ORIGINAL

Tucson Electric Power Company
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50TP

Ed Beck, Superintendent
Planning and Administration (SC210)

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January 30, 2007

Docket Control
Arizona Corporation Commission
1210 West Washington
Phoenix, Arizona, 85007

Re: E-00000D-05-0040

Docket Control:

Enclosed are thirteen copies and an original of "Ten Year Plans" for both Tucson Electric Power Company (TEP) and UNS Electric submitted by TEP in compliance with Title 40, Chapter 2, Article 6.2 of the Arizona Revised Statutes known as Power Plant and Transmission Line Siting Committee.

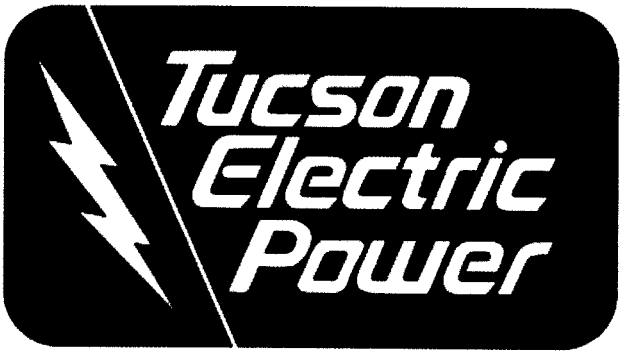
Please acknowledge receipt by returning a copy of this letter.

Sincerely,

Ed Beck

Ed Beck
Superintendent, Planning and Contracts

Cc: Ernest Johnson, ACC
Brian Bozzo, ACC



A UniSource Energy Company

TUCSON ELECTRIC POWER COMPANY
TEN YEAR PLAN
FOR YEARS
2007-2016

SUBMITTED TO THE
ARIZONA CORPORATION COMMISSION
JANUARY 2007

DOCKET NO: E-00000D-05-0040

CONTENTS

INTRODUCTION

EHV Transmission System

Tucson Electric Power Company (TEP) is a member of the Southwest Area Transmission Planning Group (SWAT) and participates in various SWAT subcommittees. SWAT subcommittees that TEP participates in are: SWAT Central Arizona Transmission EHV, SWAT Central Arizona HV, SWAT Colorado River Transmission, and SWAT Arizona-New Mexico. Each of these subcommittees has been involved in studying various generation and transmission projects to enhance and increase utilization of the existing system. TEP is also participating in the Southeast Arizona Transmission Study (SATS). This study includes all or part of Pima, Pinal, Cochise, and Santa Cruz counties.

TEP is a participant in the Hassayampa – Pinal West 500 kV project, which will be in service in 2008. TEP's Westwing – South 345 kV line will loop in at the new Pinal West 500/345 kV substation.

TEP is a participant in the Pinal West – Pinal South portion of the Pinal West – Southeast Valley 500 kV project. TEP plans to construct a 500 kV line between the proposed Pinal South Switchyard and TEP's Tortolita Substation in the year 2011.

TEP is evaluating a 345 kV line between TEP's Tortolita Substation and Vail Substation with a loop in of the East Loop Substation. This project will be completed in two phases, 1) Tortolita Substation to East Loop Substation and 2) East Loop Substation to Vail Substation. Phase 1 has an expected in service date of 2015. The expected in service date for phase 2 is still to be determined.

138kV Local Transmission System

TEP performs an annual review of its 138kV system performance over a ten-year planning horizon. This results in a schedule for new facilities and upgrades to existing facilities assuring adequate transmission capacity within TEP's service territory as Tucson continues to grow. TEP's 138kV system is improved to accommodate new 138 /13.8kV substations and increased line loading.

Load projection analysis looks at distribution system needs and identifies the impact of load growth at each of TEP's distribution substations. This results in proposed new 138/13.8 kV substations and new 138kV transmission lines. Load projection also provides input to the power flow analysis used to identify thermal overloads.

Power flow analysis looks for thermal overloads during normal and contingency operation based on WECC/NERC Level A, B and C reliability criteria. Contingencies include:

- Loss of major EHV import
- Loss of critical local generation
- Single 138kV circuit outages
- Credible 138kV multiple circuit outages
- Critical circuits initially out of service with system operating acceptably followed by a subsequent outage.

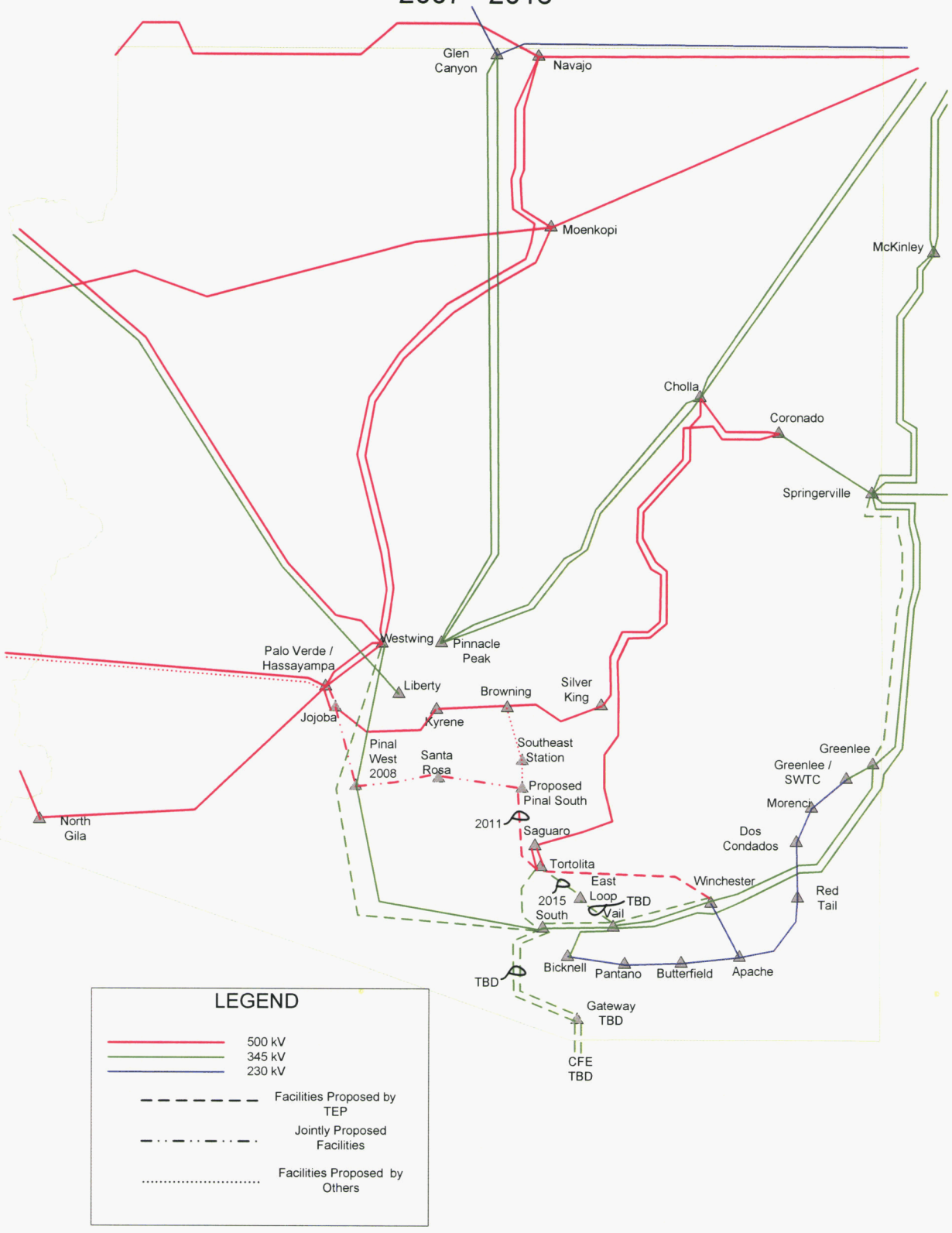
Thermal overloads are addressed with:

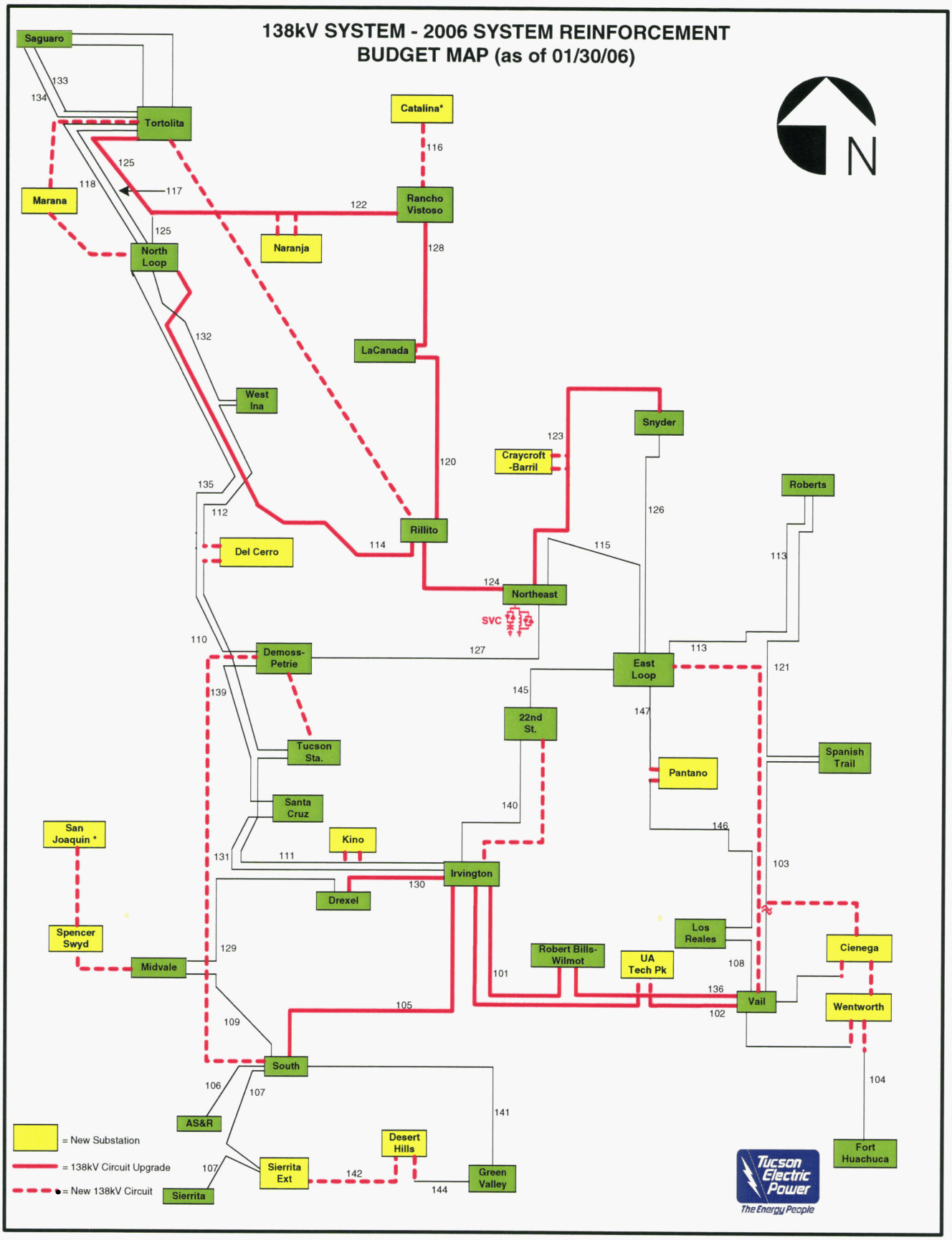
- New transmission lines
- Uprating existing lines (increase NESC clearances or larger ampacity wire)
- New generation (when more economical than transmission)
- Other cost effective measures

Transmission facilities are also added at 138kV to increase reliability at substations that are served radially.

TEP recently completed a Voltage Stability Study (VSS) to identify economic alternatives to existing sources of dynamic VAr support used to assure stable operation under contingency conditions. The study indicated that installing a Static VAr Compensator (SVC) results in reduced unit commitment and dispatch of local generation, as well as reduction in the amount of direct load tripping required to assure similar levels of voltage security when compared to running local generation. As a result, TEP intends to install a -75 to +200 MVAr SVC at its Northeast 138 kV substation with and in-service date in 2008.

Planned TEP EHV Transmission Facilities 2007 - 2016




138kV SYSTEM - 2006 SYSTEM REINFORCEMENT
BUDGET MAP (as of 01/30/06)
N
Saguaro
Tortolita
Catalina*
Marana
Rancho Vistoso
Naranja
North Loop
LaCanada
West Ina
Snyder
Craycroft -Barril
Roberts
Del Cerro
Rillito
Northeast
SVC
Demoss-Petrie
East Loop
22nd St.
Tucson Sta.
Pantano
Spanish Trail
Santa Cruz
San Joaquin *
Kino
Irvington
Drexel
Spencer Swyd
Midvale
Los Reales
Robert Bills-Wilmot
UA Tech Pk
Cienega
Vail
Wentworth
South
AS&R
Desert Hills
Sierrita Ext
Green Valley
Sierrita
Fort Huachuca
= New Substation
= 138kV Circuit Upgrade
= New 138kV Circuit
Tucson Electric Power
The Energy People

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Interconnection of Westwing – South 345 kV with future Hassyampa – Pinal West 500 kV line[i] via new Pinal West 500/345 kV Substation
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Westwing – South Line
d) Point of Termination	Future Pinal West substation (Sec. 6 T5S R1E)
e) Length	Less than 1 mile
Routing	Adjacent to Westwing – South 345 kV line.
Purpose	To reinforce TEP's EHV system and to provide a higher capacity link for the flow of power from the Palo Verde area into TEP's service territory.
Date	
a) Construction Start	2007
b) In-Service Date	2008
Is Certificate Necessary	Case #124
Technical Studies	Studies completed via CATS, WATS, and Palo Verde – Southeast Station study groups.

[i] A joint project being jointly developed with SRP as project manager
[ii] A joint project being jointly developed with SRP as project manager

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Pinal South Substation to Tortolita Substation
Size	
a) Voltage	500-kV
b) Capacity	System dependent
c) Point of Origin	Future Pinal South substation
d) Point of Termination	Tortolita Substation (Sec. 14 T10S R10E)
e) Length	Approximately 30 miles
Routing	Unknown
Purpose	To reinforce TEP's EHV system and to provide a higher capacity link for the flow of power from the Palo Verde area into TEP's northern service territory.
Date	
a) Construction Start	2010
b) In-Service Date	2011
Is Certificate Necessary	Yes
Technical Studies	Studies in progress via SWAT and internal TEP study efforts.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Tortolita Substation to Vail Substation (through East Loop Substation)	
Size		
a) Voltage	345-kV	
b) Capacity	System dependent	
c) Point of Origin	Tortolita Substation (Sec. 14 T10S R10E)	
d) Point of Termination	Vail Substation (Sec. 4 T16S R15E)	
e) Length	Approximately 60 miles	
Routing	Unknown	
Purpose	To reinforce TEP's EHV system and to provide a new tie between TEP's HV and EHV systems.	
Date		
a) Construction Start	2014	
b) In-Service Date	Phase 1 – 2015	Tortolita Substation to East Loop Substation
	Phase 2 – Under Review	East Loop Substation to Vail Substation
Is Certificate Necessary	Yes	
Technical Studies	Studies in progress via SWAT and internal TEP study efforts.	

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Tortolita Substation to Winchester Substation
Size	
a) Voltage	500-kV
b) Capacity	System dependent
c) Point of Origin	Tortolita Substation (Sec. 14 T10S R10E)
d) Point of Termination	Winchester Substation
e) Length	Approximately 80 miles
Routing	As described in Siting Case No. 23
Purpose	To reinforce TEP's EHV system and to provide a higher capacity link for the flow of power from the Palo Verde area into TEP's eastern transmission system.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Case No. 23
Technical Studies	Studies in progress via SWAT and internal TEP study efforts.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Winchester Substation to Vail Substation – 2nd circuit
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Winchester Substation
d) Point of Termination	Vail Substation (Sec. 4 T16S R15E)
e) Length	Approximately 40 miles
Routing	Parallel to existing Winchester – Vail Line
Purpose	To reinforce TEP's EHV system and to provide additional transmission capacity from the future Winchester Station into Tucson
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Yes
Technical Studies	Studies in progress via SWAT and internal TEP study efforts.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Vail Substation to South Substation – 2nd circuit
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Vail Substation (Sec. 4 T16S R15E)
d) Point of Termination	South Substation (Sec. 36 T16S R13E)
e) Length	14 miles
Routing	Parallel to existing Vail – South Line
Purpose	To reinforce TEP's EHV system and to provide additional transmission capacity between Vail and South Substations
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	No
Technical Studies	Studies in progress via SWAT and internal TEP study efforts.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Springerville Substation to Greenlee Substation - 2nd circuit
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Springerville Substation (Sec. 34 T11N R30E)
d) Point of Termination	Greenlee Substation (Sec. 29 T5S R31E)
e) Length	110 Miles total; 27 Miles in Arizona.
Routing	Parallel to existing Springerville to Greenlee line.
Purpose	To deliver power and energy from major TEP interconnections in the Four Corners and Eastern Arizona regions.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Issued in 1975, 1977, 1982 and 1986
Technical Studies	Studies conducted in coordination with neighboring utilities formed the basis for the design of TEP's original EHV system in the 70's. This project is based on that original work. Detailed studies will be developed in the future upon a determination of need for this project by TEP.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Tortolita Substation to South Substation.
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Tortolita Substation (Sec. 23 T10S R10E)
d) Point of Termination	South Substation (Sec. 36 T16S R13E)
e) Length	68 Miles
Routing	From Tortolita Substation south through Avra Valley to existing Westwing-South 345-kV transmission line right-of-way, then parallel to existing Westwing – South line to South Substation.
Purpose	To reinforce TEP's EHV system and to provide a high capacity link for the flow of power in Southern Arizona.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Case #50
Technical Studies	Being re-evaluated as part of SWAT study

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Westwing Substation to South Substation – 2nd circuit
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Westwing Substation (Sec. 12 T4N R1W)
d) Point of Termination	South Substation (Sec. 36 T16S R13E)
e) Length	178 Miles
Routing	Parallel to existing Westwing to South line.
Purpose	To deliver power and energy from major TEP interconnections in the Northwest Phoenix region.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Case # 15
Technical Studies	Studies conducted in coordination with neighboring utilities formed the basis for the design of TEP's original EHV system in the 70's. This project is based on that original work. Detailed studies will be developed in the future upon a determination of need for this project by TEP.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	TEP-Unisource Energy Services 345 kV Interconnection Line--South Substation to future Gateway Substation (2 ckts.)
Size	
a) Voltage	345-kV
b) Capacity	500 MW
c) Point of Origin	South Substation (Sec. 36 T16S R13E)
d) Points of Termination	Gateway Substation in (Sec. 12 T24S R13E)
e) Length	Approximately 60 Miles
Routing	Southerly from South Substation, near Sahuarita Arizona to Nogales area.
Purpose	To provide an alternate transmission path to UNS Electric in Nogales, Arizona pursuant to ACC Order.
Date	
a) Construction Start	Dependent upon permitting
b) In-Service Date	Dependent upon permitting
Is Certificate Necessary	Case #111
Technical Studies	See record of Siting Case No. 111

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Gateway Substation to Comision Federal de Electricidad (CFE) (2 ckts.)
Size	
a) Voltage	345-kV
b) Capacity	500 MW
c) Point of Origin	Gateway Substation (Sec. 12 T24S R13E)
d) Points of Termination	Arizona-Sonora boundary (Sec. 13 T24S R13E)
e) Length	Approximately 2 Miles
Routing	Southerly from Gateway Substation, in or near the Nogales area.
Purpose	To interconnect to the Comision Federal de Electricidad in Sonora, Mexico.
Date	
a) Construction Start	Dependent upon permitting
b) In-Service Date	Dependent upon permitting
Is Certificate Necessary	Case #111
Technical Studies	See record of Siting Case No. 111

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Irvington Substation to East Loop Substation (through 22nd Street Substation).	
Size		
a) Voltage	138-kV	
b) Capacity	System dependent	
c) Point of Origin	Irvington Substation (Sec. 03 T15S R14E)	
d) Point of Termination	East Loop Substation (Sec. 08 T14S R15E)	
e) Length	9 Miles	
Routing	North and East of Irvington Substation, through 22nd Street Substation, then East and North to East Loop Substation.	
Purpose	To provide additional electric service to the central area of TEP's service area and to reinforce the local transmission system.	
Date		
a) Construction Start	1985	
b) In-Service Date	Phase 1 – 1994 (Completed)	Irvington Station to 22nd St. Substation
	Phase 2 – 2000 (Completed)	22nd St. to East Loop Substation
	Phase 3 – Under Review	2nd Circuit of Phase I
Is Certificate Necessary	Case #66	

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Vail Substation to East Loop Substation (through Houghton Loop Switching Station*, Spanish Trail and Roberts Substations).	
Size		
a) Voltage	138-kV	
b) Capacity	System dependent	
c) Point of Origin	Vail Substation (Sec. 4 T16S R15E)	
d) Point of Termination	East Loop Substation (Sec. 8 T14S R15E)	
e) Length	22 Miles	
Routing	East and north from Vail Substation along existing transmission line to Irvington and Houghton Roads, then north along Houghton Road to Speedway Boulevard, then east and north to Roberts Substation and west along Speedway to East Loop Substation.	
Purpose	To provide additional electric service to the eastern portion of TEP's service area and to reinforce the local transmission system.	
Date		
a) Construction Start	1976	
b) In-Service Date	Phase 1 - 1977 (Completed)	Spanish Trail Substation to East Loop and Vail Substation
	Phase 2 - 1983 (Completed)	Roberts Substation and associated 138-kV lines
	Phase 3 – Under Review	Third 138-kV line from Vail to East Loop Substation
Is Certificate Necessary	Case #8	

*Houghton Loop switching station has been removed from TEP's plans. Name retained for reference only.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	East Loop Substation to Northeast Substation (through Snyder Substation)
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	East Loop Substation Sec. (8 T14S R15E)
d) Point of Termination	Northeast Substation Sec. (28 T13S R14E)
e) Length	13 Miles
Routing	North and west of East Loop Substation, then south and west to termination point.
Purpose	To provide additional electric service to the northeastern area of TEP's service area.
Date	
a) Construction Start	1985
b) In-Service Date	Phase 1 - 1987 (Completed) — Snyder Substation and 138-kV line to East Loop Substation Phase 2 – 1999-2005 — 138-kV line from Snyder Substation to Northeast Substation **Interim line in service.** **Final completion date - 2007**
Is Certificate Necessary	Case #47

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop existing West Ina Substation to Tucson Station line through Del Cerro (formerly Sweetwater) Substation.
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 20 T13S R13E
d) Point of Termination	Sec. 20 T13S R13E
e) Length	Less than one mile
Routing	Loop existing line at Camino del Cerro and Santa Cruz River; west on Camino del Cerro into future Del Cerro Substation.
Purpose	To provide additional electric service to the western part of TEP's service area and to reinforce the local distribution system.
Date	
a) Construction Start	2006
b) In-Service Date	2007
Is Certificate Necessary	Case #62

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop existing Vail Substation to East Loop Substation line through future Pantano and Los Reales Substations.
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Phase 1: Sec. 24, T15S R15E Phase 2: Sec. 28, T14S R15E
d) Point of Termination	Phase 1: Sec. 24, T15S R15E Phase 2: Sec. 28, T14S R15E
e) Length	Substations are less than one span from the existing line.
Routing	Phase 1 Loop existing line east of Houghton Road and south of Valencia Road through Los Reales Substation. Phase 2 Loop existing line east of Pantano Road and south of Golf Links through Pantano Substation.
Purpose	To provide additional electric service to the eastern part of TEP's service area and to reinforce the local distribution system.
Date	
a) Construction Start	Phase 1 – 2001 Phase 2 - 2006
b) In-Service Date	Phase 1 – Completed Phase 2 - 2007
Is Certificate Necessary	No

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Extend 138-kV line from Midvale Substation through future Spencer Switchyard to future San Joaquin Substation.
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Midvale Substation (Sec. 3 T15S R13E)
d) Point of Termination	Future San Joaquin Substation (physical location to be determined)
e) Length	Approximately 20 miles
Routing	Reviewing use of common utility corridor and existing subtransmission
Purpose	To provide additional electrical service to the far western portion of TEP's service area and to reinforce the local distribution system.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Under Review (dependent upon use of federal and/or Tohono r/w)

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	South Substation to DeMoss Petrie Substation
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	South Substation (Sec. 36 T16S R13E)
d) Point of Termination	DMP Substation (Sec. 35 T13S R13E)
e) Length	Approximately 18 miles
Routing	Unknown
Purpose	To reinforce TEP's 138kV system and to provide additional service to the western part of TEP's service area.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	South Substation to Cyprus Sierrita Extension Switchyard through future Canoa Ranch (formerly Desert Hills) Substation and Green Valley Substation.
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	South Substation (Sec. 36 T16S R13E)
d) Point of Termination	Cyprus-Sierrita Extension Switchyard (Sec. 10 T18S R12E)
e) Length	Approximately 24 miles
Routing	Uses existing transmission, subtransmission, and overhead distribution route.
Purpose	To provide additional electrical service to southern area of TEP's service area and to reinforce the local transmission & distribution system.
Date	
a) Construction Start	1995
b) In-Service Date	Phase 1 -1997 (Completed) — South 138-kV line to Green Valley. Phase 2a -2006 (Completed) — 138-kV line from Green Valley to future Canoa Ranch Substation site Phase 2b- under review — Extend 138-kV line from Canoa Ranch Substation site to future Cyprus-Sierrita substation
Is Certificate Necessary	Case 84 (Extension requested in 2006 due to delayed load growth and condemnation issues)

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Rancho Vistoso Substation to future Catalina Substation
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Rancho Vistoso Substation (Sec. 36 T11S R13E)
d) Point of Termination	Future Catalina Substation (physical location to be determined)
e) Length	Approximately 3.5 Miles
Routing	Reviewing use of WAPA corridor
Purpose	To provide additional electrical service to far northern area of TEP's service area and to reinforce the local distribution system.
Date	
a) Construction Start	2008
b) In-Service Date	2009
Is Certificate Necessary	No

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop existing Irvington Station to Vail Substation #2 line through future University of Arizona Tech Park Substation.
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Vail – Irvington Corridor
d) Point of Termination	Future U of A Tech Park Substation (physical location to be determined)
e) Length	Approximately 5 miles of double-circuited line
Routing	Loop existing Irvington – Vail #2 line into future U of A Tech Park substation
Purpose	To provide additional electric service to the U of A Tech Park expansion and the southern part of TEP's service area.
Date	
a) Construction Start	2012
b) In-Service Date	2013
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Tortolita Substation – Rillito Substation 138 kV
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Tortolita 138 kV Substation
d) Point of Termination	Rillito 138 kV Substation
e) Length	24.5 miles
Routing	Unknown
Purpose	Required to fully utilize increased import capability of additional EHV capacity into Tortolita Substation (Pinal South – Tortolita).
Date	
a) Construction Start	2009
b) In-Service Date	2010
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Vail Substation – Cienega Substation – Mountain View (formerly Wentworth) Substation 138 kV
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Vail 138 kV Substation
d) Point of Termination	Mountain View 138 kV Substation
e) Length	7.5 miles
Routing	Utilize the existing Vail-Fort Huachuca/Vail-Spanish Trail 138 kV corridor between Vail substation and seven spans east of Wentworth Rd., then new double-circuit 138 kV northeast ~2.0 miles to proposed Cienega site. The proposed Mountain View station site is immediately adjacent to the Vail-Ft. Huachuca right-of-way, ~5.0 miles southeast of the Cienega station site. New right-of-way will need to be acquired between the Cienega and Mountain View sites.
Purpose	Required to serve load at the new Cienega 138/13.8 kV Substation located approximately 7.5 miles east-southeast of the Vail Substation, and the future Mountain View 138/13.8 kV Substation located approximately 5.0 miles southeast of the Cienega Substation
Date	
Cienega	
a) Construction Start	2008
b) In-Service Date	2009
Mountain View	
a) Under review	
b) Under review	
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Northeast – Snyder 138 kV – tap for Craycroft-Barril substation
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Northeast 138 kV Substation
d) Point of Termination	Snyder 138 kV Substation
e) Length	8.0 miles
Routing	Existing Northeast-Snyder Corridor requires 1 span of wire to drop into station.
Purpose	Required to serve load at the new Craycroft-Barril 138/13.8 kV Substation locate approximately 2.75 miles northeast of the Northeast Substation
Date	
a) Construction Start	2010
b) In-Service Date	2011
Is Certificate Necessary	No

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Irvington – Tucson 138 kV – tap for Kino Substation
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Irvington 138 kV Substation
d) Point of Termination	Tucson 138 kV Substation
e) Length	10.9 miles
Routing	Existing Irvington-Tucson Corridor And ~ 3.0 miles of new double-circuit corridor north of Drexel along Kino Parkway to 36th St.
Purpose	Required to serve load at the new Kino 138/13.8 kV Substation located approximately 5.0 miles northwest of the Irvington Substation
Date	
a) Construction Start	2009
b) In-Service Date	2010
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Tortolita Substation – Marana Substation – North Loop Substation 138 kV
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Tortolita 138 kV Substation
d) Point of Termination	North Loop 138 kV Substation
e) Length	Tortolita – Marana ~11.0 miles Marana - North Loop ~9.0 miles
Routing	approximately 20 miles of new corridor between Tortolita and North Loop 138 kV substations located to the west of I-10
Purpose	Required to serve load at the new Marana 138/13.8 kV Substation located approximately 9.0 miles south-southeast of the Tortolita Substation
Date	
a) Construction Start	2010
b) In-Service Date	2011
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Tortolita – Rancho Vistoso 138 kV – tap for Naranja Substation
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Tortolita 138 kV Substation
d) Point of Termination	Rancho Vistoso 138 kV Substation
e) Length	22.3 miles
Routing	Existing Tortolita-Rancho Vistoso corridor and approximately 1.5 miles of new double-circuit 138 kV right-of-way between the Tortolita-Rancho Vistoso corridor south along Thornydale to the substation site near Naranja Rd.
Purpose	Required to serve load at the new Naranja 138/13.8 kV Substation located approximately 4.8 miles west-southwest of the Rancho Vistoso Substation
Date	
a) Construction Start	2009
b) In-Service Date	2010
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	DeMoss Petrie Substation – Tucson Substation 138 kV
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	DeMoss Petrie 138 kV Substation
d) Point of Termination	Tucson 138 kV Substation
e) Length	4.5 miles
Routing	existing DeMoss Petrie – Tucson 46 kV corridor
Purpose	Required to eliminate localized voltage instability specific to loss of both the North Loop-West Ina and Irvington-Tucson 138 kV circuits. By 2010, the existing 46 kV tie between DMP and Tucson Stations is unable to support voltage of the Tucson and West Ina load during this contingency.
Date	
a) Construction Start	2009
b) In-Service Date	2010
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Element Designation	Northeast 138 kV Static Var Compensator (SVC)
Size	
a) Voltage	138-kV
b) Capacity	-75 to +200 MVAr
c) Location	Northeast 138 kV Substation
Purpose	The SVC is being installed to reduce, and in some cases eliminate, the need for direct load tripping required for stable operation during system contingencies. As a dynamic VAr source, the SVC also reduces the amount of generation that would otherwise have to run to provide these dynamic VArs
Date	
a) Construction Start	2007
b) In-Service Date	2008
Is Certificate Necessary	No

UNS Electric

Ten-Year Plan
For Years

2007-2016

SUBMITTED TO THE
ARIZONA CORPORATION COMMISSION
JANUARY 2007

Docket No: E-00000D-05-0040

Table of Contents

Introduction

The following ten-year plan is submitted by UNS Electric, Inc. (UNSE) 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.

UNSE plans include several transmission projects in the next ten years. The majority of the system upgrades are planned for the Santa Cruz service territory, while one planned facility upgrade and one project are identified for the Mohave County region. Previously reported facilities that have been completed, canceled, or deferred beyond the upcoming ten-year period are not included. These plans are tentative information only, and pursuant to A.R.S. § 40-360.02 (F) are subject to change.

The following projects are proposed for the Mohave County Region:

- North Havasu – Griffith Transmission Line

The following projects are proposed for the Santa Cruz County Region:

- Nogales 115 kV or 138 kV Transmission Line #2
- Gateway 345/115 kV or 345/138 kV Substation
- Valencia 115 kV or 138 kV Substation Expansion
- Upgrade existing 115 kV transmission system to 138 kV

In addition to planning UNSE transmission facilities, UNSE is actively involved in the following regional Arizona Transmission planning activities:

- Central Arizona Transmission Study (CATS)
- Central Arizona Transmission Study – High Voltage (CATS-HV)
- Joint Planning Agreement (JPA) with Western
- Southwest Area Transmission Planning Group (SWAT)
- Southeast Arizona Transmission Study (SATS)

Service Territories

Following this brief discussion of activities in the service territories are maps of the planned facilities and a schematic for several of the proposed projects.

Mohave County

UNSE still considers the Griffith – North Havasu 230kV line as a viable alternative, and currently has a CEC (Case #88) for this line addition. UNSE has requested an extension in the expiration date of this CEC. The timing for construction of this project is predicated on results of studies being performed by the federal Western Area Power Administration (Western) that may show that the existing Western system is capable of meeting additional needs of UNSE in the near term. UNSE has requested an extension to the CEC expiration for this project based on information from Western indicating that the capacity of the existing system may have increased due to a re-conductor project that is underway. A portion of this project will be completed in 2007.

Santa Cruz County

The UNSE long-term plan to improve reliability for the Santa Cruz service territory is to construct a redundant transmission line to Valencia Substation from the new Gateway Substation per Case #111. The construction of this line is pending the receipt of permits from the Department of Energy, the U.S. Forest Service and the Bureau of Land Management.

UNSE installed an additional gas turbine in May 2006 at Valencia Substation in Nogales to provide peaking capability as well as additional support for Nogales during outages.

Plans are also under development for conversion of the existing 115kV line to 138kV with a future interconnection to TEP's Vail Substation.

Mohave County

UNS Electric

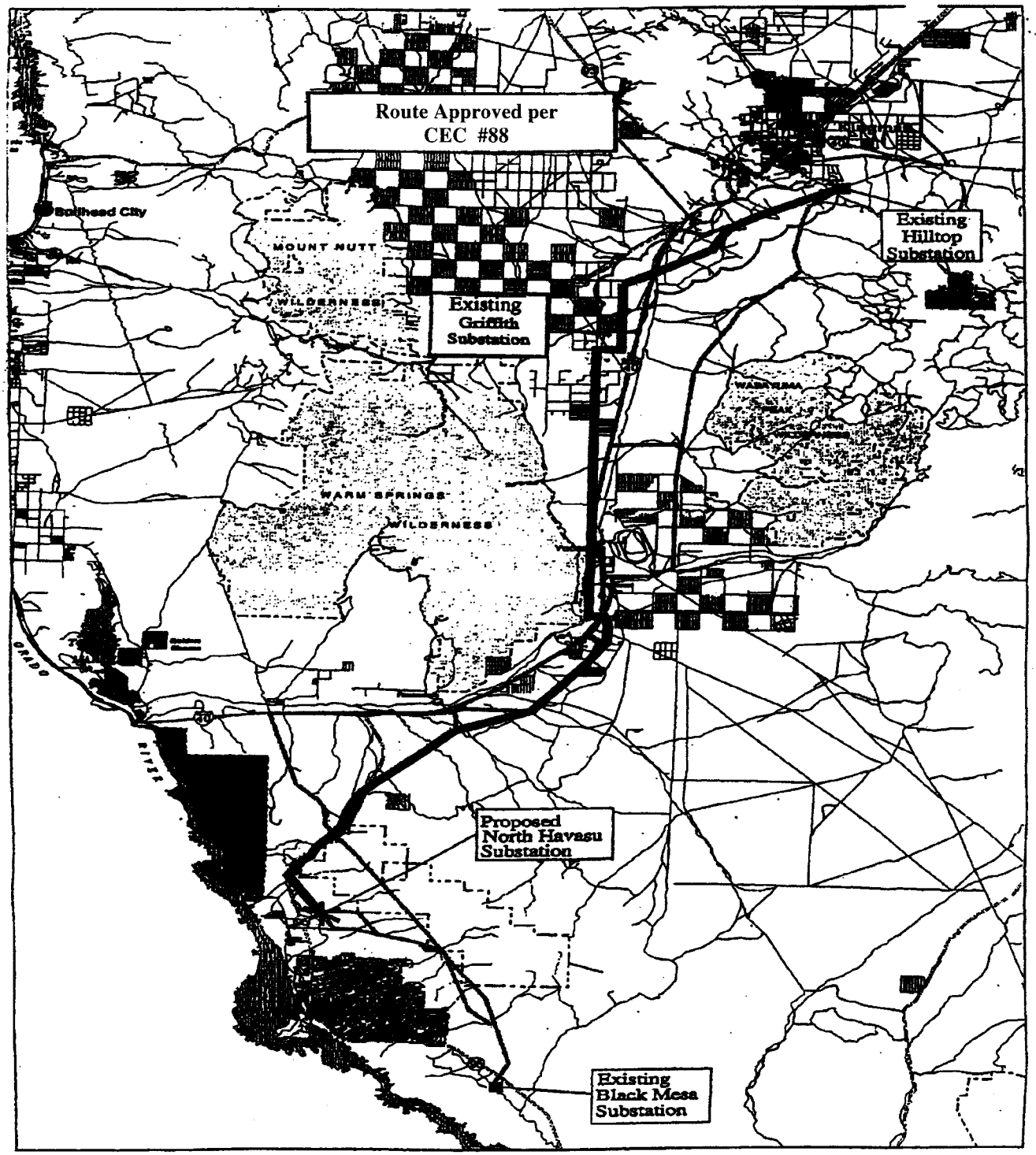
10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Griffith-North Havasu Transmission
Size	
a) Voltage	230 kV, 69 kV (double circuit)
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 Gem Acres 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 UNSE load centers in Mohave County.
Date	
a) Construction Start	North Havasu to Franconia, 2007
b) In-Service Date	Under Review
Is Certificate Necessary	Case # 88[1] -- An extension has been requested from the ACC
Technical Studies	Studies completed via CATS, WATS, and Palo Verde–Southeast Station study groups.

[1] Hilltop to Griffith portion of line already completed.

Griffith – North Havasu Transmission Project



UNS Electric

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	White Hills Substation
Size	
a) Voltage	345 kV, 69 kV
b) Capacity	300 MVA (transformer capacity)
c) Point of Origin	n/a
d) Point of Termination	n/a
e) Length	n/a
Routing	n/a
Purpose	To provide service to developments anticipated in Northwestern Mohave County.
Date	
a) Construction Start	2008
b) In-Service Date	2009
Is Certificate Necessary	No, this substation will be built adjacent to WAPA transmission line
Technical Studies	Studies in progress by WAPA as required through the Open Access Transmission Tariff process.

Santa Cruz County

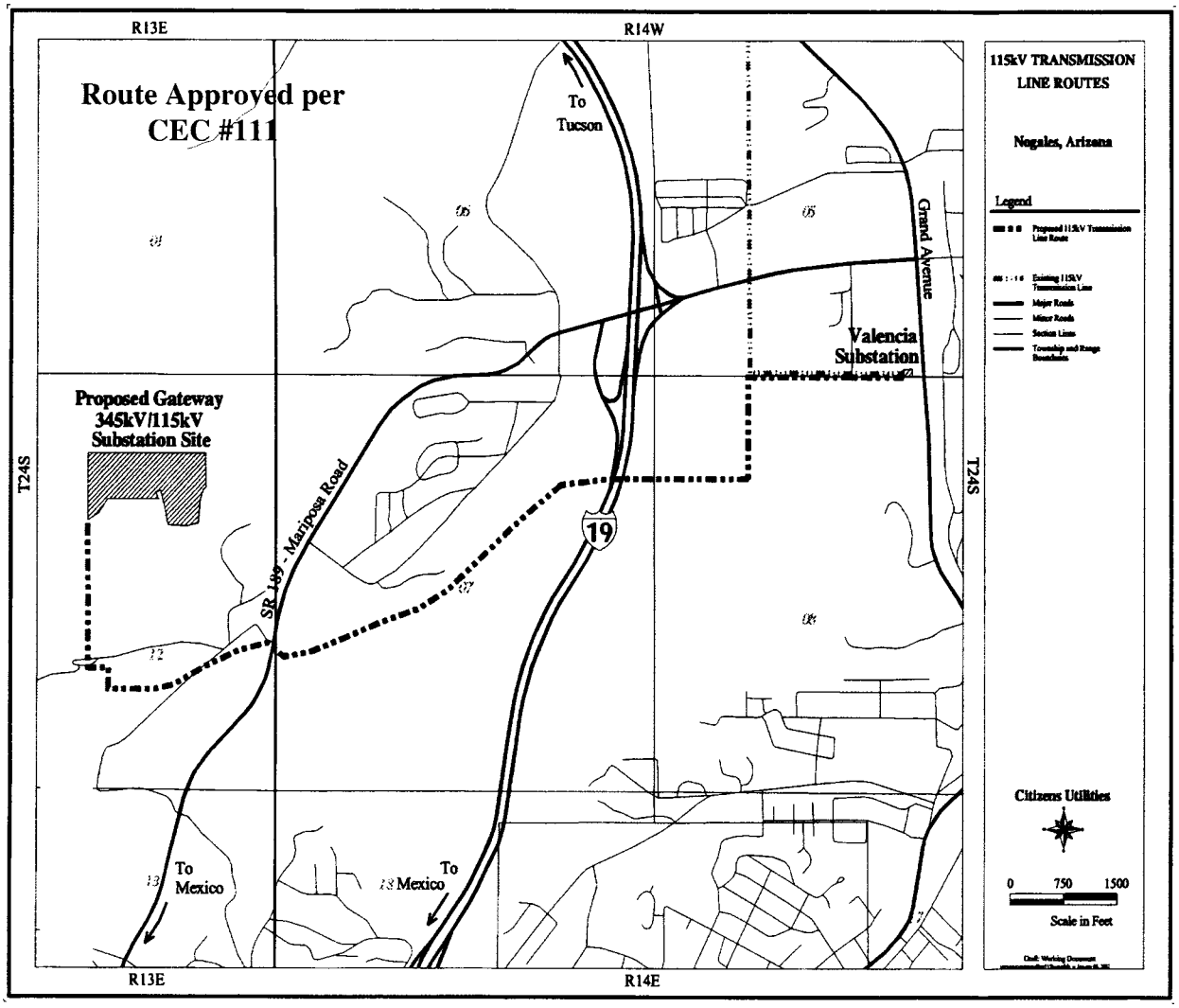
UNS Electric

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Nogales Transmission Line #2
Size	
a) Voltage	115 kV or 138 kV
b) Capacity	110 MVA (thermal)
c) Point of Origin	Gateway 138 kV substation (new)
d) Point of Termination	Valencia Substation
e) Length	Approximately 3 miles
Routing	Generally South and East from TEP's proposed Gateway 345 kV substation crossing Interstate 19 and traversing private ROW. Routing to be within the corridor as described in the CEC.
Purpose	The additional transmission line increases transmission system reliability and provides additional load serving capacity to UNSE Santa Cruz Service Area.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Case # 111
Technical Studies	SWAT and internal UNSE studies.

Nogales Transmission Line #2



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	Gateway Substation
e) Length	Approximately 60 miles
Routing	Generally South and West from TEP's Vail 345 kV substation to UNSE's Valencia Substation.
Purpose	The upgrade of the transmission line increases transmission system reliability and provides additional load serving capacity to UNSE's Santa Cruz Service Area.
Date	
a) Construction Start	2009
b) In-Service Date	2013
Is Certificate Necessary	Yes
Technical Studies	UNSE studies.

UNS Electric

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Valencia 115kV Substation Expansion
Size	
a) Voltage	Operating voltages include 115 kV and 13.2 kV Future voltage will be 138 kV
b) Capacity	110 MVA (line capacity)
c) Point of Origin	n/a
d) Point of Termination	n/a
e) Length	n/a
Routing	n/a
Purpose	The proposed substation facilities provide an interconnection and source for UNSE's second transmission line to its Santa Cruz Service Area and a future distribution substation, as provided for in CEC.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Case # 111
Technical Studies	Studied in SWAT and internal UNSE study efforts.

UNS Electric

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Gateway 345/115 kV or 345/138 kV Substation
Size	
a) Voltage	Operating voltages include 345, 115 or 138, and 13.2 kV
b) Capacity	100 MVA
c) Point of Origin	n/a
d) Point of Termination	n/a
e) Length	n/a
Routing	Unknown
Purpose	The proposed substation facilities provide an interconnection and source for UNSE's second transmission line to its Santa Cruz Service Area and a future distribution substation, as provided for in CEC..
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Case # 111 (see also TEP 10-year plan)
Technical Studies	Studied in SWAT and internal UNSE study efforts.

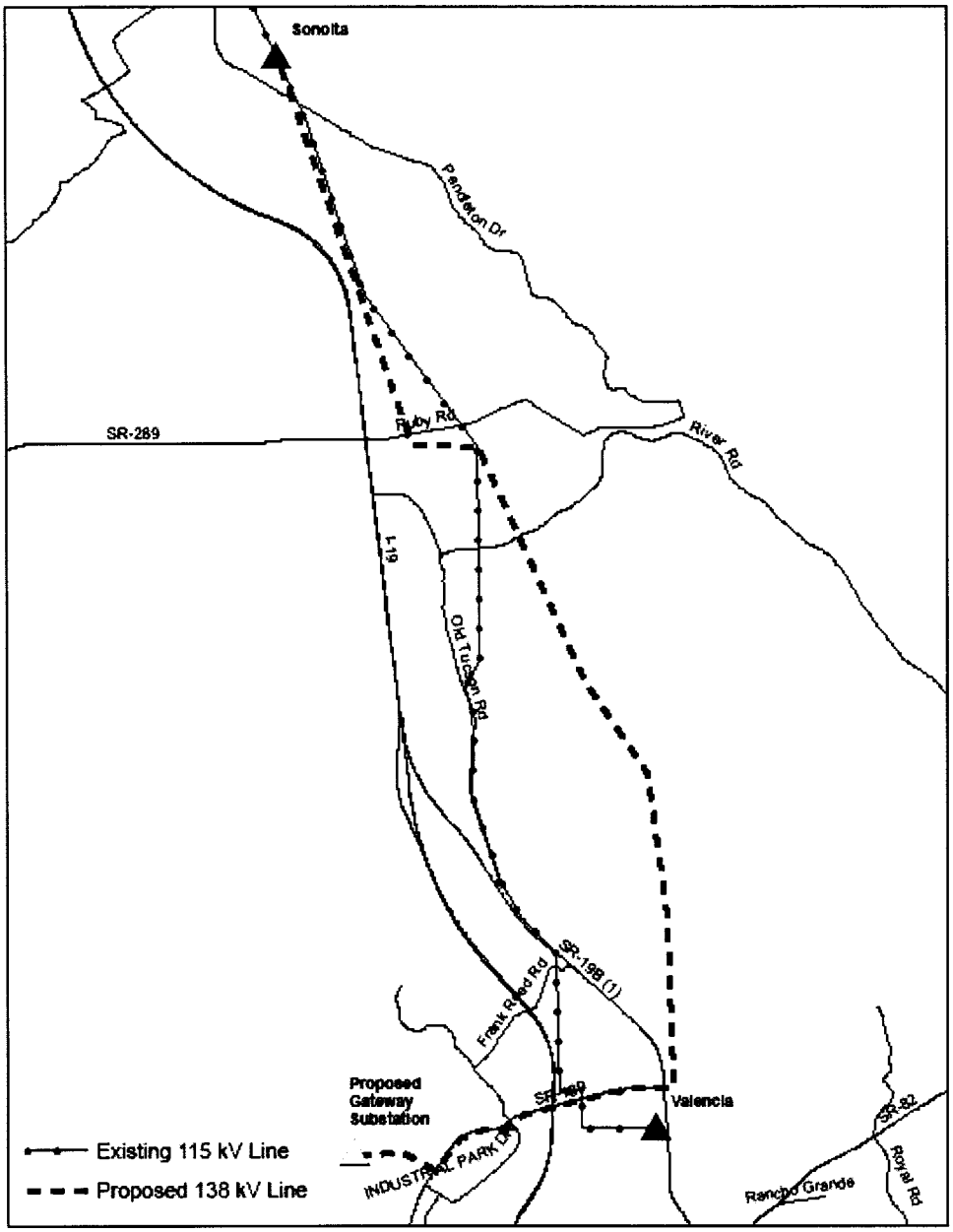
UNS Electric

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Gateway – Sonoita 138 kV Transmission Line
Size	
a) Voltage	138 kV
b) Capacity	System Dependent
c) Point of Origin	Gateway Substation
d) Point of Termination	Sonoita Substation
e) Length	Approximately 10 miles
Routing	Unknown
Purpose	To provide additional transmission capacity in the Nogales area.
Date	
a) Construction Start	Under Review
b) In-Service Date	Under Review
Is Certificate Necessary	Yes
Technical Studies	UNSE study.

Proposed Gateway to Sonoita 138 kV Line



Data Sources:
UniSource, ADOT
Projection:
UTM Zone 12N NAD 1983 HARN

This map is for general planning purposes only.
TEP and UniSource makes no warranty of its accuracy

1:60,000
1 inch equals 5,000 feet
January 29, 2007

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