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AZ CORP COMMISSION
DOCKET CONTROL

April 29, 2016

Docket Control
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

Re: Tucson Electric Power Company's Annual Summer Preparedness Report
Decision No. 69680, Docket No. L-00000C-95-0084-00000

Enclosed please find Tucson Electric Power Company's ("TEP") annual summer preparedness report ("Report"). TEP is filing this report in accordance with Decision No. 69680 (July 6, 2007), Docket No. L-00000C-95-0084-00000, which modified the Certificate of Environmental Compatibility granted in Decision No. 59221 (August 8, 1995) (the "Decision").

The attached Report discusses TEP's Green Valley area 46 kV system to timely restore service to the following as set forth in the Decision:

- (a) all customers served from Green Valley Substation and Canoa Ranch Substation following outage of the 138 kV South to Green Valley line –(Note: the 138 kV project between the Canoa Ranch and Duval CLEAR / Cyprus Sierrita Substations was completed in June 2013)
- (b) the applicable load of UNS Electric, Inc. ("UNS Electric") customers via the 46 kV tie from Canoa Substation to Kantor Substation for an outage of the UNS Electric 138 kV line to Nogales; and
- (c) all TEP customers and applicable load of UNS Electric customers for the concurrent outage of the South to Green Valley 138 kV line and the UNS Electric 138 kV line to Nogales.

If you have any questions regarding the Report, please contact me at (520) 884-3680.

Sincerely,

Melissa Morales
Regulatory Services

cc: Compliance Section, ACC

Arizona Corporation Commission
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Tucson Electric Power

**2016 Green Valley and Kantor
Substation Summer Preparedness**

**Prepared By:
Tucson Electric Power Company**

April 2016

EXECUTIVE SUMMARY

Transmission Planning for UNS Energy Corporation has evaluated the ability for existing transmission and sub-transmission facilities to serve load in the community of Green Valley and load served out of the Kantor substation in Santa Cruz County. As a result of evaluating contingencies involving an outage of TEP's 138 kV transmission, or UNS Electric, Inc.'s (UNSE) 138kV transmission, it has been determined that area transmission and distribution systems are able to adequately serve load in the areas supplied by the Green Valley and new Canoa Ranch substations (TEP) and Kantor substation (UNSE) for the 2016 summer peak load period. Future plans in the Green Valley area are included in the TEP and UNSE 10 Year Plans that were filed at the Arizona Corporation Commission (ACC) January 29, 2015.

BACKGROUND

Green Valley

Green Valley's power delivery needs are met by a looped 138 kV transmission circuits originating at TEP's South substation (Exhibit A). The Canoa Ranch-Duval Clear 138kV line has been completed, increasing the reliability for the load served out of Canoa Ranch and Green Valley Substations, by looping them together with South.

- Green Valley T3 138/13.8 kV, 50.0 MVA, 60.0 MVA Emergency
- Canoa Ranch T1 138/13.8 kV, 50.0 MVA, 60.0 MVA Emergency

Kantor

Kantor substation is one of four substations serving UNSE load in Santa Cruz County. This station is served by the 138 kV radial transmission line supplied by the TEP Vail substation. For loss of this line, the load at Kantor can be picked up via an existing 46 kV tie, 46C552, served from TEP's South substation. The rating of this 46 kV circuit is 49 MVA. The 46/13.2 KV transformer capacity at Kantor is 75.0 MVA. Expected load on 46C552 in 2016 is 30.25 MVA including the Kantor load of 7.7 MVA. Therefore the net 46 kV system capacity exceeds the projected peak demand both for the 46 kV line and the Kantor transformer.

CONTINGENCY OPERATION

TEP plans its transmission network to comply with NERC Transmission Planning Standards and WECC System Performance Criteria. The results of these studies are reflected in TEP's Ten-Year Plan filed with the ACC in January 2015. With the completion of the Canoa Ranch – Duval Clear 138kV line, the Green Valley and Canoa Ranch Substations can continue to be served via either the South – Green Valley or South – Canoa Ranch 138kV lines if the other line is out of service.

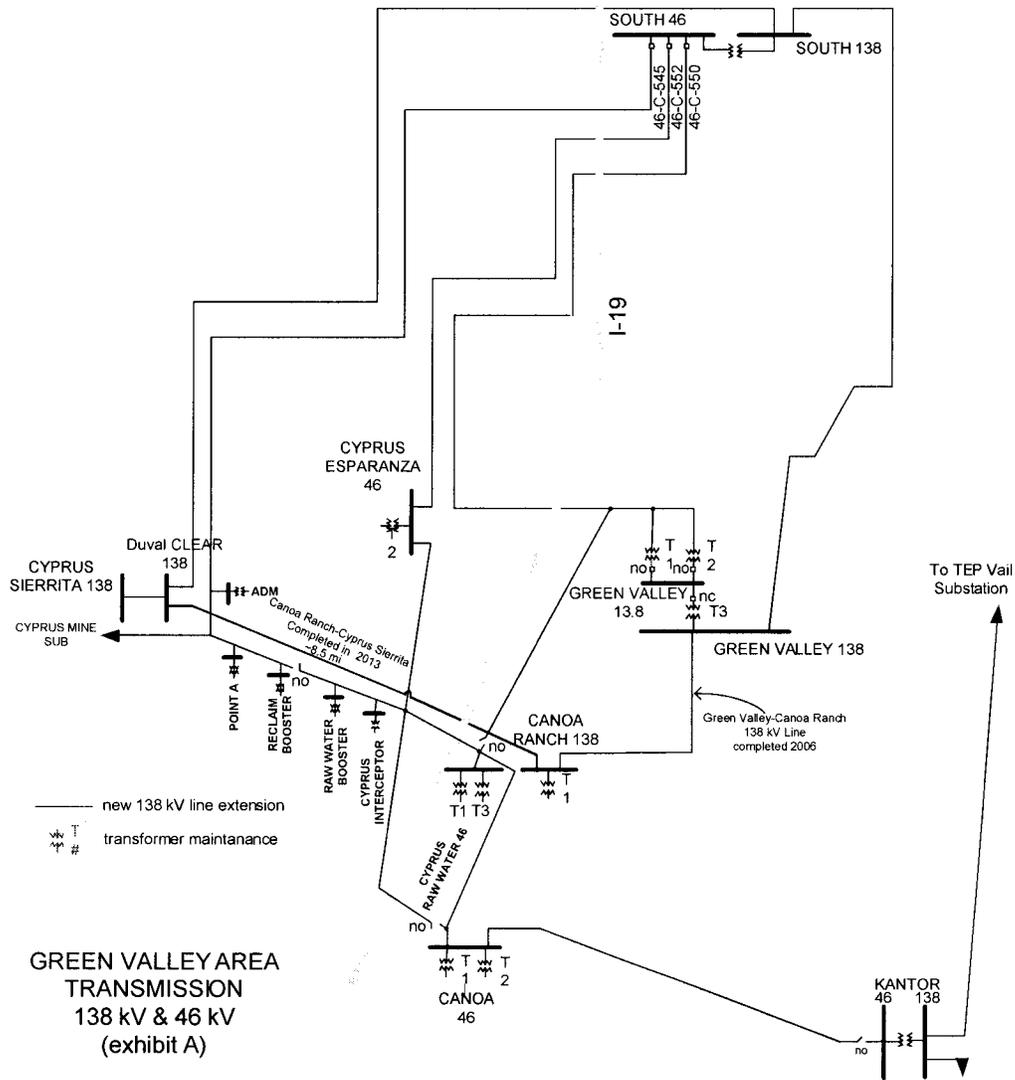
Kantor

The TEP 46 kV circuit 46C552, served from South substation, is used to back up the Kantor substation for loss of the 138 kV radial serving Santa Cruz county. The 46 kV circuit is rated at 49 MVA and also serves Cyprus Esparanza Wells, Canoa, Cyprus Raw Water Booster, and Cyprus Point A. The remaining capacity available after backing up Kantor is shown as "46C552 Margin" in the following table:

| Substation | Rating | 2014 Load |
|------------------------------------|--------|-----------|
| Cyprus Esparanza Wells-T1 (mine) | 3.1 | .40 |
| Canoa-T2 (mine) | 3.1 | 1.7 |
| Cyprus Raw Water Booster-T1 (mine) | 4.7 | 3.1 |
| Cyprus Raw Water Supply-T1 (mine) | 4.7 | 2.6 |
| Canoa-T1 | 4.7 | 3.3 |
| Cyprus Esparanza Wells-T2 | 14.4 | 11.4 |
| Cyprus Raw Water Supply-T3 | 9.4 | 0.0 |
| Kantor | 75.0 | 7.7 |
| 46C552 Line Load w/ Kantor | 49 | 30.20 |
| 46C552 Line Margin | | 18.80 |
| | | |

Table 3: 46C552 kV Loading

CITY OF TUCSON



GREEN VALLEY AREA
TRANSMISSION
138 kV & 46 kV
(exhibit A)