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Arnold Schwarzenegger
Governor

January 20, 2010

Ms. Melissa Jones
Executive Director
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

DOCKET	
09-AFC-5	
DATE	JAN 20 2010
RECD.	FEB 04 2010

Dear Ms. Jones:

STATE POLICIES FOR WATER QUALITY CONTROL AND THEIR APPLICABILITY TO POWER PLANT LICENSING

Thank you for your letter of November 23, 2009, in which you seek the State Water Resources Control Board's (State Water Board) assistance with applications for renewable energy projects currently pending before the California Energy Commission (Commission). As these projects would develop new sources of renewable energy and qualify for federal financial assistance, the Governor's Office and the Commission have placed a high priority on their timely review. To that end, I will ensure that State Water Board management staff is available to consult with Commission staff on water supply issues for these projects as needed.

State Water Board management staff will also coordinate with the management staff at the affected regional water quality control boards (regional water boards) on water quality issues to help ensure that the affected regional water boards continue to timely process the applicants' reports of waste discharge. In addition, my staff is available to discuss other methods for streamlining the Commission's review of these projects, including ensuring consistent approaches for regional water boards' adoption of waste discharge requirements, assessing appropriate waste discharge fees for regional water board oversight activities, and coordinating monitoring, inspection, and enforcement activities.

You have asked whether State Water Board policies support the use of supply water with a total dissolved solids (TDS) range of 1,000 to 3,000 mg/l for these projects, and, if so, which factors should be considered by the Commission in determining whether the use of such waters should be allowed for each project. State policy for water quality control does allow, under some circumstances, the use of supply water with TDS ranging from 1,000 to 3,000 mg/l to supply renewable energy projects. As discussed in greater detail below, the State Water Board's policies and state law identify multiple factors that should be considered when evaluating alternate sources of supply water for these projects.

Your questions relate to the interaction between certain provisions of State Water Board Resolution 75-58 ("Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling") and State Water Board Resolution 88-63 ("Sources of Drinking

Water"). As official state policies for water quality control, State Water Board Resolutions 75-58 and 88-63 are binding on all state agencies unless the Legislature provides otherwise. (Wat. Code, § 13146.)

When it adopted State Water Board Resolution 75-58 in 1975, the State Water Board recognized that new power plants were being considered for non-coastal sites, and expressed a concern about the limited availability of inland waters for powerplant cooling. The board stated that Resolution 75-58's purpose is to "provide consistent statewide water quality principles and guidance for adoption of waste discharge requirements, and implementation actions for powerplants which depend upon inland waters for cooling." (State Water Board Resolution 75-58, p.1.) Further, the board anticipated that the policy "should be particularly useful in guiding planning of new power generating facilities so as to protect beneficial uses of the State's water resources and to keep the consumptive use of freshwater for powerplant cooling to that minimally essential for the welfare of the citizens of the State." (*Ibid.*)

The provisions in Resolution 75-58 that are most relevant to your questions about sources of water for the pending renewable energy projects are the following three "Principles:"

1. It is the Board's position that from a water quantity and quality standpoint the source of powerplant cooling water should come from the following sources in this order of priority depending on site specifics such as environmental, technical and economic feasibility consideration: (1) wastewater being discharged to the ocean, (2) ocean, (3) brackish water from natural sources or irrigation return flow, (4) inland wastewaters of low TDS, and (5) other inland waters.
2. Where the Board has jurisdiction, use of fresh inland waters for powerplant cooling will be approved by the Board only when it is demonstrated that the use of other water supply sources or other methods of cooling would be environmentally undesirable or economically unsound.
7. The State Board encourages water supply agencies and power generating utilities and agencies to study the feasibility of using wastewater for powerplant cooling. The State Board encourages the use of wastewater for powerplant cooling where it is appropriate. Furthermore, Section 25601(d) of the Warren-Alquist Energy Resources Conservation and Development Act directs the Commission to study, "expanded use of wastewater as cooling water and other advances in powerplant cooling" and Section 462 of the Waste Water Reuse Law directs the Department of Water Resources to "...conduct studies and investigations on the availability and quality of waste water and uses of reclaimed waste water for beneficial purposes including, but not limited to... and cooling for thermal electric powerplants."

(State Water Board Resolution 75-58, pp. 4-5.)

In State Water Board Resolution 88-63, the board determined that, with specified categorical exceptions, "[a]ll surface and ground waters of the State are considered to be suitable, or

potentially suitable, for municipal or domestic water supply” (State Water Board Resolution 88-63, p. 1.) The relevant categorical exceptions is where the water has TDS exceeding 3,000 mg/L and the water is not reasonably expected by regional boards to supply a public water system. (*Ibid.*)

More specifically, your questions relate to Resolution 75-58’s definitions of “brackish waters” and “fresh inland waters” and Resolution 88-63’s treatment of “sources of drinking water.” “Brackish waters” is defined by Resolution 75-58 as “waters with a salinity range of 1,000 to 30,000 mg/L and a chloride range of 250 to 12,000 mg/l.” (State Water Board Resolution 75-58, p. 2.) “Fresh inland waters” is defined by Resolution 75-58 as “those inland waters which are suitable for use as a source of domestic, municipal, or agricultural water supply and which provide habitat for fish and wildlife.” (*Ibid.*) As a general matter, that means “fresh inland waters” for purposes of Resolution 75-58 does not extend to groundwater, which typically does not provide fish or wildlife habitat. On the other hand, State Water Board Resolution 88-63 generally provides that all surface waters and ground waters with a TDS of 3,000 mg/L or less shall be considered to be suitable for municipal or domestic water supply.

The Commission’s primary issue revolves around whether brackish waters with a TDS of between 1,000 and 3,000 mg/L should be considered to be fresh inland waters in the context of Resolution 75-58’s Principle No. 2. The answer is typically yes for surface waters and no for ground waters. Due to the State Water Board’s subsequent adoption of Resolution 88-63, which establishes the threshold of 3,000 mg/L TDS for suitability, or potential suitability, for domestic or municipal water supply, surface waters that support fish and wildlife habitat and have TDS concentrations of 3,000 mg/L or less should be considered to be “fresh inland waters” for the purposes of Resolution 75-58’s Principle No. 2. As a result, such waters should only be used for these renewable energy projects upon a demonstration that the use of other water supplies or other methods of cooling would be “environmentally undesirable” or “economically unsound.” With respect to ground waters, they would not be considered “fresh inland waters” because they do not provide habitat for fish and wildlife.

Neither “environmentally undesirable” nor “economically unsound” is defined in Resolution 75-58. It appears that the State Water Board has not had occasion to formally interpret or apply either phrase since it adopted Resolution 75-58. If recycled water is available, and its use would not cause greater significant adverse effects on the environment than the use of fresh inland waters would cause, then it is unlikely that the State Water Board would find that the use of the recycled water is “environmentally undesirable.” Water Code section 13550, which was enacted in 1977, helps to inform how the phrase “economically unsound” should be applied. Section 13550 contains a legislative declaration that the use of potable¹ domestic water for nonpotable uses, including industrial use, is a waste or unreasonable use of the water if the State Water Board determines that, among other things, recycled water of an adequate quality is available at a cost that is comparable to, or less than, the cost of supplying the potable water. Therefore, if recycled water is available for these projects at roughly the same or lower cost, then the use of fresh inland waters should clearly be considered to be “economically unsound.”

In its 2003 Integrated Energy Policy Report, the Commission stated that it interprets “economically unsound” in this context as “economically or otherwise infeasible.” To the extent

¹ “Potable water” in Water Code section 13550 refers to both surface water and ground water.

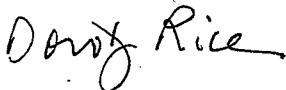
that the Commission determines that it is appropriate to require project applicants to incur substantially increased, but economically feasible, costs in order to use recycled water in lieu of fresh inland waters, such a result would not be compelled by the terms of Water Code section 13550. As the State Water Board has not yet defined "economically unsound," it is not possible to determine whether such a result would be required by Principle No. 2 of Resolution 75-58. Nonetheless, it would be consistent with Principle No. 7 of Resolution 75-58, which encourages the use of recycled water for powerplant cooling.

As you point out, Principle No. 1 of Resolution 75-58 lists brackish water as generally a higher priority for powerplant cooling than inland wastewaters of low TDS and other inland waters. This priority scheme is, however, explicitly dependent on site-specific considerations, including environmental considerations. One of the underlying bases for Resolution 75-58 is that "[t]he loss of inland waters through evaporation in powerplant cooling facilities may be considered an unreasonable use of inland waters when general shortages occur." (State Water Board Resolution 75-58, p. 3, Basis 4.) Thus, in a water short area with available recycled water, site-specific environmental considerations may dictate that the use of recycled water should take precedence over the use of brackish water.

Finally, the State Water Board understands that the Commission and other state and federal agencies are working on a longer-term plan for future renewable energy projects. The State Water Board would welcome the opportunity to assist with such a planning effort by identifying the existing and anticipated future sources of recycled water that may be available for future energy projects. Such a mapping approach may be used by the Commission and potential project applicants in siting future power plants in closer proximity to such sources of recycled water, thereby minimizing additional demands on the state's limited potable water supplies.

I hope that this answers the questions you have posed. Please do not hesitate to contact Jonathan Bishop, State Water Board Chief Deputy Director, at (916) 341-5820 to discuss these or any other issues.

Sincerely,



Dorothy Rice
Executive Director