird collisions with the power lines.*

Staff response: In consultation with USFWS and the CEC, Calpine/Bechtel is developing a landscape plan to deter the perching, nesting/roosting of avian predators that are known to prey upon local sensitive species. A monitoring plan will also be implemented to determine if the perch deterrents are effective. If the monitoring plan indicates that perch deterrents are not effective, a sensitive species management plan may be needed. With respect to power lines and bird collisions, tubular steel towers will be used for all transmission line towers associated with the RCEC. Tubular towers greatly reduce the collision hazard for birds, but they also offer only limited perch opportunities. Regarding bird collisions with power lines, Calpine/Bechtel is investigating the feasibility of using sub-surface ground wire/s on the RCEC transmission lines. If sub-surface ground wires can not be used, staff will require bird flight diverters be placed on ground wires.

USFWS (8-27)-2: *Effluent discharge and storage may result in alteration of existing habitat through added freshwater in a salt marsh, which may result in an alteration of available prey for the California clapper rail, California least tern and western snowy plover.*

Staff response: Effluent discharge from the proposed RCEC will not adversely affect the local salt marsh or shallow water habitats in San Francisco Bay. The proposed RCEC will obtain approximately 5.27 million gallons/day of secondary effluent from the City of Hayward Wastewater Treatment Plant (WWTP). This water will then be treated at the RCEC Advanced Wastewater Treatment Plant to tertiary effluent for use as cooling and process water. After the tertiary effluent has been used as cooling and process water, approximately 1.48 mgd will be returned to the WWTP where it will be mixed with existing secondary effluent before being discharged to the bay. The overall effect of the RCEC wastewater to the EBDA discharge would be a 3.7 mgd reduction in the volume of liquid effluent discharged to the bay.

USFWS (8-27)-3: *The applicant stated they would investigate conservation actions such as purchasing fee title or a conservation easement of local salt marsh, tidal flats or adjacent uplands to provide compensation for long-term impacts to species and resources.*

Staff response: Although Calpine/Bechtel has not formally proposed any habitat compensation measures, staff will propose conditions that would require Calpine/Bechtel to mitigate for loss of wetlands, annual grasslands and other habitats, as well as impacts to sensitive species.

East Bay Regional Parks District

EBRPD (8-20)-1: *The project information states that "temporary fencing" will be provided to ensure that entry into the sensitive salt marsh areas is avoided. The project does not adequately discuss or provide mitigation for the potential loss of sensitive habitat.*

Staff response: Calpine/Bechtel will be required by staff to provide habitat compensation for the loss of wetlands and annual grassland habitats. Appropriate compensation for loss of habitat and impacts to sensitive species will be developed in consultation with the USFWS, USACE, CDFG, EBRPD and staff.

EBRPD (8-20)-2: *The project information fails to adequately address potential impacts to the District's Salt Marsh Harvest Mouse Preserve. The preserve is contiguous with similar habitat owned by the City of Hayward. Runoff from the project during rain events, emergencies, and normal routine may carry toxic substances into these lands and be distributed throughout the preserve. Additionally, the hydraulic dynamics of the preserve are linked with the District's operation of the freshwater marsh. Draining the preserve is dependent on the management of the freshwater marsh and it can take several days to drain water to reduce the impacts to the preserve.*

Staff response: To avoid negative impacts to the surrounding wetland habitats, Calpine/Bechtel has agreed to work with personnel from HARD and the EBRPD in

developing a storm water management plan. Staff will require that this plan be completed prior to the start of project construction.

EBRPD (8-20)-3: *New available perches can increase predation or harassment of sensitive species by perching birds. The project information fails to identify the type of devices and document their level of success in reducing perching birds.*

Staff response: Staff will propose that Calpine/Bechtel develop a landscape plan in consultation with USFWS, CDFG and staff. This plan will include all methods to be used to deter perching, nesting/roosting of avian predators that could prey on sensitive species in the area. A monitoring plan will also need to be developed to assess the effectiveness of perch deterrents and a contingency plan to be implemented should monitoring indicate that the perch deterrents are ineffective. The landscaping plan, perch deterrent devices, monitoring plan, and contingency plan will need to be approved prior to the start of project construction.

EBRPD (8-20)-4: *Many of the potentially impacted plants would not be identifiable until December, rather than in February, March and April times identified. Scientific surveys need to be taken at the appropriate time of year to determine the extent of potentially significant impacts to many of the special status plant species.*

Staff response: Upon reviewing the sensitive plants survey information submitted by the applicant, staff concludes that suitable sensitive plant habitat does not exist at the project site or along the transmission line corridor. Further, survey protocols used by the applicant were appropriate and conducted over sufficient time to detect the presence of sensitive plant species in the area.

City of Hayward

CITY (7-27)-1: *Show how structures will be designed to prevent raptors from perching on structures where they could otherwise easily prey upon nearby protected species.*

Staff response: Staff will require that Calpine/Bechtel develop, in consultation with the USFWS, CDFG and EBRPD, a perch deterrent strategy to prevent raptors from perching and to assess the effectiveness of the devices and plan. If the plan is not successful, a contingency plan will need to be implemented.

PUBLIC COMMENTS

Audrey Lepell, letter dated August 21, 2001:

Will the screened building, towers and other structures be too attractive to the birds on this international flyway? Will any design be too attractive to the bird life that lives year round in the Bay Area?

Staff response: In addition to implementing landscape plan designed to deter perching opportunities, the applicant will control bird access through the use of exclusion techniques. These techniques will be reviewed and approved by the USFWS, DFG and the CEC.

Viola Saima-Barklow, public comment form dated August 20, 2001:

What impact will the proposed project have on nesting swallows?

Staff response: Staff has been informed by Calpine/Bechtel that the proposed power plant facilities will not provide suitable nesting opportunities since the majority of the facilities will lack overhangs and eaves. In addition, the majority of the project facilities will be smooth, painted, metal surfaces that are not used by swallows for nesting. The applicant has indicated that birds will be discouraged from using the RCEC for nesting through exclusion devices. Any exclusion devices employed by Calpine/Bechtel will need to be approved by the USFWS, CDFG and staff.

CONCLUSIONS

Staff has identified several potential impacts to sensitive species and habitat associated with the proposed project. Three impacts remain unmitigated. Calpine/Bechtel proposed a list of mitigation measures in their Application for Certification and Biological Assessment (Calpine/Bechtel 2001, 2001c) and are currently developing an off-site mitigation plan. Mitigation strategies in the areas of predator perch deterrent monitoring, construction and operational noise, and habitat compensation are currently being developed. However, the USFWS has not indicated if the identified impacts to federally-listed species (perching of avian predators) are adverse or if a Section 7 No
B.O. Biological Opinion will be necessary for the RCEC project. At this point, the USFWS has continued to *informally* discuss the project and the applicant's proposed mitigation with the U. S. Army Corps of Engineers. As requested by the USFWS, Calpine/Bechtel submitted a Biological Assessment, which is in review by the USFWS. If additional impacts to federally listed species are identified, or if identified impacts are deemed adverse, then an informal consultation or a Section 7 Biological Opinion will be necessary. No

The USFWS may require mitigation that is more extensive than what is currently proposed by the applicant. Staff is concerned that Calpine/Bechtel has not proposed any formal habitat compensation measures or a raptor perching monitoring program as part of the BA. A suitable noise mitigation plan also needs to be developed. Staff concludes that the proposed RCEC could adversely affect biological resources in the project area without these three measures, and have required them as Biological Resources Conditions of Certification (**BIO-10, BIO-12 and BIO-14**). The Biological Resources staff requires an agreement be developed on the types of mitigation required before they could recommend the project for certification.

CONDITIONS OF CERTIFICATION

Designated Biologist

- ✓ **BIO-1** Construction-site and/or ancillary facilities preparation (described as any site mobilization activity other than allowed geotechnical work) shall not begin until an Energy Commission Compliance Project Manager (CPM) approved Designated Biologist is available to be on site.

Protocol: The Designated Biologist must meet the following minimum qualifications:

- 1) a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field,
- 2) three years of experience in field biology or current certification of a nationally recognized biological society, such as the Ecological Society of America or The Wildlife Society,
- 3) one year of field experience with resources found in or near the project area, and
- 4) an ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resource tasks that must be addressed during project construction and operation. If the CPM determines the proposed designated biologist to be unacceptable, the project owner shall submit another individual's name and qualifications for consideration. If the approved designated biologist needs to be replaced, the project owner shall obtain approval of a new designated biologist by submitting to the CPM the name, qualifications, address, and telephone number of the proposed replacement.

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Verification: At least 30 days prior to the start of any site mobilization activities at the project site and/or at ancillary facilities, the project owner shall submit to the CPM for approval, the name, qualifications, address, and telephone number of the individual selected by the project owner as the designated biologist. If a designated biologist is replaced, the information on the proposed replacement as specified in the condition must be submitted in writing to the CPM. If the project owner is not in compliance with any aspect of this condition, the CPM will notify the project owner of making this determination within 14 days of becoming aware of the existence of any noncompliance. Until the project owner corrects any identified problem, construction activities will be halted in areas specifically identified by the CPM or designee as appropriate to assure the potential for significant biological impacts is avoided. For any necessary corrective action taken by the project owner, a determination of success or failure of such action will be made by the CPM after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

BIO-2 The CPM approved Designated Biologist shall perform the following duties:

- 1) advise the project owner's supervising construction or operations engineer on the implementation of the biological resource conditions of certification,
- 2) supervise or conduct mitigation, monitoring, and other biological resource compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species, and

3) notify the project owner and the CPM of any non-compliance with any condition.

Verification: The Designated Biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted along with the Monthly Compliance Reports to the CPM.

BIO-3 The project owner's supervising construction and operating engineer shall act on the advice of the Designated Biologist to ensure conformance with the biological resource conditions of certification.

Protocol: The project owner's supervising construction and operating engineer shall halt, if needed, all construction activities in areas specifically identified by the Designated Biologist as sensitive to ensure that potential significant biological resource impacts are avoided.

The Designated Biologist shall:

- 1) advise the project owner and the supervising construction and operating engineer when to resume construction, and
- 2) advise the CPM if any corrective actions are needed or have been instituted.

Verification: Within two working days of a designated biologist notification of non-compliance with a Biological Resources condition or a halt of construction, the project owner shall notify the CPM by telephone of the circumstances and actions being taken to resolve the problem or the non-compliance with a condition. For any necessary corrective action taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Biological Resources Mitigation Implementation and Monitoring Plan

- ✓ **BIO-4** The project owner shall submit to the CPM for review and approval a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and, once approved, shall implement the measures identified in the plan.

Protocol: The BRMIMP shall identify:

- 1) All Biological Resource Conditions included in the Commission's Final Decision;
- 2) A copy of the final, approved Sensitive Species Management Plan. The final, approved plan will include detailed information regarding how nesting, perching/roosting of raptors and corvids (crows and ravens) will be discouraged. Also to be included are the final plans for monitoring the

success of perch deterrents and a contingency plan to be implemented if predation of sensitive species is determined to be significant.

3) A copy of the final Storm Water Management Plan to be implemented so sensitive wetland habitats in the project area will not be impacted by the RCEC.

4) A list of all measures which will be implemented to mitigate the construction and operational noise impacts caused by the proposed RCEC;

5) A list and a map of locations of all sensitive biological resources to be impacted, avoided, or mitigated by project construction and operation;

6) A list of all terms and conditions set forth by the USACE Section 404 permit and state 401 certification;

7) Detailed descriptions of all measures that will be implemented to avoid and/or minimize impacts to sensitive species and reduce habitat disturbance;

8) All locations, on a map of suitable scale, of areas requiring temporary protection and avoidance during construction;

9) Aerial photographs (scale 1:200) of all areas to be disturbed during construction activities-one set prior to site disturbance and one set after project construction. Include planned timing of aerial photography and a description of why times were chosen.

10) Duration for each type of monitoring and a description of monitoring methodologies and frequency;

11) Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

12) All performance standards and remedial measures to be implemented if performance standards are not met;

13) A discussion of biological resource-related facility closure measures;

14) A process for proposing plan modifications to the CPM and appropriate agencies for review and approval;

15) A copy of the Section 7 Biological Opinion, or letter from the USFWS stating the project will not require one, and incorporation of all terms and conditions into the final BRMIMP.

16) A discussion of bird flight diverters and how they will be replaced and maintained during the life of the project.

17) Written verification that the required habitat compensation has been purchased and a suitable endowment has been provided to manage the habitat compensation acreage in perpetuity.

18) A copy of the final construction and operational noise mitigation plan.

Verification: At least 30 days prior to start of any site mobilization activities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plans acceptability. The project owner shall notify the CPM five (5) working days before implementing any CPM approved modifications to the BRMIMP.

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which mitigation and monitoring plan items are still outstanding.

Worker Environmental Awareness Program

BIO-5 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about sensitive biological resources associated with the project.

Protocol: The Worker Environmental Awareness Program must:

- 1) Be developed by the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;
- 2) Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
- 3) Present the reasons for protecting these resources;
- 4) Present the meaning of various temporary and permanent habitat protection measures; and
- 5) Identify whom to contact if there are further comments and questions about the material discussed in the program.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Each participant in the on-site Worker Environmental Awareness Program shall sign a statement declaring that the individual understands and shall abide by the guidelines set forth in the program materials. The person administering the program shall also sign each statement.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the Designated Biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and keep record of all persons who have completed the training to date. The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM for a period of at least six months after the start of commercial operation. During project operation, signed statements for active project operational personnel shall be kept on file for the duration of their employment and for six months after their termination.

USFWS Biological Opinion

BIO-6 The project owner must provide a copy of the USFWS Biological Opinion, or a letter from the USFWS stating the project does not require a Biological Opinion, to the Compliance Project Manager.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner must provide the CEC CPM with a copy of the Biological Opinion. If a Biological Opinion is not needed, then the project owner must provide the CEC CPM with a copy of the USFWS letter stating that conclusion. All terms and conditions of any USFWS decision will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

U. S. Army Corps of Engineers Section 404 Permit

BIO-7 The project owner shall provide a final copy of the Section 404 permit. The project owner will implement the terms and conditions contained in the permit.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner shall submit to the CPM a copy of the permit required to fill on-site wetlands. Permit terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

San Francisco Bay Regional Water Quality Control Board Certification

BIO-8 The project owner will acquire and implement the terms and conditions of a San Francisco Bay Regional Water Quality Control Board Section 401 State Clean Water Act certification.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner will provide the CPM with a copy of the final Regional Water Quality Control Board certification. The terms and conditions of the certification will be incorporated into the project's BRMIMP.

Storm Water Management Plan

where is it drawn to?

BIO-9 The project owner shall develop a RCEC Storm Water Management Plan in consultation with the U.S. Fish and Wildlife Service, East Bay Regional Parks District, Hayward Area Parks and Recreation District, and staff.

Verification: The project owner will submit to the CPM a Storm Water Management Plan at least 60 (sixty) days prior to the start of any site mobilization activities (See Soil and Water Resources, Condition of Certification **Soil & Water-3**). The final approved plan will also be contained in the RCEC Biological Resources Mitigation Implementation and Monitoring Plan.

Habitat Compensation

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BIO-10 The project owner shall provide suitable habitat compensation for the project's permanent and temporary habitat impacts.

Protocol:

Suitable habitat compensation must

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- 1) be agreed to by the USFWS, CDFG, USACE, and staff;
- 2) adequately compensate for the RCEC habitat impacts and
- 3) include a suitably large endowment to fund the perpetual care of the compensation habitat. The endowment can be calculated using the Center for Natural Lands Management Property Analysis Record computer data base tool.

Verification: Within one week of project certification, the project owner must provide written verification to the CPM that the required habitat compensation has been purchased and that the endowment is in place to fund perpetual compensation habitat management.

Facility Closure

BIO-11 The project owner will incorporate into the planned permanent or unexpected permanent closure plan measures that address the local biological resources. The biological resource facility closure measures will also be incorporated into the project BRMIMP.

Verification: At least 12 months (or a mutually agreed upon time) prior to the commencement of closure activities, the project owner shall address all biological resource-related issues associated with facility closure in a Biological Resources Element. The Biological Resources Element will be incorporated into the Facility Closure Plan, and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

Construction and Operational Noise Levels

BIO-12 The project owner will develop a construction and operational noise mitigation plan that addresses how noise impacts to state and federally listed nesting and breeding sensitive vertebrate species will be minimized during construction and for the life of the project.

Protocol: The plan will discuss how pile-driving and HRSG steam blow noise can be controlled, or not be allowed, during bird breeding or nesting from mid-March to mid-August or that other mitigation measures (e.g. muffler, sound walls) can be implemented to achieve the desired effect. Regarding operational noise, the noise mitigation plan will describe how the noise level will be reduced to no more than 65 dBA at the project's southern fence line where it borders adjacent open-space areas. The mitigation plan shall also discuss how the operational noise level will be maintained at the specified level and how the operational noise level will be monitored for the life of the project. Proposed strategy, all supporting materials and all assumptions must be included in the proposed construction and operational noise mitigation plan. The final plan must be developed in consultation with the USFWS, CDFG, EBRPD, and staff.

Verification: No later than 30 days prior to the start of any site mobilization activities, the project owner will provide to the CEC CPM with a copy of the final, agency approved construction and operational noise mitigation plan.

✓ **Bird Flight Diverters**

BIO-13 Bird flight diverters will be placed on all ground wires associated with the RCEC power plant.

Protocol: During construction of the RCEC transmission line, bird flight diverters will be installed to manufacturer's specification. The USFWS, CDFG, and staff will provide final approval of the bird flight diverter to be installed. Staff recommends that the Swan Flight Diverter be given careful consideration when making a decision about which diverter is to be installed.

Verification: No less than 7 days prior to energizing the new RCEC transmission line, the project owner will provide photographic verification to the CEC CPM that bird flight diverters have been installed to manufacturer's specifications. A discussion of how the bird flight diverters will be maintained during the life of the project will be included in the project's BRMIMP.

✓ **Sensitive Species Management Plan**

BIO-14 The project owner shall provide a final, approved sensitive species management plan.

Protocol: The sensitive species management plan shall:

- 1) Be approved by the USFWS, DFG, EBRPD and staff;
- 2) Identify how landscaping will deter perching, nesting/roosting of raptors and corvids;
- 3) Identify how the effectiveness of perch deterrents will be monitored and evaluated ;
- 4) Identify all measures to be implemented should monitoring indicate that perch deterrents are ineffective.

Verification: No later than 30 days prior to the start of any site mobilization activities, the project owner will provide to the CEC CPM a final approved version of the Sensitive Species Management Plan. The final Sensitive Species Management Plan shall be included in the RCEC BRMIMP.

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