

Prepayment Funding Option
Summary of Data Requests from Customer Comments

1. Question: What steps have been taken over the last eleven years to rehabilitate the system south of Parker substation?

Response: See responses to questions #2, #4, #6 and #7.

2. Question: What are the annual maintenance costs over the last eleven years for the system south of Parker substation?

Response:

Transmission System: South of Parker Substation

	<u>Lines</u>	<u>Substations</u>	<u>RRADs</u>	<u>Total</u>
FY 1999	\$230,348	\$214,201	\$1,011,109	\$1,455,658
FY 2000	153,235	666,859	4,202,517	5,022,611
FY 2001	186,708	905,014	2,846,808	3,938,531
FY 2002	125,506	825,916	2,622,600	3,574,022
FY 2003	763,610	990,999	1,326,431	3,081,040
FY 2004	135,794	1,288,955	627,162	2,051,911
FY 2005	258,124	809,022	1,099,498	2,166,644
FY 2006	142,228	1,061,150	845,480	2,048,858
FY 2007	578,244	938,745	1,912,570	3,429,559
FY 2008	740,678	1,068,237	1,790,264	3,599,179
FY 2009	566,303	902,001	1,128,867	2,597,171
Total	\$3,880,780	\$9,671,099	\$19,413,305	\$32,965,184

3. Request: Please provide the annual amount of capital dollars spent on wood pole rehabilitation over the last eleven years for the Parker-Davis Project (P-DP).

Response:

Transmission Line RRADs

	<u>Wood Structures</u>	<u>Steel Structures</u>	<u>Total</u>
FY 1999	\$82,224	\$0	\$82,224
FY 2000	2,748,996	0	2,748,996
FY 2001	2,531,349	464	2,531,813
FY 2002	2,352,983	29	2,353,012
FY 2003	1,213,124	285,659	1,498,783
FY 2004	405,921	4,767	410,688
FY 2005	1,139,426	64,565	1,203,991
FY 2006	704,011	19,721	723,732
FY 2007	1,628,104	24,718	1,652,822
FY 2008	1,935,759	31,271	1,967,030
FY 2009	1,693,065	24,148	1,717,213
Total	\$16,434,961	\$455,341	\$16,890,302

4. Request: Please provide the number of steel structures that have been installed over the last twelve years for the P-DP.

Response:

Steel Structures Installed since FY 1998

<u>Line Sections</u>	<u>Voltage</u> ¹	<u>Number</u>	<u>Structure Type</u>
Gila-Gila Valley	34.5 kV	24	Monopoles ²
Bouse-Parker	161 kV	83	Steel H
Kofa-Bouse	161 kV	584	Steel H ³
Dome Tap-Kofa	161 kV	52	Steel H
Gila-Dome Tap	161 kV	50	Steel H
Blythe-Headgate Rock	161 kV	76	Steel H
Buck Boulevard-Blythe	161 kV	7	Monopoles
Gila-Knob	161 kV	66	Steel H
Casa Grande-Test Track	230 kV	100	Steel H
Test Track-Lone Butte	230 kV	30	Steel H
Apache-Tucson	230 kV	4	Steel H
Total		1072	

¹ Most 161 kV poles are light duty steel and not capable of higher voltages

² Double circuit with APS

³ Monopoles at Quartsite, AZ

5. Request: Please provide reliability metrics or outage data for the P-DP.

Response:

Unplanned Power Outages for FY 2009

<u>Outage Cause</u>	<u>Code</u>	<u>Total</u>
Weather		
Weather-Related Outages	WTHR	43
Customer Equipment		
Customer Transmission Line Failure/Damage	TLIN-C	7
Outage to WAPA System Caused by Outside Utility	OUTIL	8
WAPA Operated Customer Equipment (Not Our System)	NOS	12
		<u>27</u>
WAPA Equipment Failure/Damage		
Breaker/Switch Problem or Failure	BKR	2
Bus Damage/Lightning Arrestor Failure	BUSD	1
Capacitor Failure/Damage	CAP	0
Communication Equipment Failure	COM	0
Control Equipment Failure	CNTL	1
CT/PT Failure	CTPT	0
Protection Equipment Failure	PROT	1
Reactor Failure/Damage	REA	0
T-Line Failure/Damage (Conductor, Insulator, Tower)	TLIN-W	5
Transformer Failure	XFMR	0
		<u>10</u>

Unplanned Power Outages for FY 2009, cont'd.

System Interference/Conditions

Aircraft	AIR	0
Animals	ANIM	6
Fire/Smoke	FIRE	0
Other	OTH	0
Overload, Underfrequency, Load Unbalance, etc.	SYST	1
Trees/Vegetation	VEGA	0
Vandalism	VNDL	0
Vehicles	VEH	2
		9

Human Error

Design Error/Relay Setting Error	ER-DE	2
Error During New Equipment Installation	ER-NE	1
Error During Routine Maintenance	ER-MN	2
Error During Switching	ER-SW	3
		8

Unknown

Unknown Reason for Outage	UNK	25
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Total Outages 122

Note: Trip/close/trip faults listed separately only if time between trips is greater than one minute

6. Request: Please provide summary results from wood structure testing that supports the wood pole replacement program.

Response:

Summary of Wood Pole Testing Results

Line Section	Voltage	Month-Year	Number of Poles				Replaced	Percentage
			Tested	Failed	Damaged	Need		
Coolidge-ED2 No. 1	115 kV	Nov-07	140	4	15	19	13.6	
ED2-Saguaro	115 kV	Dec-07	583	53	116	169	29.0	
ED5-Saguaro	115 kV	Dec-07	311	32	86	118	37.9	
Coolidge-ED2 No. 2	115 kV	Dec-07	129	2	14	16	12.4	
Coolidge-Oracle	115 kV	Jan-08	786	77	207	284	36.1	
Saguaro-Tucson	115 kV	Jan-09	583	21	162	183	31.4	
Oracle-Saguaro	115 kV	Jan-09	320	22	98	120	37.5	
Casa Grande-ED5	115 kV	Oct-09	395	1	32	33	8.4	
Oracle-Tucson	115 kV	Dec-09	199	7	47	54	27.1	
Blythe-Knob	161 kV	Dec-09	850	20	100	120	14.1	
Dome Tap-Wellton Mohawk	161 kV	Jan-10	196	2	2	4	2.0	
Gila-Wellton Mohawk	161 kV	Feb-10	244	8	45	53	21.7	
Total			4736	249	924	1173	24.8	

7. Request: Please provide service life studies performed over the last eight years that relate to various segments of the P-DP.

Response:

The following is a list of wood pole line segments that studies have been conducted along with brief descriptions. Note that in many cases these "studies" did not result in formal reports but were used for internal budgeting purposes or other cost estimating efforts.

South of Parker Substation

Studies were performed on the 161-kV transmission system in 2008. Since then, efforts have been focused on scoping and estimating various lands, environmental and rebuild options.

Specifically, these studies included multiple field visits to investigate facilities and right-of-way conditions (access and encroachments). Interviews were conducted with maintenance and planning personnel along with research on contracts, realty, and environmental issues. Many rebuild scenarios with different combinations of voltages and circuits along with cost estimates were prepared for this part of the system.

South of Casa Grande

Similar to the South of Parker, significant study work was performed on the 115-kV transmission system in 2008. During the last two years, wood pole inspection and treatment has been completed on the following transmission line segments: Casa Grande – Empire, Empire – ED5, ED2 – ED5, ED5 – Saguaro (North & South), Saguaro – Tucson, and Saguaro – Oracle. The following transmission line segments are scheduled for wood pole inspection and treatment: Coolidge – ED2 (#1 & #2), Coolidge – Oracle, Oracle – Tucson and Tucson –Apache

Miscellaneous

Saguaro –Apache conceptual rating study (2006) to investigate issues related to increasing the rating of the 115-kV transmission system South of Saguaro.

Gila – Yuma Tap transmission line rebuild study (2007) to scope and estimate the rebuilding of this 34.5-kV circuit to 69-kV spacing.

Parker – Blythe #2 161-kV facility study (2007) to scope and estimate the relocation of seven H-frames due to a proposed retention project (McCoy Wash).

Saguaro – Marana Tap pole bracing study (2007) to investigate the condition of approximately one mile of 115-kV wood structures after significant flooding to determine if bracing would be necessary.

Rattlesnake – Tucson emergency structure replacement study (2007) to scope and estimate replacement of multiple wood H-frames with steel monopoles where the 115-kV circuit crosses the Santa Cruz River.

Parker – Planet Tap transmission line rebuild study (2007) to determine the field condition of this 69-kV circuit and justify a rebuild.

Tucson – Apache erosion control study (2008) to scope and estimate foundation reinforcements for over sixty 115-kV wood H-frames that have been undermined by erosion.

Blythe – Headgate Rock reconductor study (2008) to determine the need and estimate the cost to reconductor this 161-kV circuit.

Davis – Kingman Tap transmission line rebuild study (2009) to determine the need and estimate the cost to rebuild of this 69-kV circuit.

Gila – Gila Valley transmission line rebuild study (2009) to scope and estimate rebuilding the remaining portions of this 34.5-kV circuit (whatever wasn't done by APS or by the Gila-Yuma Tap project).

Gila – Sonora information study (2009) to research and determine ownership, condition of existing facilities and access road issues on this 69-kV circuit.