February 26, 2008

Lance Shaw  
Compliance Project Manager  
02-AFC-4C  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814

RE:  REQUEST FOR STAFF APPROVAL OR, IN THE ALTERNATIVE, PETITION FOR AMENDMENT: WALNUT ENERGY CENTER AUTHORITY WALNUT ENERGY CENTER (02-AFC-4C) - REPLACEMENT OF BACKWASH TANK

Dear Mr. Shaw:

The Walnut Energy Center (WEC) was permitted with an 18,000 gallon, 12’ diameter by 20’ high backwash holding tank. The Walnut Energy Center Authority (WECA) would like to replace this tank with a 24,000 gallon, 12’ diameter by 30’ high tank. The backwash tank is part of the plant’s zero liquid discharge (ZLD) system. The larger sized tank is needed to make the ZLD system operate more effectively and to address changes to the system resulting from the plant’s use of recycled water.

The purpose of the backwash tank is to contain the backwash streams produced by the plant’s water purification systems which include the multi-media filter, the sodium zeolite softeners, the weak acid cation polisher, and the mixed bed demineralizers. The water flows through these systems to clean and remove particulates from the cooling tower blowdown. The particulates or backwash streams then flow to the backwash tank. The streams are held in the backwash tank until they can be processed through the plate clarifier where the particulates are separated from the water.

The current backwash tank volume was designed to handle the volume generated from one backwash sequence of the water purification systems. The backwash tank has to empty prior to the start of the next backwash sequence. As a result, the flow through the clarifier is stopped while the backwash tank refills. This impedes the operation of the clarifier which functions most effectively with a constant flow.
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This problem is exacerbated now that the WEC is operating on recycled water. With the recycled water, the majority of the contaminants in the wastewater discharge are smaller than one micron in size. These small particles require a stable and consistent flow through the clarifier in order to precipitate out into the sludge blanket located at the bottom of the clarifier. The larger backwash tank will allow a consistent flow out of the backwash tank and through the clarifier, improving the clarifier's performance.

Figures 1 and 2 represent views of the existing backwash tank in relation to the other WEC tanks. The backwash tank is outlined in red. The new 30 foot tall backwash tank will be comparable in size to the other plant tanks, which range in height from approximately 30 to 40 feet. The new tank would also be painted the same color and finish as the other tanks on the WEC site. Given the similarity in size, color, and finish the new 30 foot tank will not change the visual profile of the WEC plant.

The replacement of the existing backwash tank with a larger tank does not affect any of the Conditions of Certification for the Walnut Energy Center. Further, replacement of the existing tank to optimize the ZLD system does not change the project description since the size of the tank was developed in detailed design, post-certification, as is the normal and expected process for the Commission. Based on these facts, the District does not believe that an amendment is required and that the Staff has the discretion to signal its agreement with this project enhancement via letter or email response.

However, if the Staff believes that an amendment is necessary or if the Staff believes that an amendment is prudent, the District does not object to the Staff's preferred method of processing this improvement to the ZLD system. The information presented herein is consistent with the requirements of Section 1769 of the California Energy Commission regulations. The information presented herein provides a complete description of the proposed modifications, as required by Section 1769(a)(1)(A). The Amendment also includes a discussion of the necessity of the proposed changes, per Section 1769(a)(1)(B). The Amendment is based on information that was not known during the time of the certification, and it does not undermine the assumptions, rationale, findings, or other bases for the final decision, per Sections 1769(a)(1)(C) and 1769(a)(1)(D). As discussed above, the modification does not have the potential to create any significant impacts on the environment and makes the project consistent with all applicable LORS, per Sections 1769(a)(1)(E) and 1769(a)(1)(F). The proposed amendment will not adversely affect the public, per Section 1769(a)(1)(G). In addition the proposed modification will have no adverse effects on nearby property owners, per Section 1769(a)(1)(H) and 1769(a)(1)(I).

Operating a ZLD plant on recycled water has proven to be quite a challenge because the characteristics of the wastewater stream cannot be fully known until the water is used. ZLD systems are designed based on anticipated wastewater characteristics and typically require
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modification after plant operation commences. The need to replace the backwash tank with a larger tank is an example of this challenge.

Should you have questions, please do not hesitate to contact Susan Strachan at 530-757-7038 or me at 916-447-2166.

Sincerely,

Jeff Harris
Ellison, Schneider, and Harris

Attachment
Figure 1 WEC Aerial of Tank Area

Figure 2 Backwash Tank