LEWIS AND ROCA LLP LAWYERS

Phoenix
40 Nort
Phoenix
Facsimi
Telephone (602) 262-5311

Las Vegas Office
3993 Howard Hughes Parkway
Suite 600
Las Vegas, Nevada 89109
Facsimile (702) 949-8398
Telephone (702) 949-8200

Thomas H. Campbell
Direct Dial: (602) 262-5723
Direct Fax: (602) 734-3755
Internet: TCampbell@lrlaw.com
Admitted in Arizona

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HAND DELIVERED

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Chairman William A. Mundell
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, Arizona 85007

Re: U.S. Department of the Interior Letter of February 12, 2002

Dear Chairman Mundell:

We appreciate the invitation as stated in your February 15, 2002 letter to provide the Arizona Corporation Commission ("Commission") with information that may be helpful in resolving the question of whether the Department of Interior letter presents an issue requiring further consideration on the part of the Commission.

On February 13, 2002, Duke Energy Arlington Valley, LLC ("Duke") received a copy of the letter from the United States Department of the Interior, U.S. Geological Survey ("USGS") addressed to you regarding, as the letter describes, "cracks" in the earth near the Palo Verde Nuclear Generating Station ("Palo Verde").

USGS first contacted Duke in regard to this issue on January 28, 2002. Duke promptly responded to the USGS inquiry and provided the USGS with a copy of Dr. Peter Mock's groundwater studies. For reference, Dr. Mock performed a cumulative groundwater impact study for Maricopa County to determine the impact that the proposed Red Hawk, Sempra and Duke facilities would have on the Centennial Wash aquifer. Dr. Mock's report was based, in part, on the detailed geology and hydrogeology studies done for Palo Verde.

Duke took the issues raised by the USGS very seriously and immediately began its own investigation. On January 31, 2002, Duke retained Herbert Schumann, one of the premier experts on subsidence and earth fissures. Mr. Schumann did much of the USGS work on subsidence and earth fissures in Arizona during his long career with the USGS. After reviewing the available data, talking with representatives from the USGS, meeting with Duke's hydrologist and with Dr. Peter Mock, and visiting the site, Mr. Schumann determined that Red Hawk's, Sempra's and Duke's worst-case scenario

for proposed pumping would not appear to have any impact on this crack, nor would this crack have any impact on Red Hawk's, Sempra's or Duke's facilities.

As part of the evaluation and study of the issue, Duke directed Mr. Schumann and Dr. Mock to speak with Bill Steinkampf at the USGS. It was clear from these discussions, and discussions Lewis and Roca had with Mr. Steinkampf, that the USGS did not yet have the information necessary to make any conclusions regarding the crack.

Not surprisingly, therefore, the USGS letter does not set forth many details that may be useful to the Commission in understanding this issue. For instance, as your letter notes, the USGS letter is "very imprecise with regard to the area under consideration."

Your letter invited interested parties to provide information that would be useful to the Commission in evaluating whether or not this issue requires further consideration by the Commission. As noted, Duke has made its own investigation of the issue. The following is a list of the major facts that Duke weighed in its assessment of the impact of the proposed water withdrawals from the Arlington Valley area on this issue.

First, although the USGS letter does not mention it, the crack has been studied. In November 2001, the Arizona Geological Survey ("AzGS") issued an Open File report on the crack. In fact, it was the November 2001 report issued by the AzGS that appears to have drawn the interest of the USGS in this issue. Of immediate importance to Duke was the conclusion offered by the AzGS in the November 2001 report. The report concluded that the crack "... poses no threat to the facility (Palo Verde)."

Second, one of the key factors in Duke's evaluation was the location of the crack. The crack in the earth is approximately 1.5 miles east of Palo Verde and approximately ¼ mile long. It runs north to south. In other words, the crack is not tending towards Palo Verde. The crack is approximately 4 miles northeast from Duke's property in a different groundwater basin.

Third, the crack is located in a very small, somewhat isolated, basin defined by bedrock. The figures presented in Dr. Mock's hydrology study show this area as a small "tea-cup" basin (Palo Verde basin) between two larger basins. To the south is the Centennial Wash basin where the Red Hawk, Sempra and Duke facilities are located. To the north of the small Palo Verde basin is the Tonopah basin. Palo Verde resides in the "tea-cup" groundwater basin. Although these three basins appear to have some hydrological connection, there is little water movement among them. In fact, Dr.

Mock's report shows that the majority of water flowing into the Centennial Wash basin is coming from the east where there is not the same shallow bedrock to restrict flow. Accordingly, Dr. Mock has concluded that groundwater pumping at the Red Hawk, Sempra, and Duke facilities will have only minor impact on the groundwater levels within the Palo Verde basin, where the crack exists.

Fourth, subsidence and earth fissures are the result of long-term groundwater pumping. Pumping records for the Palo Verde basin, where the crack is, indicate that prior to the retirement of the farmland, it was pumped heavily by the farmers. The crack is likely the result of land subsidence resulting from this historically heavy pumping of the Palo Verde basin which contains the crack, not from pumping in the Centennial Wash basin which contains the Red Hawk, Sempra and Duke properties.

Fifth, Maricopa County investigated the issue of subsidence in the area surrounding the Red Hawk, Sempra, and Duke properties by interviewing local residents. Specifically, a Commissioner from the Planning and Zoning Commission asked local residents if they had observed any of the characteristic signs of subsidence such as lateral branches of canals running backwards, breaks in canals, or land depressions. None of the residents questioned noted any indication of subsidence in the area. Based on interviews with local residents, the County concluded that there were no indications of subsidence in the area of the Red Hawk, Sempra and Duke facilities.

Since pumping from the Centennial Wash basin would not appear to have any impact on this crack, Duke does not feel it would be necessary to reopen the Duke, Sempra or Red Hawk siting cases. It appears from the USGS letter and our discussions with the USGS that the USGS is interested in monitoring this crack area. Duke certainly is willing to participate in cooperation with the Commission, ADWR, AzGS, Red Hawk, Sempra, Palo Verde and any other parties interested in monitoring this crack in the Palo Verde basin. In the meantime, Duke would be happy to make Mr. Schumann and Dr. Mock available to the Commission to discuss this issue in greater detail.

Very truly yours,

LEWIS AND ROCA LLP

Tom Campbell

Thomas H. Campbell

THC/bjg

cc: Commissioner Irvin
Commissioner Spitzer
Laurie Woodall, Chairperson, Arizona Power Plant and Transmission Line Siting Committee
Arizona Corporation Commission Docket Control
Nick B. Melcher, USGS