CALIFORNIA ENERGY COMMISSION
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December 16, 2011

Mr. Matt Stucky
Abengoa Solar Inc.
235 Pine Street, Suite 1800
San Francisco, CA 94104

Dear Mr. Stucky:

ABENGOA MOJAVE SOLAR PROJECT CONSTRUCTION AND OPERATION WATER SUPPLY

Abener Teyma Mojave submitted a Construction Water Production Plan (Plan) on December 1, 2011, per the direction of Mr. Terrance O'Brien during our August 26, 2011 conference call. This direction was provided per the requirements of Condition of Certification **SOIL&WATER-4**. The Plan describes the timing for new production wells, proposed refurbishment and use of two existing water wells in Alpha West, and the use of a well in Beta East that currently supplies water to the Harper Lake marsh. The Plan also discusses abandonment of all existing wells on the project property.

Staff has continuing concerns about the Plan and the ability of the owner to achieve timely compliance. The Plan proposes to have two project production wells and two project backup wells operational by June 5, 2012 despite having previously agreed to have the production wells operational by February 29, 2012 (i.e., six months after the August 26, 2011 conference call). Also, during the August 26, 2011 conference call Mr. O'Brien reiterated that AMS was restricted in its use of only the Ryken well for construction water, where the plan now proposes to use two additional existing wells. Staff is also concerned that ongoing grading operations or a significant uptick in construction activity next year could inadvertently destroy and bury existing wells, making it difficult to properly implement the proposed well abandonment plan for all existing wells.

Construction Water Production Plan

Based on the direction provided during the conference call on August 26, the new production wells should be operational by February 29, 2012. As a transition between the start of construction on August 29, 2011 to February 29, 2012, the Ryken well (11N04W32A01) is allowed to be used as a water supply for construction activity. AMS has submitted a Plan that includes a schedule for installation of the project's water supply wells and abandonment of existing wells. The four project water supply wells must be installed and made operational in accordance with the requirements of **SOIL&WATER-4**. To comply with **SOIL&WATER-4**, the following are required in chronological order.

1. Submit a revised schedule for installing the four new project water supply wells and for retrofitting and for deepening the existing BLM well (11N04W33B; lat. 35.009783, long. -117.302407) designated to supply the wetlands with water.
2. Submit a well installation package and fees for each new project well and the BLM well (11N04W28Q; lat. 35.011816, long. -117.299142) to San Bernardino County for review and comment and the CPM for approval. Design and construction of the new project wells and retrofitting and deepening of the BLM well must ensure that there is no communication between the low quality perched water and the high quality regional aquifer (uQal) as a result of well installation.

The Plan schedule puts the AMS project on a course to be in violation of the February 29, 2012 date for cessation of the use of the Ryken well. The Plan should consider if two supply wells can be drilled now and the two backup wells drilled after February 2012. Also, the Plan needs to discuss how the water supply to the marsh will be maintained in compliance with Condition of Certification **BIO-20**, which requires retrofitting and deepening of the BLM well prior to the proper abandonment of the existing marsh water supply well in Beta East.

The proposed use of other existing wells for construction water is specifically not allowed because of concern the well may have been constructed allowing for communication between the low quality perched water and the high quality regional aquifer (uQal) as a result of well installation. The Plan indicates at least two of the existing wells proposed for temporary use during construction may have been constructed relatively recently. This suggests it is possible the wells could have been constructed using modern standards which would protect against cross-contamination. If the owner can provide evidence showing the wells proposed for temporary use will not result in cross-contamination, then staff would consider allowing the use of the wells on a temporary basis. If no evidence can be provided, then the wells must be abandoned in accordance with Condition of Certification **SOIL&WATER- 4**.

Well Abandonment

The Decision requires submission of a plan for the proper destruction of the Ryken well, the existing well in Beta East that supplies water to the wetlands, and all other qualifying wells on the AMS project property. Qualifying wells are those that allow communication between the perched water zone and the aquifer uQal. To identify qualifying wells, submit the following:

1. Submit a map, GPS coordinates, and list identifying all existing wells (functional and not functional) on the AMS project site.
2. Determine which wells, by their construction, are allowing for communication between the perched water and the aquifer uQal.
3. List and submit well construction diagrams for each well that needs to be destroyed.

4. Provide an outline showing how the existing wells in areas where construction and grading is occurring will be protected from improper destruction and abandonment.
5. Provide a schedule that identifies the abandonment date for the wells and the sequence of completion in relation to current grading activities.
6. If well construction diagrams are not available, then the well must be properly destroyed.
7. Submit a well destruction package and fees for each well to be destroyed to San Bernardino County for review and comment and the CPM for approval. Destruction of each well must ensure that there is no communication between the perched water and the aquifer uQal.

The Plan submitted is inadequate because it does not provide this level of detail. Of particular concern is that the Plan does not include a schedule for completion of well decommissioning in light of the current and planned construction activities.

Conclusions

The Supplement Staff Assessment and Commission Decision makes it abundantly clear that the Ryken well is leading to significant impacts to water resources due to its improper construction. The Commission Decision on page 320 stated:

> "Thus, we concur with Staff's recommendation that any replacement well used to supply water to the marsh be constructed or retrofitted to prevent low quality perched water from entering the well and upper aquifer. We further impose Condition of Certification **SOIL & WATER-4** on the project owner to ensure that Ryken well is properly abandoned and that new project wells are constructed in a manner that ensured that water quality impacts are mitigated to less than significant levels."

At no time during the licensing of the AMS project did the applicant provide evidence suggesting that there was no communication between the poor quality perched water and the higher quality aquifer (uQal) water. Furthermore, the first paragraph of Condition of Certification **SOIL&WATER-4** states:

> "The project shall not construct a well or extract and use groundwater until the CPM provides approval to construct and operate the well."

In addition to the significant water resource impacts, the poor water quality from the Ryken well could lead to significant worker safety impacts through dermal contact with the water from the Ryken well. For this reason also, conditions and restrictions have been placed on the use of groundwater from the Ryken well.

Continued operation of the Ryken well beyond February 29, 2012 may be viewed as violating the following laws, ordinance, regulations, and standards.

- California Well Standards (California Department of Water Resources Bulletin No. 74-81 and 74-90)/San Bernardino County Code.
- California Water Code section 13050.
- RWQCB Basin Plan Water Quality Objectives for arsenic, nitrate (as N), total dissolved solids, manganese, sulfate, and chloride.
- California Maximum Contaminant Levels for arsenic and nitrate (as N).
- The in-lieu Waste Discharge Requirements of the license issued for Abengoa Mojave Solar project by the Energy Commission.

We look forward to AMS providing a revised well installation schedule and a more detailed well abandonment plan. If you have any questions, please call Christopher Dennis (916) 654-4399 or Paul Marshall at (916) 654-4059.

Sincerely,

Dale Rundquist
Compliance Project Manager
Siting, Transmission & Environmental
Protection Division

cc: Dockets
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