

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

March 8, 2012

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

Subject: Final Environmental Impact Statement for the Proposed Eagle Mountain Pumped Storage Hydroelectric Project, FERC Project No. 13123-002, Riverside County, California (CEQ #20120027)

Dear Ms. Bose:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act (CAA).

EPA reviewed the Draft Environmental Impact Statement (EIS) and provided comments to the Federal Energy Regulatory Commission on February 25, 2011. We rated the Draft EIS as *Environmental Objections – Insufficient Information* (EO-2), primarily due to significant direct and cumulative effects on groundwater quality and sensitive wildlife species. We asked for additional information related to unknown impacts regarding the level of acid rock drainage production, amount of reservoir seepage, and ability to adequately treat and control the acid drainage and seepage.

EPA appreciates the broader discussion of cumulative impacts of groundwater drawdown in the context of the solar projects in the area; however, the issues that we raised regarding effects on ground water quality and the unknown extent of acid rock drainage that would result from filling the two reservoirs remain unresolved. We encourage the Commission to continue to work with US Fish and Wildlife Service, Bureau of Land Management, the Park Service, and other stakeholders to respond to remaining concerns regarding sensitive and endangered species that would be impacted as a result of the project and its transmission line. We also recommend that appropriate mitigation be applied if disproportionately high and adverse human health or environmental impacts on the small rural communities of Desert Center and Lake Tamarisk are likely to result from the project. Please see our detailed comments, which are enclosed.

EPA appreciates the opportunity to provide input on this project. We are available to further discuss all recommendations provided. If you have any questions, please contact me at (415) 972-3843 or contact Stephanie Skophammer, the lead reviewer for this Project. Stephanie can be reached at (415) 972-3098 or [skophammer.stephanie@epa.gov](mailto:skophammer.stephanie@epa.gov).

Sincerely,

/s/

Enrique Manzanilla, Director  
Communities and Ecosystems Division

Enclosures: EPA's Detailed Comments

cc: James G. Kenna, Bureau of Land Management, California State Office  
Paul Murphey, State Water Resources Control Board  
Andrea Compton, Chief of Resources, Joshua Tree National Park  
Ray Brady, Energy Policy Team Lead, Bureau of Land Management  
Jody Fraser, United States Fish and Wildlife Service  
Becky Jones, California Department of Fish and Game  
Mike Monasmith, California Energy Commission  
Kenneth Hogan, Federal Energy Regulatory Commission

**U.S. EPA DETAILED COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE EAGLE MOUNTAIN PUMPED STORAGE HYDROELECTRIC PROJECT, RIVERSIDE COUNTY, CALIFORNIA, MARCH 12, 2012**

**Water Quality**

Because access to the project site has not been granted, there remains a lack of substantive data to determine if and how much acid rock drainage would occur or the amount of reservoir seepage. Eagle Crest Energy Company proposes to implement a Phase 1 Pre-Design Site Investigation Plan to address this issue prior to final project design and construction. According to the Final EIS, one hundred seventy million tons of iron ore reserves of economic recoverability remain at the mine site (p. 62). The ore has primary minerals of magnetite and pyrite and secondary minerals of hematite and goethite. The quantity of pyrite and other sulfide minerals is not well defined. Interaction between project water and mine pit materials could result in substantial amounts of acid production, especially since project operations would result in a well-mixed, oxygenated, and fluctuating water column.

We urge development of more definitive information on the amount of acid rock drainage, prior to the Commission's approval of the hydropower license. We continue to recommend that the pre-design investigation of the acid leached byproducts (e.g. , metals and sulfate) and non-acid byproducts (e.g. arsenic) that could be produced as a result of the project be conducted prior to completion of the NEPA process, and that the results be used to inform the decision of whether to approve or deny the project.

Studies cited in the Final EIS indicate fractures in bedrock could result in seepage that could raise groundwater levels under the lower reservoir and Metropolitan Water District's Colorado River Aqueduct. Seepage could also result in groundwater exit on the hillside south of the upper reservoir above the proposed Eagle Mountain landfill. Seepage could encounter the lining of the landfill in the long-term. The Final EIS estimates that there would be about 1,600 acre-feet per year (af/yr) of potential seepage (p. 88). The mitigations proposed to address this issue (SR-3 and SR-4) include monitoring, but it is unclear what specific action(s) would be conducted if this monitoring indicates seepage and contamination. This should be discussed, with appropriate commitments, in the ROD. We continue to recommend that robust monitoring occur for the life of the project and that an emergency response plan be developed to address any potential breaches or groundwater contamination.

**Groundwater Withdrawal**

We are concerned with the potential groundwater drawdown and cumulative impacts to the Chuckwalla Valley Groundwater Basin (Chuckwalla Basin) and the Pinto Basin associated with the construction of the proposed Project, in conjunction with the reasonably foreseeable projects in the vicinity. The Final EIS indicates that initial pumping to fill the reservoirs would exceed groundwater recharge by about 4,600 af/yr for 4 years. Pumping would then taper to 1,700 af/yr to replace water lost by evaporation (make-up water). Total groundwater use by the Project over the 50-yr license period would be about 109,620 af (p.96).

The Final EIS states that a drop in groundwater levels could impact neighboring wells, lower the water table, and adversely affect groundwater-dependent vegetation and woodlands. Given the hydrological connection to the Pinto Basin Aquifer, which underlies portions of Joshua Tree National Park, there is concern that Park resources or associated springs could also be adversely affected. The ROD should specify the mitigation measures that would be taken, and by whom, should the monitoring mitigation

proposed indicate groundwater resources in the basins have become overextended to the point that further curtailment is necessary due to the utilization of existing or pending water rights in the basin.

### **Energy Use and the Project Purpose and Need**

The Draft EIS stated that the Eagle Mountain Pumped Storage Project would provide hydroelectric generation during daytime peak hours to meet Southern California's power requirements, resource diversity, and capacity needs, and would generate 4,308 gigawatt-hours (GWh) annually, while consuming 5,744 GWh annually to pump water back up to upper reservoir. This information has been removed from the Final EIS, so it remains unclear how much energy the Eagle Mountain Pumped Storage project would use and provide to the system, although its capacity for storage would remain at 1,300 megawatts.

Although we understand that the project may be able to use renewable energy, the Commission states in the Final EIS that the project proponent “would not be able to choose where its electricity would originate” (p. 228). The North American Electric Reliability Corporation (NERC) forecasts that summer peak demands and annual energy requirements will grow at annual rates of 0.9 % and 1.2% through 2018. They project that capacity margins will *not* drop below target reserve levels during this period (p. 3). Numerous renewable energy generation projects (solar, wind, hydroelectric) are proposed for this region. Many of the proposed renewable energy projects would also provide peak hour generation for the Southern California region. While the Project proposes to utilize local renewable energy for pumping power, existing and proposed wind and solar generation may already be committed. The Final EIS should provide evidence of a guaranteed source of renewable energy (e.g., contractually binding agreement) for pumping and that the project would be replacing non-renewable-fueled peaking generation. We continue to recommend that the Project secure local renewable energy to help meet the renewable energy goals outlined for California.

### **Environmental Justice**

Although we understand that the Commission is not bound by Executive Order 12898 regarding Environmental Justice, we remain concerned about the lack of a robust environmental justice analysis in the document. The Final EIS states that the project proponent did not target the project area due to the economic status of the surrounding rural community (p. 253). We recognize that some environmental justice concerns, such as contamination or drawdown of domestic wells, are discussed in the document; however, the Final EIS does not appear to address the potential cumulative disproportionate impact of the project on the small rural communities of Desert Center and Lake Tamarisk. These communities are very small and have been adversely affected by the boom and bust local economy. It is not feasible to determine if there are potentially adverse disproportionate impacts, since there is no specific description of Desert Center or Lake Tamarisk demographics or income.

The ROD should provide appropriate mitigation if disproportionately high and adverse human health or environmental impacts on minority populations or low-income populations are likely to result from the proposed action and any alternatives.

### **Biological Resources**

According to the Final EIS, the Biological Opinion (BO) has not been completed (p. 7). The final

Biological Opinion will play an important role in informing the decision on which alternative to approve (including the route of the transmission line) and what commitments, terms, and conditions must accompany that approval. We recommend that the Commission coordinate with USFWS and include the BO in the ROD and that any additional mitigation measures needed to protect species from potential adverse effects of the proposed activities be listed within the ROD, accordingly. We also recommend the Commission ensure that current and consistent surveying, monitoring, and reporting protocols are applied to all translocation and protection efforts.

Project reservoirs would have estimated evaporation losses of 1,760 af/yr. To ensure that the concentration of total dissolved solids within the reservoir water remains at the same level as the source water, Eagle Crest would include a reverse osmosis desalination facility. Concentrated brine of about 270 af/yr would be treated in 6 evaporation ponds and 5 solidifying ponds (56 acres) constructed with clay or membrane liners and 8-foot-high berms. Salts would be removed from the ponds every 10 years.

The Final EIS does not describe the potential quality of the brine solution and potential risk of wildlife exposure to selenium, heavy metals, and salts. We continue to recommend development of an emergency response plan to address a potential breach in the pond berms or liners. We understand the design and materials would be inspected by the Commission's Division of Dam Safety and Inspections, but we remain concerned about the effects of the brine on wildlife, particularly birds and Nelson's Bighorn sheep. We continue to recommend that Eagle Crest consider funding a Nelson's Bighorn Sheep movement and migration study, in consultation with the National Park Service, to evaluate movement of the sheep through the Project site.

### **Cumulative Air Quality Analysis**

The Final EIS states that nitrogen oxide emissions (NO<sub>x</sub>) would be temporarily and cumulatively significant (over CEQA thresholds) during construction years 2013 & 2014. NO<sub>x</sub> is a precursor to the formation of ozone, which is the main component of urban smog. Ozone irritates the lungs, damages the respiratory system, and contributes to regional haze. Mitigation would include a two-year air monitoring study in partnership with the National Park Service to provide data to adjust the construction workload if exceedances of thresholds are observed.

Given the number of solar and transmission line projects proposed for the Chuckwalla Valley and the presence of the Joshua Tree National Park -- a designated Class I area protected under the federal Prevention of Significant Deterioration regulations -- EPA continues to be concerned about potential air quality impacts. The Commission concluded that construction of the solar projects could be excluded from the actions considered in the cumulative impacts analysis due to their locations and distances from the proposed project and that their construction is purely speculative (p. A-103). In consultation with the local air quality management agency, EPA continues to recommend that cumulative emissions data be used to develop an incremental construction schedule that will not result in any violations of local, State or Federal air quality regulations. EPA recommends coordinated construction with the nearby solar projects to ensure air quality impacts due to construction are limited and sufficiently staggered.