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AZ CORP COMMISSION
DOCKET CONTROL

Janet Napolitano
Governor

Herbert R. Guenther
Director

June 4, 1007

The Honorable Kristin K. Mayes
The Honorable William Mundell
The Honorable Mike Gleason
The Honorable Jeff Hatch-Miller
The Honorable Gary Pierce
Arizona Corporation Commission
Commissioners Wing
1200 West Washington Street
Phoenix, AZ 85007-2996

Docket No. L-00000FF-07-0134-00133

Arizona Corporation Commission
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Dear Commissioners:

I am writing regarding the Arizona Corporation Commission's role in approving new power plants within the state. Pursuant to A.R.S. § 40-360.03, a person planning to construct a new power plant with a rating of 100 megawatts or more must apply to the Commission for a Certificate of Environmental Compatibility (CEC). Upon receipt of an application for a CEC, the Commission must refer the application to the Power Plant and Transmission Line Siting Committee (Committee) for review and decision. After the Committee issues a decision on the application, the decision goes to the Commission for further consideration.

Under A.R.S. § 45-360.13, if a proposed power plant is within the service area of a city or town in an Active Management Area, the Committee must consider, as a criterion for issuing a CEC, "the availability of groundwater and the impact of the proposed use of groundwater on the management plan established under title 45, chapter 2, article 9 for the active management area." Although the statutes do not expressly mandate similar consideration for power plants in areas of the state outside of Active Management Areas, for the past few years, the Commission has chosen to consider as a criterion for issuing a CEC in any area of the state, the impact of the proposed power plant on the water supplies in the area. I certainly applaud that policy. I would like to also offer the following for your consideration with respect to the siting of new power plants in the state.

As you know, Arizona is experiencing a persistent drought such as we have not seen in hundreds of years. Climate experts suggest this long-term drought may be Arizona's new water reality. Add to this our increasing population growth, and we find ourselves facing a new frontier of sorts here in the Southwest, one where drought and diminished water supplies frame our ongoing efforts to provide a sustainable water supply for the next generations who will live here. As we explore where our future water supplies will come from, we are reminded daily that the best future water supply is the one we don't use today; that is, every gallon of water we save through conservation is one we have for tomorrow.

The Active Management Areas have developed a series of water conservation best practices for large power plants that we believe would be beneficial if enacted statewide. There are six main categories of practices:

- Reusing or recycling water
- Avoiding single-pass cooling unless the water is reused
- Use of low-flow plumbing fixtures
- Use of low water-use landscaping with efficient irrigation systems
- Developing site-specific water conservation plans for large facilities

The major consumptive use of water at large power plants is evaporation of water from cooling towers. Because of the large volume of water used in towers, conservation practices focus on achieving a high level of efficiency in cooling tower operations. The main conservation practice required is the design of new power plants to achieve an annual average of 15 or more cycles of concentration, of cooling tower water.[1]

Partial or total use of effluent in cooling towers is encouraged as an alternative to only using groundwater. The feasibility of this use depends on a number of factors, including the availability of effluent, the volume and timing of water demand at the towers, water quality considerations, etc.

Facilities may apply to use other conservation technologies in place of achieving 15 cycles of concentration if the use of the proposed technologies will result in equal or greater water savings.

I encourage you to consider these best practices for water conservation at large power plants, proven to work in the Active Management Areas, as you deliberate appropriate requirements for new large power plants sited in Arizona.

Sincerely,

Herbert R. Guenther
Director

[1] "Cycles of concentration" achieved in a cooling tower is an indicator of water efficiency. Cooling towers consistently operated at higher cycles of concentration consume less water than towers consistently operated at lower cycles of concentration. Cycles of concentration can be determined by dividing the concentration of a constituent in the blowdown water by the same concentration of the constituent in the make-up water. Total dissolved solids (TDS) content is commonly used for calculating cycles of concentration. For example, if the TDS concentration in blowdown water is 1,500 miligrams per liter (mg/L) and the TDS in the make-up water is 300 mg/L, the tower is operating at 5 cycles of concentration.