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STATE OF CALIFORNIA

Energy Resources Conservation
And Development Commission

DOCKET
09-AFC-4
DATE
RECD. Mar 16 2011

In the Matter of:

Application for Certification
for the Oakley Generating Station

Docket No. 09-AFC-4

OAKLEY GENERATING STATION
SOIL & WATER STAFF REBUTTAL
Mark Lindley, P.E. and Paul Marshall, CHG, CEG

Summary of Rebuttal Testimony

On the whole, Energy Commission staff and OGS are in agreement on much of the analysis, conclusions, and Conditions of Certification in the Soil and Water Resources Section of the Final Staff Assessment. However, in opening testimony, OGS has argued two points that do not reflect the conclusions of Energy Commission staff's analysis:

- OGS has implied that Energy Commission staff concluded that OGS would result in significant impacts to Water Resources. To the contrary, Energy Commission staff only concluded that OGS may result in impacts to other users of the water supply if a number of reasonably foreseeable situations occur (i.e. drought and/or changes in water rights as the 2009 Delta Reform Act of 2009 is implemented).

- OGS has implied that Energy Commission staff concluded that LORS require that OGS commit to using recycled water now. To the contrary, Energy Commission staff concluded that construction of a new wastewater treatment plant close to the OGS site (to be completed in October 2011) would make conversion to recycled water in the future economically feasible. Energy Commission staff have recommended that OGS be required to convert to recycled water once it is deemed economically feasible, or alternatively, to implement a water conservation offset program.

In addition, OGS has requested that the Energy Commission delete Condition of Certification SOIL&WATER-6 which includes requirements to monitor the hydrology and water quality in Mitigation Wetland E to identify any adverse impacts and to help guide adaptive management measures.

Energy Commission staff offers the following rebuttal to the three main points in OGS's opening testimony.

1. IMPACTS TO WATER RESOURCES

In opening testimony, OGS implies that staff has determined that the proposed water supply - potable, domestic freshwater primarily sourced from the Sacramento-San Joaquin Delta, would result in significant impacts to water resources. In the analysis presented in the Final Staff Assessment, Energy Commission staff concluded that OGS's proposed freshwater supply from the Delta may result in water resource impacts to other users or the ecology of the Delta.

Energy Commission staff looked at OGS's proposed water supply – up to 250 acre-feet per year of potable, domestic water derived from the Sacramento-San Joaquin Delta. This proposed water supply would result in an increase in freshwater diversions from the Sacramento-San Joaquin Delta as compared to current rates.

Energy Commission staff examined the potential for impacts associated with OGS's proposed increase in freshwater diversions against the significant ecological crisis in the Sacramento-San Joaquin Delta and the possible outcomes of the Delta Reform Act of 2009 which is intended to address collapse of the Bay-Delta ecosystem. State Water Board Resolution 2010-0039, one of the first steps in the Delta Reform process, determined that current levels of diversions from the Sacramento-San Joaquin Delta are not sustainable and that diversions will need to be cut by about 65 percent during drought years to protect the ecology of the Delta. The scientific conclusions documented in this resolution are meant to inform the development of the Delta Plan which will identify the policies and actions that must be implemented to improve water system reliability and protect the Delta ecosystem.

While the Delta Plan is still in progress, the ultimate outcome of the Delta Reform Act of 2009 is uncertain. However, the requirements formulated in the Delta Plan will go into effect around the time that OGS begins operation. Thus, Energy Commission staff can only speculate as to the final formulation of the Delta Plan based primarily upon the indications provided by the State Water Board in Resolution 2010-0039 and in the new Recycled Water Policy adopted in Resolution 2009-0011. Energy Commission staff sees the following potential scenarios arising as the Delta Plan takes effect:

Based on the conclusions included in Resolution 2010-0039, freshwater diversions from the Delta will be significantly reduced particularly during drought years. This scenario would result in the increased and more frequent allocation cuts discussed in the Final Staff Assessment.

Based on the provisions included in Resolution 2009-0011, Energy Commission staff concurs with OGS that water conservation measures including implementation of recycled water programs and water conservation programs will be required to help reduce freshwater diversions from the Delta.

The Delta Plan, in an attempt to balance the competing water supply requirements for

agricultural, municipal, and industrial uses with the ecological requirements for the Bay-Delta ecosystem, will not implement adequate limits on freshwater diversions and sufficient water conservation measures to fully address the ongoing ecological crisis in the Delta. In this scenario, increased freshwater diversions from the Delta as proposed for OGS would incrementally contribute to the already significant collapse of the Bay-Delta ecosystem.

Energy Commission staff cannot conclude with certainty how the Delta Plan will balance these potential scenarios so it is difficult to quantify potential impacts to water supply associated with OGS while the Delta Reform Act of 2009 is playing out. Therefore, staff has not concluded there will be any known significant impacts and has not recommended any mitigation for impacts that may be believed to be speculative. Staff's recommended conditions of certification are based on conformance with applicable LORS which is further addressed below.

There are a number of points included in OGS's opening testimony related to water supply impacts that are incorrect:

- Recycled water will be available when the project commences operation and treatment technologies are available to OGS to meet local wastewater discharge standards.

- The water use projections included in Diablo Water District's (DWD) 2005 Urban Water Management Plan were based on growth projections prior to the economic recession and housing bust that began in 2008. In the Final Staff Assessment, the effects of the severe economic recession were taken into account in Energy Commission Staff's estimates of OGS's impact on DWD's total water supply.

- Based on a conversation with Michael Yeraka (General Manager of DWD), DWD's 2010 water delivery (5,400 acre-feet) was only marginally increased over the 2004 delivery (5,250 acre-feet). Thus, OGS's projected water supply would increase DWD's total water demand by about 4.6 percent based on the current water delivery rates. Therefore, the analysis presented in the Final Staff Assessment was correct.

- Energy Commission staff's analysis of the impact of OGS's added water demand within a 2009 drought scenario resulting in a 20 percent cut in freshwater allocations was based on an assumption that DWD historic water demand reflected pre-OGS levels. Assuming a similar 20 percent allocation cut in a 2009 drought scenario after OGS has been in operation resulting in an increase in DWD's baseline water demand, total water demand by other users within DWD would need to be cut by an additional 50 acre-feet beyond the levels required prior to operation of OGS. 50 acre-feet is enough water to supply 100 to 200 households.

Energy Commission staff concurs with OGS that DWD has been fortunate to be able to

address most of the historic water supply allocation cuts primarily through water conservation efforts. Energy Commission staff has taken into consideration these previous water conservation efforts, and has provided an alternative for implementation of a water conservation offset program in Condition of Certification SOIL&WATER-9 to help DWD fund additional water conservation measures in-lieu of conversion to recycled water.

2. CONVERSION TO RECYCLED WATER

In opening testimony, OGS has intimated that Energy Commission staff has required OGS to commit to using recycled water "now." This is incorrect. In Conditions of Certification SOIL&WATER-4 and -8, Energy Commission staff is proposing a two step process to require OGS to convert to recycled water once the Energy Commission has determined that recycled water is economically feasible. Condition of Certification SOIL&WATER-8, requires OGS to develop an economic feasibility assessment for the use of recycled water within 18 months of license and to update the assessment biennially thereafter until recycled water is deemed feasible. Once feasible, OGS would be required to submit a project amendment and convert to recycled water within two years of Energy Commission approval of the project amendment.

The applicant indicates staff has repeatedly used Water Code section 13550 in conjunction with the State Constitution and Energy Commission Water Policy as a basis for requiring alternative water supplies or dry cooling for LORS compliance. Staff concurs this is true and acknowledges in the FSA that based on this analysis, the applicant is in compliance with these LORS because of the project use of dry cooling. Staff is also pointing out, however, that Water Code section 13550 and more recently State Water Resources Control Board Recycled Water Policy (Resolution 2009-0011) require the use of recycled water for all industrial uses.

In Resolution 2009-0011, the State Water Board has adopted a new recycled water policy. The State's new recycled water policy is intended to help address California's unprecedented water crisis evidenced by the collapse of the Bay-Delta ecosystem, climate change, continuing population growth and the severe drought on the Colorado River. The State Water Board is strongly encouraging local and regional water agencies to emphasize water recycling and water conservation. The State Water Board has set goals to:

- Increase the use of recycled water by at least one million acre-feet per year (afy) by 2020 and at least two million afy by 2030.
- Increase the amount of water conserved in urban and industrial uses by at least 20 percent by 2020.
- Substitute as much recycled water for potable water as possible by 2030.

Staff is correctly applying California Water Code Section 13550, contrary to the assertions of the applicant. Section 13550 deems the use of potable, domestic water for industrial purposes to be a waste and an unreasonable use of water if recycled water is

available, provided it is of adequate quality, available at a comparable cost, would not be detrimental to public health, and would not affect downstream water rights or water quality. The Water Code does not indicate that conversion of an industrial use from potable, domestic water to recycled water be determined at one snapshot in time. Rather this law indicates the industrial uses shall convert to recycled water once conditions laid out in the code are met. Thus, consistent with this code, Energy Commission Staff is recommending that the economic feasibility of recycled water use be examined biennially so that the conversion to recycled water can be implemented as soon as possible after it is deemed economically feasible.

Ironhouse Sanitary District (ISD) is constructing a new, Title 22 wastewater treatment plant only 2.5 miles from the OGS site that is scheduled for completion in October 2011. With this new state-of-the-art facility coming online before OGS begins operation, it would appear that recycled water will be available, technologically feasible, and at a cost comparable to that of OGS's proposed potable, domestic water supply. OGS has failed to demonstrate in their testimony that this recycled water supply is not and will not be economically feasible during the 30-year lifespan for the proposed project.

OGS has not provided any substantive arguments or reasoning demonstrating how developing an economic feasibility assessment for recycled water and conversion to recycled water once it is deemed economically feasible fails to meet the spirit of the State Water Board's Resolution 2009-0011 or CA Water Code Section 13550. Contrary to OGS's position, the requirements laid out in the California Water Code do not indicate that recycled water is only required for industrial facilities if the infrastructure is within ½ mile of a given industrial user.

OGS's proposed Condition would require ISD to accept high TDS wastewater from OGS that may not meet the local waste water discharge requirements. This particular requirement rules out the possibility that there is a feasible post treatment method or alternative disposal scenario where the conversion to recycled water will be economical in the near future.

OGS's proposed condition also requires that ISD develop all infrastructure for recycled water delivery, wastewater discharge and treatment while charging rates less than that of domestic, potable water. By contrast, CA Water Code requires industrial uses to convert to recycled water at rates that are "comparable" to that of domestic, potable water.

In addition, OGS's proposed Condition of Certification would have the Energy Commission place numerous requirements on ISD, a local, not-for-profit sanitary district that is not under the Energy Commission's jurisdiction, before OGS would convert to recycled water. This approach is unduly restrictive to ISD. Based on OGS's proposed condition, if ISD has difficulty in meeting any one of the seven proposed requirements, OGS would not be required to convert to a recycled water supply even after it is demonstrated to be technologically and economically feasible. Staff believes the applicant's proposed condition of certification is so restrictive that OGS would never be required to develop a recycled water supply. OGS's proposed condition is contrary to the

spirit and intent of the State's Policies and CA Water Code.

Pursuant to the requirements of SWRCB Resolution 2009-0011 to increase water conserved in urban and industrial uses, Energy Commission Staff has offered OGS an alternative to the recurring requirement to examine feasibility of recycled water. Condition of Certification SOIL&WATER-9 allows OGS to implement a water conservation offset program by funding local water conservation efforts. This program would help Diablo Water District and Contra Costa Water District to meet and possibly exceed the mandated 20 percent reduction in urban and industrial water use by 2020. Under Condition of Certification SOIL&WATER-9, implementation of a water conservation program could be suspended if OGS converts to recycled water at some point in the future.

3. CONDITION OF CERTIFICATION SOIL&WATER-6

Implementation of the requirements included in Condition of Certification Soil&Water-6 are critical to identify any adverse impacts to the hydrologic function and water quality in Mitigation Wetland E and to guide adaptive management actions should they be required. In opening testimony, OGS indicates that Mitigation Wetland E functions poorly as a wetland because it is not actively managed by a non-governmental organization or state or local government. However, OGS has failed to provide any factual evidence that Wetland E functions poorly as a wetland. The fact that the wetland is not actively managed does not demonstrate that the wetland functions poorly. The wetland supports near-perennially ponded wetland habitat throughout the year. There has only been one observation of the wetland pool dry during the planning for OGS in October of 2010, which followed two significant drought years and one average rainfall season. In the east Contra Costa County's Mediterranean climate, freshwater wetlands often go dry by the fall following several months with limited rainfall and high evaporation. There is no evidence that the wetland currently functions poorly from a hydrologic or water quality perspective.

OGS began working with California Department of Fish and Game (CDFG) in November 2009, to develop a Wetland E Management Plan that was finalized in June 2010. In the OGS's Wetland E Management Plan, OGS indicates that the proposed stormwater management system was designed so that:

> "(1) the quality of stormwater draining the wetland is not negatively affected, and (2) the OGS will not adversely alter the flow of stormwater into the wetland."

Further, OGS's Wetland E Management Plan identifies the following performance criterion related to wetland hydrology:

> "No significant change in the duration or extent of wetland ponding compared to pre-project conditions."

To demonstrate compliance with the above performance criterion, OGS's Wetland E

Management Plan indicates that:

> "The hydrology of the preserve will be monitored pre- and post-construction to ensure that watershed yield is sufficient to maintain wetland conditions in the preserve."

In opening testimony, OGS indicates that they installed equipment in November 2010 to begin pre-construction hydrology monitoring and will have collected only one season of data prior to construction. If the 2010/2011 water year turns out to be atypical, OGS is concerned that comparison of post-construction data to only one year of pre-construction monitoring data could limit determinations of adverse impacts. It is not clear why OGS did not begin monitoring of the wetland earlier in the planning process, as OGS originally met with CDFG in November 2009 and could have commenced monitoring at least one year earlier.

Condition of Certification SOIL&WATER-6 requires the applicant to monitor water levels (i.e. hydrology) in the wetland and water quality within the wetland to identify any adverse impacts. This condition requires OGS to honor its agreement with CDFG memorialized in OGS's Wetland E Management Plan. The water level monitoring to identify an adverse impact to the duration or extent of ponding in Wetland E is a performance criterion explicitly identified by OGS. The water quality monitoring reflects the sampling and analyses requirements that the Regional Water Quality Control Board places on electrical generating facilities and OGS commitment to implement stormwater management measures design so that "the quality of stormwater draining the wetland is not negatively affected."

Energy Commission Staff has placed the requirements for monitoring of water levels and water quality within the Soil & Water Conditions of Certification because soil and water staff are most qualified to develop the requirements, review water level and water quality data, and to review adaptive management measures that would be required if adverse hydrologic or water quality impacts are identified.

Condition of Certification SOIL&WATER-6 is critical to protect the hydrologic function and water quality in Wetland E. OGS has failed to provide any reasonable arguments in their opening testimony for eliminating hydrologic or water quality monitoring.