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HAND DELIVERED

January 21, 2005

Chairman Jeff Hatch-Miller
Commissioner Marc Spitzer
Commissioner William A. Mundell
Commissioner Mike Gleason
Commissioner Kristin K. Mayes
ARIZONA CORPORATION COMMISSION
1200 West Washington Street
Phoenix, Arizona 85007

RE: Report on the Cause of Valley Substation Fires (Docket No. E-00000J-04-0522)

Dear Commissioners:

Attached are six (6) external and internal assessments and other information relating to the Westwing and Deer Valley substation incidents this past summer. These incidents required APS to operate its energy delivery system without significant Valley transmission import capability during high demand periods in July and August. Despite these disadvantages, the Company and its employees were able to keep the lights on for customers.

The purpose of this cover letter is to briefly summarize the reports' principal findings and conclusions; generally describe the reports' recommendations for improvements in the way we operate our system; and provide additional information requested by the Commissioners.

Comprehensive Assessments of Operational and Maintenance Performance

The comprehensive performance assessments attached to this letter include independent, third-party reviews by EPRIsolutions Inc. and Harold Moore & Associates Inc. (both of whom are highly qualified and recognized industry experts), as well as APS' own internal examinations of the events of the summer of 2004. Both independent reviews conclude that APS' maintenance practices did not contribute to the events of June 14, July 4 or July 20.

The assessments were based on interviews of more than 100 of APS' operational and maintenance staff, contract workforce, construction crews, inspection and engineering teams, and company leadership. In addition, the assessments focused on the operational and maintenance practices for APS' transmission system, the overall reliability performance of APS in comparison to other utilities, and an analysis of three events during the summer of 2004:

- The June 14, 2004, grid disturbance;
- The July 4, 2004, fire at the Westwing transmission substation; and
- The July 20, 2004, fire at the Deer Valley distribution substation.

The analysis of the three events also included a forensic examination of failed equipment, a review of APS' actions in response to those events, and a determination of the relationship – if any – among the events.

Principal Findings & Conclusions: Root-Cause Analysis of July 4, 2004 Fire

The assessments' findings indicate a connection between the June 14 grid disturbance and the July 4 Westwing substation fire, but no such connection to the July 20 Deer Valley substation fire. In summary, the findings from these studies indicate that the July 4 Westwing fire was the result of an unusual combination of initiating and contributing factors:

- The June 14, 2004, fault on the Western Area Power Administration's (WAPA) 230-kV Liberty to Westwing transmission line;
- A relay that failed to properly function and isolate the June 14 line fault as intended. (The failure rate established by the manufacturer for this type of relay is estimated to be about one failure in 2,000 years of use.); and
- Miscommunication about the status of a key breaker between the APS operations center and a field technician at the Westwing site. This event occurred during restoration of the system to its original operating configuration immediately after the June 14 line fault.

None of these events, by themselves, would have been sufficient to cause a failure of the Westwing T-1 transformer. However, this combination of events resulted in the T-1 transformer sustaining damage. The resulting damage from the line fault was not known until well after the July 4 Westwing fire. Two separate tests of the transformers conducted between June 14 and July 4 indicated normal operating conditions and temperatures.

The June 14 fault essentially weakened the T-1 transformer, rendering it vulnerable to the internal fault that occurred on July 4. This fault resulted in tremendous internal pressure causing mineral oil to spew from the transformer. Once outside the transformer's protective housing, the oil combined with air and electrical arcing, thus leading to the catastrophic fire.

(Further detail can be found in the accompanying Performance Assessment with a flow chart outlining the sequence of events, Figure 6, page 16.)

In a separate incident on July 20, 2004, a transformer at the Deer Valley distribution substation failed and caught fire. The analyses found this fire was not related to the June 14 grid disturbance or the July 4 fire. Instead, this incident was attributed to the failure of a bushing located directly over the control cabinet. A review of the maintenance history of this transformer revealed that it had been inspected and maintained without prior indication of the impending bushing failure.

Principal Findings & Conclusions: APS Maintenance Practices & Performance

Just as important as the root-cause analysis of the fire itself, was an in-depth and extensive review of APS' transmission and substation maintenance practices, as well as the Company's response to the summer's events. The findings determined that:

- APS' maintenance practices did not contribute to the events of June 14 or to the July 4 and July 20 fires;
- APS, as a proactive organization, is committed to the continuous improvement of its service effectiveness and reliability;
- The overall practices, effectiveness and performance of APS' maintenance organization compare favorably with industry Standard Practices, Standard Effectiveness and Standard Performance;
- APS is managing its entire transmission and distribution system on par with the better utilities in the nation; and
- The Company's response to the June 14 event was prompt, professional and in accordance with industry guidelines.

Recommendations for Improvements

In addition to evaluating the effectiveness of APS' overall maintenance and reliability program, the assessments identify a number of APS competencies and strengths in this area. However, the assessments also identify areas of lesser performance and provide a number of recommendations for operational improvements.

These recommendations include:

- Adding redundant relays in all protection systems where a single relay is used to communicate with multiple breakers;
- Improving current communication protocols from the field to the operations center and vice versa;
- Adopting new technological advancements in diagnostic tools to supplement the Best Practices already used by APS;
- Continuing the development of a comprehensive maintenance basis for all non-trivial transmission and substation systems and components;
- Developing standard maintenance procedures in electronic format for all non-trivial transmission and substation systems and components; and
- Improving planning, scheduling and outage coordination, including developing enhanced evaluation and tracking mechanisms.

APS Response to Findings & Recommendations

The Company agrees with the assessments' overall findings and conclusions, and is in the process of implementing the third-party recommendations. To date, APS has acted on six of the recommended improvements. The Company plans on implementing two of the improvements in early 2005, and the remaining recommendations will be prioritized and scheduled. *(A table summarizing all of the specific third-party recommendations – and APS' corrective actions – can be found in the accompanying Performance Assessment beginning on page 19.)*

Attachments & Additional Information

The comprehensive assessments, findings and conclusions referenced in this letter are derived from independent third-party reviews, as well as APS' own internal examinations of the events of the summer of 2004. These assessments and supporting documents are attached:

- *Operation and Maintenance Performance Assessment of Arizona Public Service (APS), EPRI Solutions, dated January 14, 2005;*
- *Root Cause of Failure Report for the June 14, 2004, Grid Disturbance, APS, dated October 1, 2004;*
- *June 14, 2004, 230kV Fault Event and Restoration, APS, dated December 3, 2004;*
- *Arizona Public Service Westwing Substation Autotransformer Failure Analysis Report, Harold Moore & Associates, dated December 11, 2004;*
- *Review of APS Response to 6/14/04 Event as Related to the 7/4/04 Event, APS, dated January 5, 2005; and*
- *Transmission & Substation Maintenance Practices Assessment for Arizona Public Service, EPRI Solutions, dated January 14, 2005.*

In addition, as part of this filing, we have attached our responses to:

- Questions posed by Commissioners at the November 15, 2004, update session; and
- Questions posed by Commissioner Mayes in a letter dated January 3, 2005.

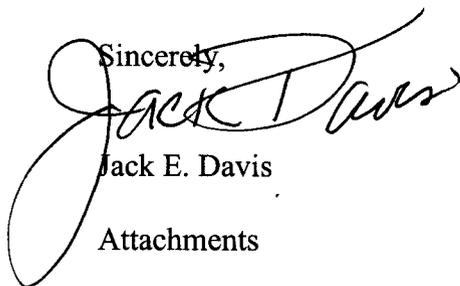
Conclusion

Both external third-party and internal analyses indicate that the transmission events of Summer 2004 resulted from an unusual combination of contributing factors. Further, the analyses found that the Company's overall maintenance practices, effectiveness and performance compare favorably with industry peers; that APS is conscientious in its operation and maintenance practices; and that its maintenance practices did not contribute to either of the summer's fires.

At the same time, the analyses identified specific recommendations to increase APS' effectiveness and level of performance – recommendations which APS intends to implement.

The events of the summer of 2004 taxed our Company's employees and placed a burden on the entire community. As we prepare to meet our customers' needs in the summer of 2005 and beyond, we look forward to putting our lessons learned into practice. As always, the Company is available to further discuss the independent assessments and accompanying reports with the Commission.

Sincerely,



Jack E. Davis

Attachments

Cc: Ernest Johnson
Christopher Kempley

Brian C. McNeil
Steve Olea

Jerry Smith