Salton Sea Unit #6 Project (02-AFC-2)
Response to Issues Raised at the
June 4th Biological Resources Workshop

Issue Raised:

During the June 4, 2003, Biological Resources Workshop, CEC staff agreed to entertain submittal of a proposal by CURE to relocate the segment of the transmission route that passes closest to the Salton Sea, namely between mileposts L-2 and L-3. During the workshop, CEC staff also invited the Applicant to file its explanation of why a revised transmission line alignment would be infeasible and unnecessary. CEC staff indicated these filings should be made by June 18, 2003, so that they would not cause delay in preparation of the Final Staff Assessment.

Response:

The location of the proposed transmission line was determined based on an evaluation of many factors including biological, visual, cultural and practical considerations (such as the locations of existing geothermal power plants in the vicinity). A general objective was to place new transmission lines in corridors where transmission lines already exist in order to minimize the potential for avian collisions, the visual effects of the tower, the need for multiple maintenance roads, and the agricultural land area encumbered.

In this case, the Applicant proposed the new 161 kV transmission line to follow the path of an existing distribution line that runs parallel to Lack Road. In general, it is undesirable to place a new transmission line adjacent to, or between aquatic sites heavily used by waterfowl, and for this reason the transmission line does not continue along Lack Road north of Lindsey Road, parallel to the Salton Sea and the "Lack Road marsh." As proposed, the transmission line would proceed west along Lindsey Road, turning south on the east side of Lack Road. At its closest point (the corner of Lack and Lindsey), the proposed transmission line would be approximately 150 feet (diagonal) from the southeast corner of the Lack Road marsh.

Lack Road marsh is a 3-sided marsh formed by a diagonal barnacle bar to the west, levee of Lack Road to the east and levee of Lindsey Road to the south. A dense forest of tamarisk (as tall as 20 feet) has grown on the elevated portions of the barnacle bar, as well as the west side of the levee between Lack Road and the marsh. In the center of this triangle, Lack Road marsh is open water, sheltered from the wind and waves of the Salton Sea to the west. The marsh communicates with the Sea through an open channel along the south side. This relatively protected area, with abundant cover, attracts birds for roosting, forage and refuge during windy events. To the east and south of the marsh are open

fields planted in rotation to alfalfa, vegetables or hay. Some birds that use the marsh forage in terrestrial habitat to the east. During a site visit on May 14, 2003 the pond was used by cinnamon teal, eared grebes, a Caspian tern, American coot; and in the shallow areas black-necked stilts and avocets. Grackles were calling among the tamarisk. Among these birds, only stilts and avocets would be likely to forage regularly in the agricultural fields. Sonny Bono Salton Sea National Wildlife Refuge staff report that pelicans seasonally use this pond.

If birds flew directly east from the marsh toward agricultural fields, they would be north of the proposed transmission line. If they flew south from the marsh, they would need to cross an elevated levee (Lindsey Road), an agricultural field and the levee of Lack Road before encountering the transmission lines. In this case, it is likely birds would have gained altitude to clear both the levee and road, and presumably would then detect the transmission line. As noted above, the closest point of the transmission line is approximately 150 feet from Lack Marsh. Further south, the transmission line is more than 1,000 feet from the shoreline. This distance from the shore should reduce the potential for collisions from waterfowl flying from or to the water.

As noted above, the transmission would be installed on the east side of Lack Road, which itself is atop a levee approximately 10 feet above the adjacent agricultural fields. Because of this topographic difference, the poles (120 feet high) would be about 110 feet above the road, placing the highest conductor approximately 90 feet above ground. Birds flying above 110 feet would not be at risk of collision hazard.

According to APLIC 1994, species size and maneuverability are often cited as important characteristics in evaluating species' vulnerability to collision with overhead wires. Large heavy-bodied birds such as herons, cranes, and pelicans are more frequently reported than small high-maneuverable passerines (perching birds), which are rarely reported. Most surveys of collision mortality have focused on waterfowl and wading birds (geese, ducks, herons, pelicans). Therefore, the Applicant believes that passerines and smaller birds can be considered generally not at risk of collision.

APLIC also notes that birds during migration (except during inclement weather) generally fly at altitudes well above the power lines in order to minimize the energy cost of transport. Therefore, migrating birds are generally not considered to be at risk. Similarly APLIC notes that small to medium-size raptors are rarely vulnerable.

Rails are of particular concern. According to a study reported by Winning and Murray (1997) members of the Rallidae generally fly at 2-3 meters above ground and therefore are substantially not at risk.

Large waterfowl (ducks and ibis) and herons would be expected to forage in agricultural fields and might be vulnerable to collisions. Most of these birds would be moving between wetlands (roosting) and agricultural lands for occasional foraging. At the June 4, 2003, Biological Resources Workshop, the Imperial Irrigation District (IID) affirmed its commitment to installing bird flight diverters on the transmission segment in question. U.S. Fish and Wildlife Service (USFWS) documents previously docketed by the Intervenor reported that bird flight diverters installed by the IID appear to have been 100% effective in a location where pelican deaths had been reported previously.

Intervenor requested that the Applicant consider underground transmission lines. While underground transmission lines avoid potential for collisions, it is incorrect to assume that environmental impacts are reduced. Placing high voltage transmission lines underground is a complex process that requires more land and takes more time for repair and maintenance than overhead lines.

High voltage transmission lines give off substantial heat during operation, and an important function of the transmission line is the dissipation of the heat. When encased in an underground vault, a line's heat dissipation is greatly reduced. The line needs to be encased in a coolant material. Underground lines require extensive trenching and installation of vaults and duct banks. Digging a trench generally 16 feet wide and at least 8 feet deep to accommodate the line disrupts any habitat, wetlands or other natural resources in that corridor. Farming activities over such a line are limited by the potential need for repairs. Manholes to the depth of the pipeline and up to 14 feet long need to be installed approximately every 2,000 feet for cable pulling and splicing. Finally, underground lines do deteriorate and replacement is more time consuming, more difficult and more costly than repairs to overhead lines. Installation of underground lines is variously estimated to cost eight to 20 times more overhead lines.

Other alternative routes that followed paths outside the original corridors could be identified and evaluated. However, the proposed corridor has already been extensively surveyed and reviewed by the CEC, California Department of Fish and Game, Bureau of Land Management, and USFWS, none of which has requested the route be changed. To reconsider a new corridor at this point in the process would require extensive delay in the schedule while the applicant

developed new corridors, performed the necessary studies, including seasonally-limited bird surveys, and submitted the results to the various agencies for review and approval.

References:

APLIC. 1994. Mitigating Bird Collisions with Power Lines; The State of the Art in 1994.

Winning, G. & Murray, M. (1997) Flight behavior and collision mortality of waterbirds flying across electric transmission lines adjacent to the Shortland Wetlands, Newcastle, NSW. *Wetlands (Australia)* **17**(1):29-40