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ARIZONA CORPORATION COMMISSION

Tucson Electric Power Company

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Ed Beck, Supervisor
Transmission Planning and Administration (SC210)

AZ CORP COMMISSION
DOCUMENT CONTROL

January 31, 2002

Arizona Corporation Commission
Utilities Division
1210 West Washington
Phoenix, Arizona, 85007

E-00000D-02-0065

Gentlemen:

Enclosed are eight copies of a "Ten Year Plan" submitted by Tucson Electric Power Company (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 in the self addressed stamped envelope.

Sincerely,

Ed Beck
Supervisor, Transmission Planning and Administration

Arizona Corporation Commission

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TUCSON ELECTRIC POWER COMPANY
"TEN YEAR PLAN"
SUBMITTED TO THE
ARIZONA CORPORATION COMMISSION
JANUARY 2002

On-going transmission study efforts

Since submission of last year's Ten-year plan, TEP has continued an EHV transmission study with several other utilities within the state of Arizona. The study is called the Central Arizona Transmission System (CATS) Study and encompasses an area bounded by the Phoenix Metropolitan area to the north, Mexico to the south, the Palo Verde Generating Station and environs to the west and New Mexico to the east. This area includes Coolidge, Casa Grande, Eloy, Marana, Florence, Maricopa as well as the major metropolitan areas of Phoenix and Tucson. The study participants include Arizona Public Service, Salt River Project, Tucson Electric Power, Southwest Transmission Cooperative, Citizens Communications Company, Western Area Power Administration, and Arizona Corporation Commission staff. Several other utilities, independent power producers and other interested parties are also participating.

TEP is relying on this study to rank various transmission alternatives that could meet the needs for additional import capacity into Tucson.

The results of this study will be reported to the Arizona Corporation Commission when completed. The results of the initial phase of work have been filed by SRP in its 2002 Ten-year plan filing on behalf of all participants in the study. TEP plans to participate, in conjunction with other interested parties, in developing some or all of the transmission systems that result in meeting the stated objectives of the CATS study. In the meantime, the projects reported in this Ten Year Plan are those that TEP anticipates could meet load requirements in the future.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Saguaro Substation to Tortolita Substation.
Size	
a) Voltage	500-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 15 T10S R10E
d) Point of Termination	Sec. 14 T10S R10E
e) Length	1 Mile
Routing	Parallel to existing Saguaro to Tortolita line.
Purpose	To reinforce Tucson Electric Power Company's EHV system and to provide a higher capacity link for the flow of power from Saguaro Substation into TEP's service territory.
Date	
a) Construction Start	2002
b) In-Service Date	2003
Is Certificate Necessary	Under Study
Technical Studies	Need identified in 1980 through system studies at that time. TEP has updated studies available upon request.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Springerville Substation to Greenlee Substation.
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 34 T11N R30E
d) Point of Termination	Sec. 29 T5S R31E
e) Length	110 Miles - 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 Study
b) In-Service Date	Under Study
Is Certificate Necessary	Issued in 1975, 1977, 1982 and 1986
Technical Studies	Base 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	Sec. 23 T10S R10E
d) Point of Termination	Sec. 36 T16S R13E
e) Length	68 Miles
Routing	From Tortolita Substation south through Avra Valley to intersection with existing Westwing-South 345-kV transmission line, then parallel to existing line to South Substation.
Purpose	To reinforce Tucson Electric Power Company's EHV system and to provide a high capacity link for the flow of power in Southern Arizona.
Date	
a) Construction Start	Under study
b) In-Service Date	Under study
Is Certificate Necessary	Issued in 1980 and 1981
Technical Studies	Part of CATS study

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Westwing Substation to South Substation.
Size	
a) Voltage	345-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 12 T4N R1W
d) Point of Termination	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 Study
b) In-Service Date	Under Study
Is Certificate Necessary	No (Path established before 1971)
Technical Studies	Base 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-Citizens 345 kV Interconnection Line-- South Substation to future Gateway Substation and Arizona-Sonora boundary (2 ckts.)
Size	
a) Voltage	345-kV
b) Capacity	500 MW
c) Point of Origin	Sec. 36 T16S R13E (South Substation)
d) Points of Termination	Gateway Substation and Arizona-Sonora boundary in T24S R13E
e) Length	Approximately 70 Miles
Routing	Southerly from South Substation, located near Sahuarita Arizona to Nogales area.
Purpose	To provide an alternate transmission path to Citizen's Communication Company in Nogales, Arizona pursuant to ACC order. Line may also be used to interconnect to the Comision Federal de Electricidad in Sonora, Mexico.
Date	
a) Construction Start	Jan. 2003
b) In-Service Date	Dec. 2003
Is Certificate Necessary	Issued in January 2002
Technical Studies	See record of siting case 111

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop in of TEP Winchester Switchyard
Size	
a) Voltage	345-kV
b) Capacity	System Dependant
c) Point of Origin	Existing 345 kV line Northeast of Pomerene Arizona
d) Points of Termination	New Substation
e) Length	Less than 1 Mile
Routing	SouthEasterly from existing TEP 345 kV Greenlee to Vail transmission line.
Purpose	To provide for interconnection of Southwest Transmission Cooperative 230 kV line.
Date	
a) Construction Start	2003
b) In-Service Date	2004
Is Certificate Necessary	?
Technical Studies	TEP developing joint study with Southwest Transmission Cooperative

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	Sec. 03 T15S R14E	
d) Point of Termination	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 Tucson Electric Power Company's service area and to reinforce the local transmission system.	
Date		
a) Construction Start	1985	
b) In-Service Date	Phase 1 – 1994 (Completed)	Irvington Sta- tion to 22nd St. Substation
	Phase 2 – 2000 (Completed)	22nd St. Substation to East Loop Substation
	Phase 3 - 2010	2nd Circuit
Is Certificate Necessary	Issued - 1984	

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	Sec. 4 T16S R15E	
d) Point of Termination	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 Tucson Electric Power Company'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 and 138-kV lines to East Loop and Vail Substations.

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

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

Issued in 1973, 1976 and 1982

*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	Sec. 8 T14S R15E	
d) Point of Termination	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 Tucson Electric Power Company'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 dependent upon public improvements)	
Is Certificate Necessary	Issued 1980	

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop existing North Loop Substation to DeMoss Petrie Station line through Del Cerro (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 Sweetwater (Roger Road) and Santa Cruz River; west on Sweetwater Road through Del Cerro Substation.
Purpose	To provide additional electric service to the western part of Tucson Electric Power Company's service area.
Date	
a) Construction Start	2007
b) In-Service Date	2009
Is Certificate Necessary	Issued 1982

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop existing Irvington Station to Vail Substation line through Robert Bills - Wilmot Substation.
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 23 T15S R14E
d) Point of Termination	Sec. 36 T15S R14E
e) Length	4 Miles
Routing	Unknown
Purpose	To provide additional electric service to the south-central part of Tucson Electric Power Company's service area.
Date	
a) Construction Start	2004
b) In-Service Date	2005
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop existing Vail Substation to East Loop Substation line through 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 Tucson Electric Power Company's service area.
Date	
a) Construction Start	2001
b) In-Service Date	Phase 1 - 2001 Phase 2 - 2009
Is Certificate Necessary	No

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Extend 138-kV line from Midvale Substation to San Joaquin Substation.
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 3 T15S R13E
d) Point of Termination	Unknown
e) Length	Approximately 6.0 miles
Routing	Unknown
Purpose	To provide additional electrical service to the far western portion of Tucson Electric Power Company's service area and to reinforce the local distribution system.
Date	
a) Construction Start	Under Study
b) In-Service Date	Under Study
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	South Substation to DeMoss Petrie Station
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 36 T16S R13E
d) Point of Termination	Sec. 35 T13S R13E
e) Length	Approximately 18.0 miles
Routing	Unknown
Purpose	To reinforce Tucson Electric Power Company's 138kV system and provide additional service to the western part of Tucson Electric Power Company's service area.
Date	
a) Construction Start	Under Study
b) In-Service Date	Under Study
Is Certificate Necessary	Yes

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	South Loop Substation to Cyprus Sierrita through Green Valley Substation.	
Size		
a) Voltage	138-kV	
b) Capacity	System dependent	
c) Point of Origin	Sec. 36 T16S R13E	
d) Point of Termination	Sec. 10 T18S R12E	
e) Length	Approximately 24 miles	
Routing	Unknown	
Purpose	To provide additional electrical service to southern area of Tucson Electric Power Company's service area and to reinforce the local transmission system.	
Date		
a) Construction Start	1995	
b) In-Service Date	Phase 1 -1997 (Completed)	Green Valley 138-kV line to South Loop.
	Phase 2 -2005	138-kV line from Cyprus to Green Valley
Is Certificate Necessary	Issued 1995.	

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Rancho Vistoso Substation to Catalina Substation
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 36 T11S R13E
d) Point of Termination	Undetermined
e) Length	4 Miles
Routing	Unknown
Purpose	To provide additional electrical service to far northern area of Tucson Electric Power Company's service area and to reinforce the local distribution system.
Date	
a) Construction Start	2007
b) In-Service Date	2008
Is Certificate Necessary	Under Study

TUCSON ELECTRIC POWER COMPANY

10 YEAR PLAN

TRANSMISSION FACILITIES

Line Designation	Loop Green Valley Substation to Cyprus Sierrita Substation line through new Cyprus Raw Water substation
Size	
a) Voltage	138-kV
b) Capacity	System dependent
c) Point of Origin	Sec. 34 T18S R13E
d) Point of Termination	Sec. 34 T18S R13E
e) Length	Substation is less than one span from the existing line.
Routing	Loop Green Valley – Cyprus Sierrita line into Cyprus Raw Water Substation.
Purpose	To provide additional electric service to the extreme southern part of Tucson Electric Power Company's service area.
Date	
a) Construction Start	2007
b) In-Service Date	2009
Is Certificate Necessary	No