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Tucson, Arizona 85702

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ARIZONA CORPORATION COMMISSION  
DOCKET CONTROL

January 31, 2014

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

Re: Notice of Filing – UNS Electric, Inc.'s 2014-2023 Ten-Year Plan  
Docket No. E-00000D-13-0002

Pursuant to ARS § 40-360.02, please find enclosed an original and thirteen copies of  
UNS Electric Inc.'s ("UNS Electric") 2014-2023 Ten-Year Plan.

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

Sincerely,

Jessica Bryne

cc: Ed Stoneburg, Utilities Division, ACC  
Compliance Section, ACC

Arizona Corporation Commission  
**DOCKETED**

JAN 31 2014

DOCKETED BY



**UNS Electric, Inc.**

**TEN-YEAR PLAN  
FOR YEARS  
2014-2023**

**SUBMITTED TO THE  
ARIZONA CORPORATION COMMISSION  
JANUARY 2014**

**Docket No: E-00000D-13-0002**

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## **Introduction**

This 2014-2023 Ten-Year Plan is submitted by UNS Electric, Inc. (“UNS Electric”) pursuant to A.R.S. § 40-360.02. Included with this plan are transmission facilities planned for both the Mohave and Santa Cruz County service territories.

Previously reported facilities that have been canceled are not included. Projects not expected to be built within the 10-year planning horizon are shown as having in-service dates to be determined (“TBD”). These projects may move into the ten-year planning horizon in subsequent studies.

This report includes system maps depicting the existing transmission networks and planned or contemplated projects followed by individual project descriptions. The maps and descriptions are intended to be general planning-level documents to explain projects conceptually. Therefore the maps and descriptions do not represent specific routes or facility locations.

### **Load Forecasting**

UNS Electric’s 2014 – 2023 Ten-Year Plan was developed based on UNS Electric’s Corporate Forecast approved in January 2013. This forecast takes into account distributed renewable generation and energy efficiency programs, as well as UNS Electric’s retail customer load. The load offset due to distributed renewable generation and energy efficiency programs did not alter the UNSE Ten-Year Plan.

### **Service Territories**

Following this brief discussion of activities in the service territories are conceptual maps of the planned facilities and details of the proposed projects.

#### ***Mohave County***

The Arizona Corporation Commission (the “Commission”) has approved a Certificate of Environmental Compatibility (“CEC”) (Case No. 88) for the Griffith – North Havasu 230 kilovolt (“kV”) line. The Commission subsequently extended the expiration date of this CEC to 2022. The timing for construction of this project will be determined by the growth of UNS Electric’s retail load and limitations on the ability of the Western Area Power Administration (“Western”) transmission system to support this load growth. A portion of this project (North Havasu to Franconia) was completed in 2007 and is currently energized at 69kV to support distribution needs at Franconia. UNS Electric will continue to work with the Arizona subcommittee of the Southwest Area Transmission (“SWAT-AZ”) sub-regional planning group, or a designated work group of SWAT-AZ, to address issues in Mohave County.

#### ***Santa Cruz County***

UNS Electric has completed its planned upgrade of the Vail to Valencia transmission line. In 2009, the Commission approved a CEC (Case No. 144, Decision No. 71282) to rebuild and convert the existing 115kV line between Western’s Nogales switchyard (previously Nogales Tap) and the UNS Electric Valencia substation to 138kV. Part of this project includes transferring the upstream transmission provider from Western to Tucson Electric Power Company (“TEP”), by transferring UNS Electric’s point of interconnection from Western’s Nogales switchyard to TEP’s Vail 138 kV Substation. This rebuild and conversion was completed in December 2013.

### **Reliability Must-Run (RMR) Study**

In the 7th Biennial Transmission Assessment (BTA) (Decision no. 73625, December 12, 2012), the Commission suspended its requirement for RMR studies and established criteria for resuming them based on a biennial review of the following factors:

- 1) An increase in load of more than 2.5% in load forecast relative to the final RMR study year for which RMR studies were last filed; or
- 2) Planned retirement (or an expected long-term outage during the June-August time period) of a transmission or substation facility required to serve an RMR load pocket, unless the facility being retired will be replaced with a comparable facility before the next summer season; or
- 3) Planned retirement (or an expected long-term outage during the June-August time period) of a generating unit in an RMR load pocket that has been utilized in the past for RMR purposes, unless a generator being retired will be replaced with a comparable unit before the next summer season; or
- 4) A significant customer outage (the greater of 100 MW or 10% of the peak demand in the RMR pocket) in an RMR load pocket during summer months.

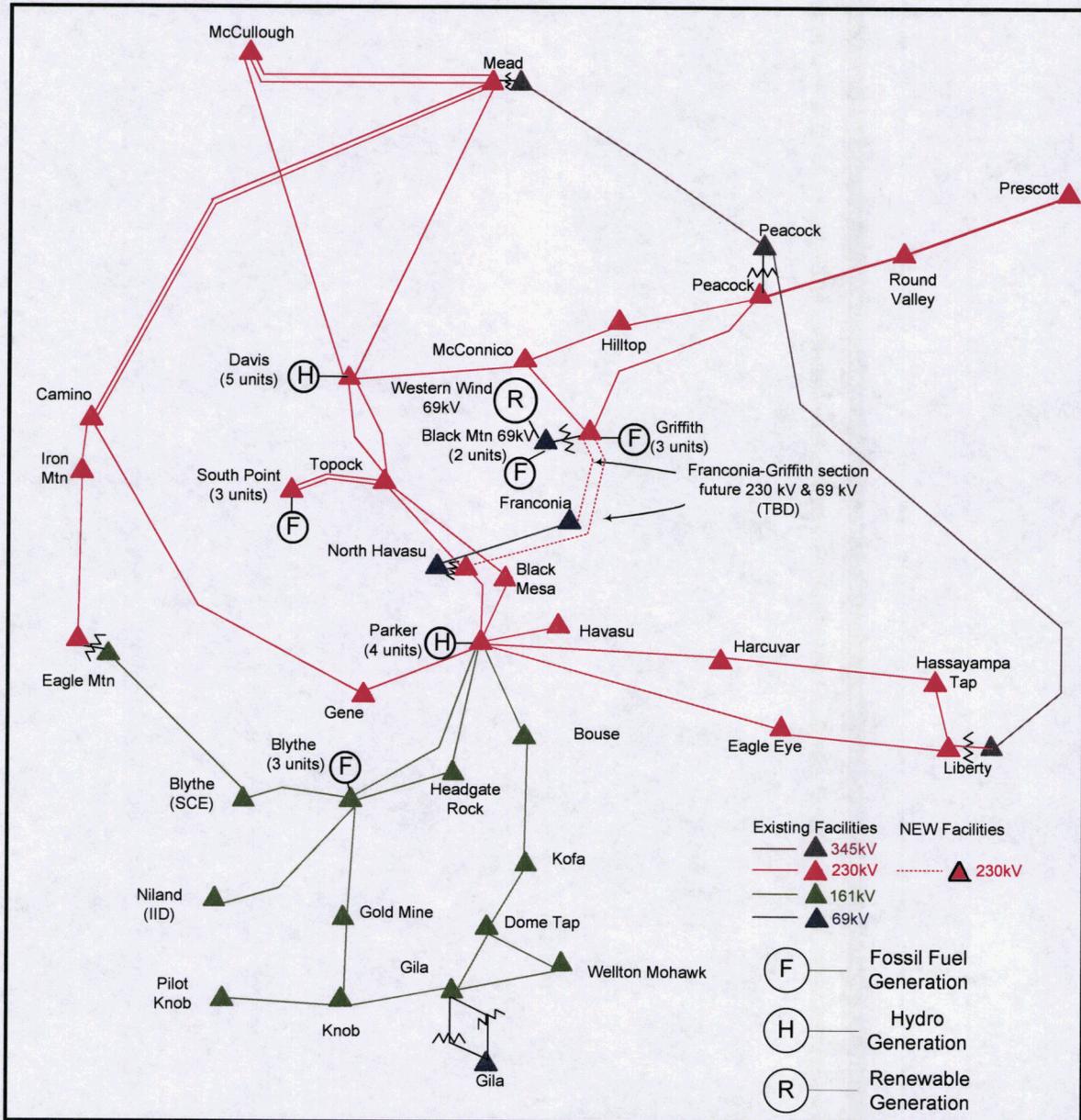
Accordingly, UNS Electric has not included an RMR study for the Santa Cruz or Mohave RMR load pockets in this 10-year plan because none was required under these criteria.

Analysis of the relevant criteria shows that:

- Load forecasts for the Mohave and Santa Cruz load pockets did not increase by more than 2.5% over the levels previously anticipated for 2021, the final year for which RMR studies were last filed.
  - a. UNSE forecasts that the Santa Cruz load pocket will reach 81 megawatts (“MW”) by 2021, less than the 84 MW forecast in the last RMR study.
  - b. The 2021 load for UNSE’s portion of the Mohave load pocket is projected at 379 MW; the last RMR study anticipated 388 MW
  - c. The load for the entire Mohave load pocket is projected to reach 762 MW, significantly less than the 860 MW anticipated by the earlier RMR study.
- UNSE has no plans to retire any generating units, transmission facilities, or substation facilities in the Santa Cruz or Mohave RMR load pockets.
- UNSE does not have any significant customer outages planned for the summer months in the Santa Cruz or Mohave RMR load pockets.

# Mohave County

Figure 1. Mohave County Transmission System



UNS Electric  
10-YEAR PLAN  
TRANSMISSION FACILITIES

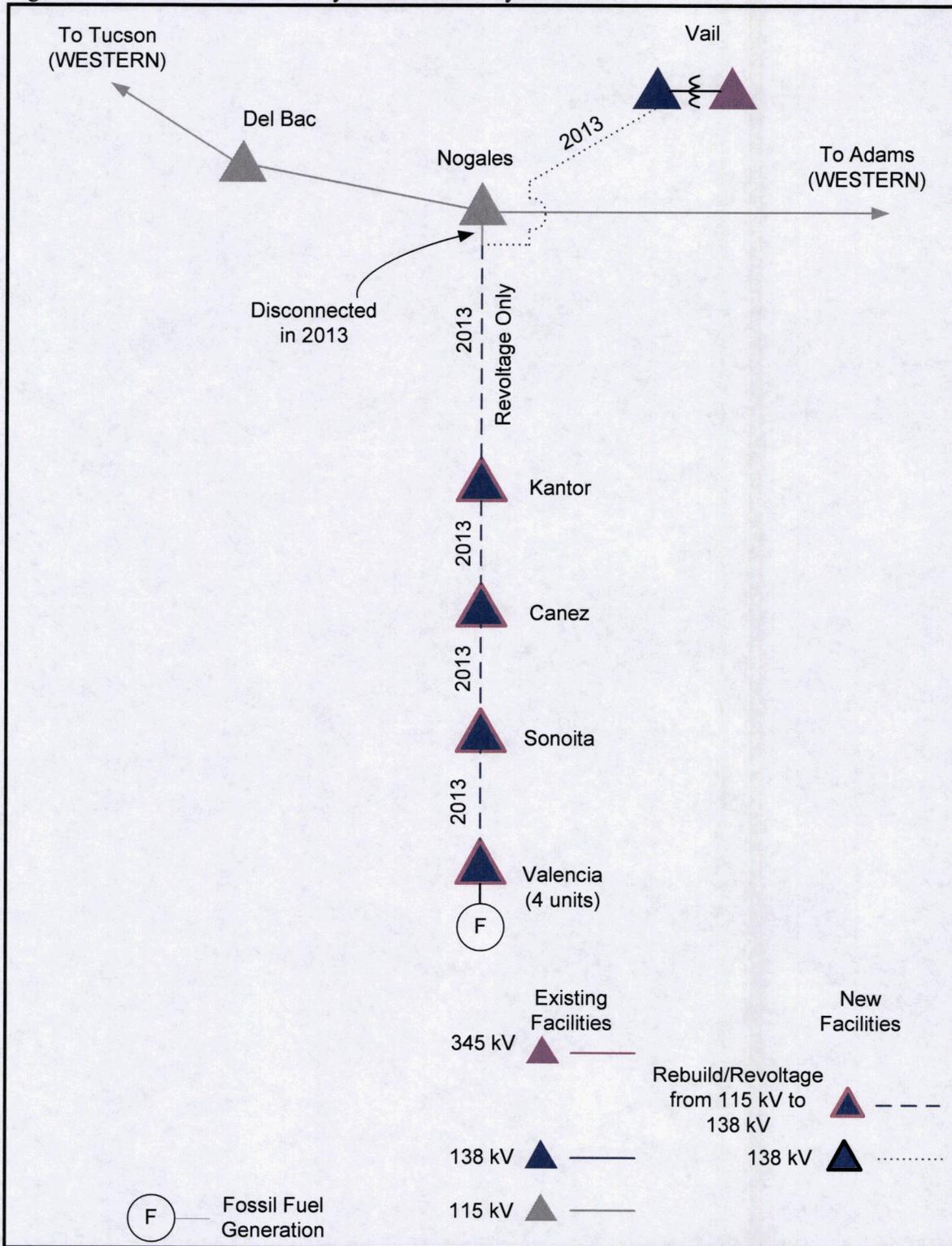
Line Designation Size	Griffith – North Havasu Transmission
a) Voltage	230 kV
b) Capacity	300 MVA (thermal)
c) Point of Origin	Griffith Substation
d) Point of Termination	North Havasu Substation
e) Length	Approximately 40 miles
Routing	West of and parallel to I-40 to Santa Fe Ranch Rd. interchange. Diagonal southeast to the Parker Davis line at Highway 95. Parallel to PD-1 to North Havasu Substation site southeast of the Lake Havasu City airport. Routing to be within corridor as approved and described in CEC Order #88.
Purpose	Reinforce the existing transmission grid and provide interconnection between UNS Electric load centers in Mohave County.
Date	
a) Construction Start	North Havasu to Franconia, 2007
b) In-Service Date	North Havasu to Franconia, 2007 [Complete]
	Franconia to Griffith, TBD
Is Certificate Necessary	Case # 88 <sup>1</sup> -- An extension was approved by the ACC in July 2012 which expires in 2022.
Technical Studies	Studies completed via CATS, CRT, and WATS, and is part of the WestConnect Transmission Plan.

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<sup>1</sup> Hilltop to Griffith portion of line already completed.

# Santa Cruz County

Figure 2. Santa Cruz County Transmission System



UNS Electric  
10-YEAR PLAN  
TRANSMISSION FACILITIES

Line Designation	Upgrade existing 115kV transmission line to Nogales
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Vail Substation
d) Point of Termination	Valencia Substation
e) Length	Approximately 60 miles
Routing	Generally West from TEP's Vail Substation to the Nogales switchyard and then south to UNS Electric's Valencia Substation.
Purpose	The upgrade of the transmission line increases transmission system reliability and provides additional load serving capacity to UNS Electric's Santa Cruz Service Area.
Date	
a) Construction Start	2012
b) In-Service Date	December 2013 - complete <sup>2</sup>
Is Certificate Necessary	Case No. 144
Technical Studies	Internal UNS Electric studies.

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<sup>2</sup> This project will be removed in future Ten-Year Plans