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Mr. Mike Monasmith
Project Manager
Siting, Transmission and Environmental Protection (STEP) Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, California 95814

Dear Mr. Monasmith:

This letter transmits the Bureau of Land Management (BLM) water-related concerns and recommended mitigation measures for consideration in the California Energy Commission's (CEC) analysis of the Hidden Hills Solar Electric Generating System (HHSEGS). These mitigation measures will minimize impacts to BLM water-dependent public trust resources in both Nevada and California.

The Nevada BLM is analyzing a right-of-way (ROW) application submitted by Valley Electric Association (Valley Electric) for a transmission line and a gas pipeline in Nevada, together called the Hidden Valley Electric Transmission Line (HVETL) Project, NVN-089669 that will, in part, provide grid connection and natural gas for the HHSEGS located on private land just over the California state border. The BLM's HVETL ROW application review process includes assessing the environmental impacts from the HVETL, along with impacts from actions closely connected to the HVETL. The HHSEGS is such a connected action.

Through preliminary assessments of the HVETL and the proposed HHSEGS solar project, the BLM understands that the solar project will require a supply of 140 acre-feet per year (AFY) to meet the HHSEGS's system design. The source of the water will be the Pahrump Valley groundwater basin. The BLM has concerns that pumping from this source of water, combined with cumulative impacts of other pumping, including potential pumping from other proposed renewable energy projects in this groundwater basin, may cause impacts to the Amargosa Wild and Scenic River (W&SR); mesquite bosques in Pahrump Valley, including the Stump Spring Area of Critical Environmental Concern (ACEC); and other surface vegetation that depends upon subsurface water provided by this source. Similar concerns were raised to the BLM through its initial scoping phase of the HVETL project analysis. As such, the BLM intends to address these water related issues within the environmental impact analysis for the HVETL project.

The Pahrump Valley groundwater basin is located primarily within the state of Nevada but includes a small portion within California. The HHSEGS project will pump its groundwater in the California portion of the basin which will likely draw from the groundwater basin largely located in Nevada. Due to this split-State basin location, there is not a singular controlling approach to manage this basin's resources. For instance, in California the State recognizes both overlying and appropriative rights to groundwater and does not require a water right for pumping groundwater. Conversely, the Nevada Division of Water Resource (NDWR) regulates the appropriation of both surface and ground water rights in Nevada and has determined the Pahrump Valley basin is over-appropriated for groundwater rights where appropriated rights equal 62,617 AFY and the perennial yield equals 12,000 AFY. These appropriation figures do not include groundwater pumped within California which suggests the rate of groundwater withdrawal is potentially much greater.

The HHSEGS and HVETL project areas are located within the Death Valley Regional Groundwater Flow System (DVRGFS), which is defined as a regional, deep carbonate-rock aquifer extending from Utah and Nevada into southern California. This deep aquifer is overlain by local, shallow basin-fill aquifers, such as the Pahrump Valley groundwater basin. Groundwater flow through the area is generally understood to flow to the southwest from the Spring Mountains located north of the project area. Connectivity between the regional carbonate-aquifer and the local basin-fill aquifers is not well defined. The area is highly faulted and limited hydrologic and geochemical data indicate that source waters for local discharge areas, specifically perennial spring flow in the Amargosa W&SR and Stump Spring ACEC, may include recharge areas both within and outside of the Pahrump Valley groundwater basin. Perennial flow within the Amargosa W&SR is wholly supported by groundwater which comes to the surface as seeps and springs. The source water for the Amargosa W&SR (shallow basin-fill or carbonate aquifers) is not well understood at this time. The local mesquite bosques, including Stump Spring ACEC, are located in both Nevada and California. These bosques are considered an important type of riparian habitat, getting their water from the shallow basin-fill aquifer. In 2006, the BLM developed a Conservation Management Strategy for Mesquite and Acacia Woodlands in Clark County, Nevada. This strategy identified the mesquite bosques located in the Pahrump Basin as a high priority area for conservation actions and identified the threats to future health and recruitment of the stands. One of the identified threats was water management and the associated conservation objective was to maintain groundwater at current or higher levels, above 35 feet below ground surface. Pumping associated with the HHSEGS may have some impact on flows in the Amargosa River and discharge to the local mesquite bosques including Stump Spring ACEC. The extent of the potential impact is not fully understood at this time.

Congress designated 26 miles of the Amargosa River, between Shoshone, California and the Dumont Dunes, as a Wild and Scenic River in the Omnibus Act of 2009. The BLM, as the applicable Federal land manager, is tasked with developing a management plan for the Amargosa W&SR that will protect the values for which the river was designated. Some of the "outstanding remarkable values" (ORV) associated with the Amargosa W&SR are identified in the pending management plan being developed by the BLM Barstow Field Office. All of these ORVs are directly water-dependent and include resources such as habitat and protected plant or animal species. The BLM, in cooperation with the United States Geological Survey (USGS) and others, has initiated a groundwater and water balance study along the Amargosa W&SR to determine

instream flows necessary to maintain these outstanding remarkable values. The study focuses on source water areas in Nevada and California, and on discharge areas along the designated wild and scenic reaches in California. The study started in August 2011 and is expected to be completed in 2013.

Until more is known about the local flow paths of this regional system and how drawing water from these groundwater sources will impact groundwater dependent resources, the BLM has identified mitigation, monitoring and protection measures that it will likely include and analyze as part of its assessment of the HVETL, and connected actions, project. The BLM suggests that CEC should include a similar analysis as part of its review of the HHSEGS permit application submitted to the CEC.

Mitigation options:

1) Through monitoring of a series of monitoring wells radiating out from the project area, define groundwater elevation triggers to local surface-dependent resources and the Amargosa W&SR the exceedance of which would require the HHSEGS to modify or stop pumping local groundwater and secure water through other means. This type of mitigation would be the most effective in ensuring local vegetative resources, including the mesquite bosques and the Amargosa W&SR, would not be impacted. It would eliminate all potential impacts to areas of concern as long as the triggers are adequate to avoid impacts before they result in loss to resources. Specifically:

    a. Monitoring of Stump Spring ACEC and other local mesquite bosques: (a) installation of new shallow monitoring wells between the project area and Stump Spring both inside and outside of the HHSEGS project area, (b) monitoring of both new and existing wells for the life of the solar project, (c) monitoring of mesquite stands to determine health and help identity stressors, (d) utilizing best available science and in consultation with local technical experts, identify groundwater elevation triggers and actions to take when triggers are met.

    b. Monitoring of pumping impacts to Amargosa W&SR: (a) installation of installation of new (shallow and deep) monitoring wells between the project area and Amargosa W&SR both inside and outside of the HHSEGS project area, (b) monitoring of both new and existing wells for the life of the solar project, (d) utilizing best available science and in consultation with local technical experts, identify groundwater elevation triggers and actions to take when triggers are met.

2) Purchase and retire groundwater water rights in order to off-set groundwater pumping by the project. Since the State of California does not appropriate groundwater this option would need to be done by acquiring water rights in Nevada. It does not prohibit future unregulated groundwater development in California. In order for this type of mitigation to be effective, the water rights to be acquired would need to be located near the project area, be senior in status and have been put to beneficial use frequently and recently. Most of the land near the project area is managed by the BLM; therefore, there are very few local water rights available for purchase. There are a few permitted rights approximately

2 miles away located on private land. These rights are senior in status but have been recently changed and are now in permitted status and have not been put to beneficial use since the 1980's. Acquiring these rights would not reduce current impacts but may reduce future risk to local resources.

The BLM does not consider the retirement of water rights alone to be an effective option since most of the pumping that is occurring in the Pahrump Valley in Nevada is located within the city limits of Pahrump, approximately 15 miles away from the HHSEGS project site. Although this may offset overall pumping within the basin, it will not eliminate localized impacts due to the HHSEGS pumping. Additionally, there may be concerns from local government officials with retiring water rights in Nevada for a project in California.

In addition to the above mitigation options, the BLM is recommending monitoring and protection measures that will contribute to the understanding of the groundwater flow system and allow for evaluating HHSEGS potential impacts to the Amargosa W&SR include the following:

Funding part of the Amargosa W&SR Study currently under contract with the USGS. The components of interest which could be funded to better understand potential impacts due to the project would include: (a) geologic mapping and geophysical surveys, (b) installation of monitoring wells, (c) data collection (discharge, water levels, and precipitation), and (d) potentiometric map development. In addition, the USGS would apply the existing USGS DVRGFS model to the project to evaluate changes in the regional groundwater flow system caused by the project.

The BLM appreciates having the opportunity to provide comments on the HHSEGS project. If you have any questions, please contact Sarah Peterson, Nevada State Lead for Soil, Water, Air & Riparian programs at 775-861-6516; Dr. Boris Poff, District Hydrologist for the Southern Nevada District office at 702-515-5154; Peter Godfrey, Hydrologist, California Desert District, at 951-697-5385; or Dr. Noel Ludwig, Hydrologist, California Desert District, at 951-697-5368.

Sincerely,

Amy Lueders FOR
Nevada State Director

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California State Director

cc:
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