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June 15, 2011

Cindy Kyle-Fischer, P.E.
URS Corporation
8181 E. Tufts Avenue
Denver, CO 80237**DOCKET****09-AFC-1**

DATE	JUN 15 2011
RECD.	JUN 21 2011

Re: Watson Cogeneration Steam and Electric Reliability Project (09-AFC-1)

Dear Ms. Kyle Fisher:

In response to the revised Section 5.5 Water Resources that was submitted to the Dockets Unit on March 28, 2011, Energy Commission water staff have the attached questions. We would appreciate you responding to these questions and docketing your response. As staff are currently completing their Final Staff Assessment sections, I would appreciate if you would expedite your responses.

Sincerely,

Alan H. Solomon
Project Manager

Technical Area: Soils and Water Resources
Authors: Mark Lindley, P.E.

BACKGROUND

Table 5.5-4, Water Balance Flow Values, provided in the updated AFC section provided in the March 28, 2011 workshop response water balance reflects 2,724 acre-feet per year (AFY) of total water supply for the fifth train, including 2,285 AFY of treated water for fogger supply and boiler feed water and 439 AFY for cooling tower makeup. The updated water balance reflecting a freshwater supply (following treatment) is similar to the water balance presented in the original AFC reflecting a reclaimed water supply with the primary difference being the use of second pass reverse osmosis treatment of reclaimed water. In Data Response 48, the applicant indicated that condensate return from the Steam Turbine Generators and BP Refinery would reduce the total water use for the project. In revised Table 5.5-9 in the updated AFC section provided in the March 28, 2011 workshop response, the applicant indicates that the fifth train would utilize 1,718 AFY of reclaimed water, however, it is not clear if this reflects reclaimed water before or after second pass reverse osmosis treatment.

Staff would like to clarify the information provided in the updated and original AFC sections to gain a better understanding of the volumes of water to be utilized by the fifth train under the freshwater and reclaimed water supply scenarios and specifically how condensate returns are accounted for in the water balances.

DATA REQUESTS

1. Please provide updated versions of Table 5.5-4 and Figure 5.5-1, Water Balance Flow Values and Diagram included in the updated AFC section provided in the March 28, 2011 workshop response that reflect the condensate return in the water balance for the fifth train. Please breakdown how much of the 2,286 AFY of treated water and 439 AFY of cooling tower make up, or the revised values, are comprised of freshwater and condensate return.
2. Please clarify how much reclaimed water used would be nitrified reclaimed water and reverse osmosis treated reclaimed water. Also, clarify if the volumes of reclaimed water used reflect first pass reverse osmosis treatment of reclaimed water delivered by the West Basin Municipal Water District (WBMWD) or after second pass reverse osmosis treatment onsite.
3. Please provide updated versions of Table 5.5-4 and Figure 5.5-1, Water Balance Flow Values and Diagram that reflect the condensate return in the water balance for the fifth train for the future reclaimed water scenario. Please breakdown how much the 2,855 AFY of first pass reverse osmosis treated reclaimed water and 160 AFY of nitrified reclaimed water cooling, or the revised values, would be reduced by condensate return.

BACKGROUND

In the March 28, 2011 workshop response, the applicant indicated that the baseline treated water use at the existing Watson Cogeneration Facility is 4,609 AFY, based on an average over the past 11 years. This baseline water use is being proposed by the applicant as a water use cap over the fifth train in conjunction the existing four Watson Cogen trains. The water used is following treatment of municipal water and groundwater at BP Refinery. Any increase in water use at the five trains combined would be limited to that derived from reclaimed water. The majority of reclaimed water supplied by WBMWD would be provided as first pass reverse osmosis with a significantly smaller volume of nitrified water. As compared to the freshwater blend of municipal water and groundwater, the first pass reverse osmosis water treated reclaimed water would be of much higher quality than the existing freshwater supplies (hardness, total cations, and conductivity reduced by more than 99.9 percent) and, as a result, will require significantly less onsite treatment for use in the fifth train.

Staff needs additional information related to raw water supply and treatment required to provide the 4,609 AFY of treated water supply at the existing Watson facility in order to compare the existing freshwater supply requirements with the requirements for reclaimed water treated with first pass reverse osmosis. This information is required by the Energy Commission staff in order to make findings about the BP Watson facility's water use and baseline environmental conditions that are a part of staff's assessment of the application for certification.

DATA REQUESTS

4. Please provide a table of the annual volume of water supplied to the project's water purveyor, the BP Refinery, to produce the water used by the project. Please quantify, at a minimum, water from the following three sources over the last five years: (1) groundwater from wells located at the BP Carson Refinery; (2) recycled water supplied by the West Basin or other reclaimed water providers; and (3) municipal water supplied by the WBMWD.
5. Please provide the efficiency of water treatment processes utilized to provide the 4,609 AFY of treated freshwater to the Watson facility (i.e., how much raw freshwater (municipal and groundwater) is required to generate the 4,609 AFY of treated freshwater to supply the Watson facility).
6. Please provide an estimate of the operation and maintenance costs for first pass reverse osmosis treatment of raw freshwater (municipal and groundwater) to generate freshwater supply of similar quality to the first pass reverse osmosis treated reclaimed water that would be supplied by WBMWD for the fifth train.
7. Please describe how water use will be accounted for, measured, and reported for the combined five trains to ensure that water use from non-reclaimed sources does not exceed the cap.

BACKGROUND

The West Basin Memorandum of Understanding (MOU) attached to the January 14, 2009, BP West Coast Products Will Serve letter states that the West Basin Municipal Water District has been asked by the BP Carson Refinery to prepare for possibly serving recycled water to the refinery. The MOU also states that the BP Carson Refinery has not yet decided to proceed with the recycled water delivery project.

DATA REQUESTS

8. Please provide an account of the status of the effort to provide recycled water to the BP Carson Refinery, the Watson Cogeneration Facility, and ultimately, the project. Please provide a detailed accounting of the negotiations over the past two and a half years and the primary issues that are impeding an agreement and the implementation of the reclaimed water supply project for the Watson facility.
9. Please provide any studies done by the Watson facility, the Watson facility's water purveyor, the BP Carson Refinery, and/or the WBMWD that evaluate the economic and technical feasibility of the Watson facility increasing its use of reclaimed water from West Basin or other reclaimed water providers.

BACKGROUND

The West Coast Groundwater Basin currently operates a groundwater injection program to help address sea water intrusion impacts related to groundwater pumping within the basin. About 44,400 AFY of groundwater is withdrawn from the basin and 23,900 AFY is injected to address sea water intrusion. The Watson facility's average use of approximately 1,534 AFY of groundwater is about 3.5 percent of the average total groundwater withdrawn from the basin. The proximity of the project's groundwater wells to the Dominguez Gap Barrier Project indicate that the Watson Cogeneration Facility contribution to the sea water intrusion impacts in the basin may be significantly more than its incremental contribution to groundwater pumping in the basin. Energy Commission staff has previously requested information related to historical groundwater pumping, water levels, and water quality, however, this information was not included in the most recent submittal from the Watson facility. Energy Commission staff needs additional information related to groundwater pumping to supply over one third of the Watson facility's water supply to help analyze its contribution to existing sea water intrusion impacts and the required mitigation through the West Coast Groundwater Basin's groundwater recharge programs. This information is required by the Energy Commission staff in order to make findings about the BP Watson facility's water use and baseline environmental conditions that are a part of staff's assessment of the application for certification.

DATA REQUESTS

10. Please provide historical data on groundwater pumping volumes for wells that supply groundwater to the existing Watson facility. Provide detailed annual data

from the past 10 years and historical data since the Energy Commission licensed the Watson facility in 1986.

11. Please provide groundwater level data collected in for groundwater supply wells and monitoring wells surrounding the pumping wells that provide groundwater to the existing Watson facility. Provide detailed annual data from the past 10 years and historical data since the Energy Commission licensed the Watson facility in 1986.
12. Please provide water quality data for the groundwater supply wells and monitoring wells surrounding the pumping wells that provide groundwater to the existing Watson facility. Provide detailed annual data from the past 10 years and historical data since the Energy Commission licensed the Watson facility in 1986.

BACKGROUND

Energy Commission Staff learned from the Regional Water Quality Control Board at the January 2011 Preliminary Staff Assessment Workshop that the groundwater below the project site is significantly impacted by hydrocarbons including up to 14 feet of non-aqueous liquid phase petroleum hydrocarbons on the groundwater surface above the shallow water table. However, based on the West Coast Groundwater Basin pumping records, groundwater was not pumped at the site as part of a program to address the existing hydrocarbon impacts. Impacted shallow groundwater could help augment the project's water supply. A groundwater pumping and treatment program could offer dual benefits related to treating existing groundwater impacts at the Watson site while augmenting the project's water supply and limiting the use of higher quality, imported freshwater that is in limited supply. Energy Commission staff needs additional information to assess the existing groundwater impacts at the project site, the adequacy of existing cleanup programs, and the suitability of shallow impacted groundwater to augment the water supply for the proposed expansion of the Watson plant.

DATA REQUESTS

13. Please provide detailed data on the existing soil and groundwater contamination at the Watson site. Sample locations, depths, contaminants, and levels of contamination for both soil and groundwater at the Watson site should be provided. Provide detailed annual data from the past 10 years and historical data since the Energy Commission licensed the Watson facility in 1986.
14. Please provide a detailed description of plans to remediate existing soil and groundwater contamination at the Watson site including the area for the proposed fifth train. Please describe how construction of the proposed fifth train affect plans to cleanup and remediate existing contamination?
15. Please discuss in detail the levels of groundwater contamination at the Watson site, and how shallow contaminated groundwater could be pumped and treated to be utilized to augment water supply for the project.