

Control Number: 50277



Item Number: 82

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SOAH DOCKET NO. 473-20-2278

DOCKET NO. 50277

APPLICATION OF EL PASO	§	
ELECTRIC COMPANY TO AMEND	§	BEFORE THE STATE OFFICE
ITS CERTIFICATE OF	§	
CONVENIENCE AND NECESSITY	§	OF
FOR AN ADDITIONAL GENERATING	§	
UNIT AT THE NEWMAN	§	ADMINISTRATIVE HEARINGS
GENERATING STATION IN EL PASO	§	
COUNTY AND THE CITY OF	§	
EL PASO	Š	
	-	

WORKPAPERS

OF

DAVID C. HAWKINS

FOR

EL PASO ELECTRIC COMPANY

MAY 2020

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हिंह है	Fända Unit 6	+-					-					ļ	-				
	& McDannell Project No. 101955	+	-	 					-				-				
	flőh Ásséssinéht & Life Extensión Ásséssment - 2027	+	-	 		-	 						-				
Dona	RION ASSESSMENT & LIFE EXTENSION ASSESSMENT - 2021	+-		 									-				
Sagri)	I, EXPERIULUTES and Maultenance Forecasts	+		-			┼──										
A) 29	sts are presented in 2018s; no inflation is included	+					-								 		
7111 00	sta are presented in 20100, no innation to included	+		-					-			-	-	-			
PRM	IBÉNTIAL / BRAFT	+					 						-	-			
OCIVI	DE INTIAC / DICAL I	+-		-			 										
FARIT	AL FORETHRITINGS (Presented in Shin)	+		+			-							<u> </u>	-		
DESCRI		1	CATEGORY	LAST	FREQUENCY	NEXT	TOTAL	2018	2019	2020	2021	2022	2023	2024	!	****	
4. BOIL		1	CAIRGORT	LASI	FREQUENCY	NEXT	IOIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	202
4. 5012	Inspect boiler safety valves regularly	Exp	Safety	Unknown	3	ASAP	\$300	\$100			\$100	ļ	ļ	\$100			
	Inspect penthouse boiler supports	Ехр	Industry Practice	Never	Once	ASAP	\$200				3100			\$100			
	Install new burners with FSSS standards	Cap	Safety	Never	Once	ASAP	\$480										
	Overhaul superheater attemperators	Cap	Required	Never	Once	Within 5 years*	\$600		\$600				_				
	Perform boiler chemical cleaning	Сар	Industry Practice	2011	6	ASAP	\$1,200		1111					\$600	i		
	Perform regular drum inspections	Exp	Industry Practice	Unknown	3	ASAP	\$300				\$100			\$100			
	Replace boiler tubing on an as needed basis	Cap	Required	N/A	3	Within 5 years*	\$3,000		\$1,000			\$1,000			\$1,000		
5 BOIL	ER AUXILIARY SYSTEMS																
ļ	Replace air heater cold end baskets	Cap	Industry Practice	2002	10	2022	\$400					\$400					
L	Replace air heater lube oil pumps	Cap	Required	Never	Once	Within 5 years*	\$80			\$80							
<u> </u>	Replace continuous blowdown tank	Cap	Required	Never	Once	Within 5 years*	\$500				\$500						
	Inspect and overhaul FD fan	Cap	Industry Practice	Unknown	Once	Within 5 years*	\$150		\$150								
	Replace entire sections of boiler casing in problematic locations	Cap	Safety	Never	Once	ASAP	\$800	\$800		!							
<u> </u>	Inspect stack	Exp	Industry Practice	Unknown	10	ASAP	\$100	\$100									
C CTEA	M TURBINE	+															
	Overhaul steam turbine	Сар	Indicate: Decates:	2006	6	ASAP	\$6,400		00.000						4		
-	Perform steam path audit & borescope inspection including LP shell	Ехр	Industry Practice Required	Unknown	Once	ASAP		6100	\$3,200						\$3,200		
	Replace rotor and blade ring seals at next overhaul	Сар	Required	Unknown	Once	Within 5 years*	\$300 \$1,000	\$300	\$1,000								
	Overhaul steam valves	Exp	Industry Practice	2007	4	ASAP	\$2,400		\$1,200				\$1,200				
\vdash	Overhedrateshii varves	EXP	MIDDSHY FIREMICE	2007	4	АЗИР	\$2,400		\$1,200				\$1,200				
7 HIGH	ENERGY PIPING SYSTEMS	_					1										
	Inspect main steam pipe support system	Ехр	Industry Practice	Unknown	1	ASAP	\$180	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	
	Make modifications to comply with highest value ASME TDP-1 guidelines	Cap	Industry Practice	Unknown	Once	Within 5 years*	\$300			\$300			7.0			720	
	Perform NDE condition assessment of energy piping	Exp	Industry Practice	2011	3	ASAP	\$330	\$110			\$110			\$110			
	Test extrados of feedwater piping sweeping elbows	Exp	Industry Practice	2011	3	ASAP	\$150	\$50			\$50			\$50			
										- 1						1	
	NCE OF PLANT															Ì	
\square	Refurbish BFP A	Cap	Required	2004	15	2019	\$250		\$250								
	Refurbish BFP B	Сар	Required	2004	15	2019	\$250		\$250								
	Replace BFP recirculation valves	Cap	Required	Never	Once	Within 5 years*	\$60			\$60		!			i		
	Refurbish circulating water pumps	Cap	Required	2011	Once	Within 5 years*	\$300				\$300						
	Re-line circulating water pipes	Exp	Required	Never	Once	Within 5 years	\$1,000					\$1,000					
	Replace bearing and re-commission lube oil system	Cap	Required	Never Never	Once	Within 5 years*	\$250		40.000			\$250					
	Replace the cooling tower Inspect the condenser and test it hydrostatically	Cap	Safety Industry Practice	Unknown	Once	Within 5 years*	\$3,000 \$200		\$3,000 \$200								
	Replace hogger and vacuum pump	Cap	Required	Never	Once	Within 5 years*	\$250		3200	\$250							
	Replace gas interrupting valves and regulators	Cap	Safety	Never	Once	ASAP	\$250	\$250		\$230					_		
	Investigate tube life and possibility of extraction inlet erosion	Exp	Industry Practice	Unknown	Once	ASAP	\$150	\$150							_		
	Replace one FWH tube bundles	Cap	Required	Never	Once	Within 10 years*	\$1,500	7150					\$1,500				
		Exp	Required	Never	Once	ASAP	\$30	\$30									
	Investigate if voids around drain may cause problems			Never	Once	Within 5 years*	\$500					\$500					
	Investigate if voids around drain may cause problems Overhaul crane and replace all motors and controls		Required									7	-				
	Overhaul crane and replace all motors and controls	Cap	Required	Never	Once			1		- 1		1					
	Overhaul crane and replace all motors and controls (RICAL AND CONTROLS		Required	Never	Once										-		
	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays		Industry Practice	Never	Once	Within 5 years*	\$400		\$400								
	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace station batteries	Cap Cap Cap	Industry Practice Industry Practice		Once 20	Within 5 years*	\$200		\$400						\$200		
	Overhaul crane and replace all motors and controls **RICAL AND CONTROLS** Replace medium voltage switchgear protection relays Replace station batteries Replace switchgear	Cap Cap Cap	Industry Practice Industry Practice Industry Practice	Never 2005 Never	Once 20 Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000		\$400			\$2,000			\$200		
	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace station batteries Replace switchgear Replace switchgear Replace oxiting exciter with static exciter	Cap Cap Cap Cap	Industry Practice Industry Practice Industry Practice Industry Practice	Never 2005 Never Never	Once 20 Once Once	Within 5 years* 2025 Within 5 years* Within 5 years*	\$200 \$2,000 \$500					\$2,000 \$500			\$200		
	Overhaul crane and replace all motors and controls (RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace station batteries Replace switchgear Replace onginal exciter with static exciter Replace onginal exciter with static exciter	Cap Cap Cap Cap Cap	Industry Practice Industry Practice Industry Practice Industry Practice Industry Practice	Never 2005 Never Never Unknown	Once 20 Once Once Once	Within 5 years* 2025 Within 5 years* Within 5 years* Within 5 years*	\$200 \$2,000 \$500 \$200		\$400						\$200		
	Overhaul crane and replace all motors and controls **RICAL AND CONTROLS** Replace medium voltage switchgear protection relays Replace station batterness Replace switchgear Replace onginal exciter with static exciter Refurbish BFP motors Refurbish Groulating water pump motors	Cap Cap Cap Cap Cap Cap	Industry Practice Industry Practice Industry Practice Industry Practice Industry Practice Industry Practice	Never 2005 Never Never Unknown Unknown	Once 20 Once Once Once Once	Within 5 years* 2015 years* Within 5 years* Within 5 years* Within 5 years*	\$200 \$2,000 \$500 \$200 \$200			\$200					\$200		
	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace sation batteries Replace switchgear Replace switchgear Replace original evoter with static exciter Refurbish BFP motors Refurbish dirculating water pump motors Refurbish circulating water pump motors	Cap Cap Cap Cap Cap Cap Cap	Industry Practice Industry Practice Industry Practice Industry Practice Industry Practice Industry Practice Industry Practice	Never 2005 Never Never Unknown Unknown	Once 20 Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200			\$200	\$200	\$500			\$200		
	Overhaul crane and replace all motors and controls (RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace station batteries Replace switchgear Replace switchgear Replace onginal exciter with static exciter Replace onginal exciter with static exciter Refurbish EPF motors Refurbish Circulating water pump motors Refurbish Circulating water pump motors Refurbish Circulating mater pump motors	Cap Cap Cap Cap Cap Cap Cap Cap	Industry Practice	Never 2005 Never Never Unknown Unknown Unknown Unknown	Once 20 Once Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200 \$100			\$200	\$200				\$200		
	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace switch batteries Replaces switchgear Replaces ownigh exciter with static exciter Refurbish EPF motors Refurbish EPF motors Refurbish circulating water pump motors Refurbish to replace pump motors Refurbish EP fan motor	Cap	Industry Practice	Never 2005 Never Never Unknown Unknown Unknown Unknown Unknown	Once 20 Once Once Once Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200 \$100 \$500			\$200	\$200	\$500	\$500		\$200		
	Overhaul crane and replace all motors and controls (RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace station batteries Replace switchgear Replace switchgear Replace onginal exciter with static exciter Replace onginal exciter with static exciter Refurbish EPF motors Refurbish Circulating water pump motors Refurbish Circulating water pump motors Refurbish Circulating mater pump motors	Cap Cap Cap Cap Cap Cap Cap Cap	Industry Practice	Never 2005 Never Never Unknown Unknown Unknown Unknown	Once 20 Once Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200 \$100			\$200	\$200	\$500	\$500 \$500		\$200		
	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace switch batteries Replaces switchgear Replaces ownigh exciter with static exciter Refurbish EPF motors Refurbish EPF motors Refurbish circulating water pump motors Refurbish to replace pump motors Refurbish EP fan motor	Cap	Industry Practice	Never 2005 Never Never Unknown Unknown Unknown Unknown Unknown	Once 20 Once Once Once Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200 \$100 \$500			\$200	\$200	\$500			\$200		
	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace switch pateries Replace switchgear Replace switchgear Replace original exoter with static exciter Refurbish BPF motors Refurbish original exoter with static exciter Refurbish original exoter pump motors Refurbish conditions water pump motors Refurbish to flan motor Upgrade CEMS Upgrade Substation breaker	Cap	Industry Practice	Never 2005 Never Never Unknown Unknown Unknown Unknown Unknown	Once 20 Once Once Once Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200 \$100 \$500 \$500		\$200			\$500	\$500				
TOTAL	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace switch batteries Replace switchgear Replace switchgear Replace original exciter with static exciter Refurbish BFP motors Refurbish chicalisting water pump motors Refurbish condensate pump motors Refurbish C	Cap	Industry Practice	Never 2005 Never Never Unknown Unknown Unknown Unknown Unknown	Once 20 Once Once Once Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200 \$100 \$500 \$500 \$500	52,130	\$200 \$10,050	\$890	\$1,000	\$500 \$100 \$4,750	\$500	\$600	\$4,400	50	So
TOTAL	Overhaul crane and replace all motors and controls RICAL AND CONTROLS Replace medium voltage switchgear protection relays Replace switch pateries Replace switchgear Replace switchgear Replace original exoter with static exciter Refurbish BPF motors Refurbish original exoter with static exciter Refurbish original exoter pump motors Refurbish conditions water pump motors Refurbish to flan motor Upgrade CEMS Upgrade Substation breaker	Cap	Industry Practice	Never 2005 Never Never Unknown Unknown Unknown Unknown Unknown	Once 20 Once Once Once Once Once Once Once Once	Within 5 years* 2025 Within 5 years*	\$200 \$2,000 \$500 \$200 \$200 \$200 \$100 \$500 \$500	\$2,130 \$1,160 \$3,290	\$200			\$500	\$500	\$600 \$380 \$980		\$0 \$20 \$20 \$20	\$00 \$00 \$00

El Paso Electric, In Rio Grande Unit 7			T	T												
	ig.	-														
Burns & McDonnel	Il Protect No. 101955															
Condition Assessi	nent & Life Extension Assessment - 2027															
Canital Expanditus	see and Maintananae Foregoite		The state of the s													
	es and Maintenance Forecasts															
All costs are prese	nted in 2018\$; no inflation is included													_		
CAPITAL EXPENDI	THRES (Presented in \$888)			-		-										
	TURES (Presented in 9000)		LAST		NEXT	TOTAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	202
DESCRIPTION BOILER & HIGH ENERGY	ANDING	TYPE	LAST	FREQUENCY	NEXT	TOTAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	202
BUILER & HIGH ENERGY	Regular boiler piping replacements	Сар	N/A	3 yrs	When due	\$3,000	-	\$1,000			\$1,000		-	\$1,000		
	Main steam piping replacement	Сар	N/A	Once	Within 5 yrs*	\$2,000		\$2,000			7-7-1-			4.0,000		
	NDE of selected areas	Сар	N/A	3yrs	ASAP	\$330	\$110			\$110			\$110			
	Replace air heater cold end baskets	Сар	2011 (insp.)	10 yrs	Within 5 yrs*	\$400	\$400									
TURBINE GENERATOR																
	STG Major Inspection	Cap	2005 2005	6 yrs	ASAP ASAP	\$3,200 \$3,200	\$1,600 \$1,600			-			\$1,600 \$1,600			
	STG Major Inspection ST blades/valve repl./repairs	Cap	N/A	6 yrs Once	Next major	\$2,000	\$2,000						\$1,000			-
	Valve Inspection	Exp	2016	4 yrs	When due	\$2,400	92,000		\$1,200				\$1,200			
	Generator rewind	Cap	N/A	Once	ASAP	\$3,500				\$3,500			1.7			
	Comply with TDP-1	Cap	N/A	Once	ASAP	\$300	\$300									
BALANCE OF PLANT																
	Reburbish cooling tower	Exp	N/A	Once	Within 5 yrs*	\$1,500		\$1,500				-				
	Add liner to UG circulating water pipe Replace FW heater tube bundles	Exp	N/A N/A	Once	Within 5 yrs* Within 5 yrs*	\$1,000 \$1,500		\$1,000	\$1,500	-	-			-	-	
	Condenser retubing	Cap	Unknown	Once	Within 5 yrs*	\$1,500			\$1,500							
	Allowance for major pump/fan work	Exp	N/A	Once	Within 5 yrs*	\$1,000			44,000		\$1,000					1 -
ELECTRICAL & CONTROL	ıs															
	Switchgear upgrade	Cap	N/A	Once	Within 5 yrs*	\$2,000		\$2,000								
	Replace station batteries	Cap	2005	20 yrs	When due	\$200			,					\$200		
TOTAL	Replace unit aux. transformers	Сар	N/A	Once	Within 5 yrs*	\$500		_		\$500				_		
TOTAL	TOTAL - Capital	_			\$000	\$20,430	\$4,410	\$5,000	\$3,000	\$4,110	\$1,000	\$0	\$1,710	\$1,200	\$0	\$
	TOTAL - Non Recurring O&M				\$000	\$9,100	\$1,600	\$2,500	\$1,200	\$0		\$0	\$2,800	\$0	\$0	
	TOTAL				\$000	\$29,530	\$6,010	\$7,500	\$4,200	\$4,110	\$2,000	\$0	\$4,510	\$1,200	\$0	
	*Distrubuted over years to spread out expense															
FIVEN ABERATION	E SAAINTEN ANGE EVOENNITURES INCOM	DICAL BACIC														
	S & MAINTENANCE EXPENDITURES - HISTO	MIENE BASIS			-	and the same of	r diseason for	-	Name of the Owner, or other Designation of the Owne	do-morror d	and the same				araniopico	ALC: UNKNOWN
DESCRIPTION		1 48		STATE OF THE PARTY		TOTAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	202
	Unit Capacity (Net Summer) Fixed O&M (\$/kW-yr)	\$26.60				444 744			44 000	\$1,277		4				
														\$1 277		
	Titled Court (3/KH-11)	720.00			\$000	\$12,768	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,27
	Taca dam (3/km-fr)	yeuno			100	\$12,768 Total (\$/kW)	\$1,277	\$1,277	\$1,2//	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,27
	TORGO COUNT (MYNTY TY)	920.00	Capital expenditures		Total (\$000) 20,430	Total (\$/kW) 615.21	\$1,277	\$1,277	\$1,277	31,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,27
	Takes Oder (g/km 31)	920.00	Maintenance		Total (\$000) 20,430 \$12,768	Total (\$/kW) 615.21 266	\$1,277	\$1,277	\$1,277	31,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,27
	inaco Octor (Mary 1)	920.00			Total (\$000) 20,430	Total (\$/kW) 615.21	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,27
EIVED OBERATION			Maintenance Tota		Total (\$000) 20,430 \$12,768	Total (\$/kW) 615.21 266	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,277	\$1,27
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS		Maintenance Tota		Total (\$000) 20,430 \$12,768	Total (\$/kW) 615.21 266 881										
FIXED OPERATION DESCRIPTION	S & MAINTENANCE EXPENDITURES - ADJUS	TED FOR AGE	Maintenance Tota		Total (\$000) 20,430 \$12,768	Total (\$/kW) 615.21 266	\$1,277	\$1,277	2020	2021	\$1,277	2023	\$1,277	\$1,277	\$1,277	
Contraction of the Contraction o		TED FOR AGE 48 1958	Maintenance Tota		Total (\$000) 20,430 \$12,768	Total (\$/kW) 615.21 266 881										
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS	TED FOR AGE	Maintenance Tota		Total (\$000) 20,430 \$12,768 \$33,198	Total (\$/kW) 615.21 266 881										202
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS Unit Capacity (Net Summer) Year in Service	TED FOR AGE 48 1958	Maintenance Tota		Total (\$000) 20,430 \$12,768	Total (\$/kW) 615.21 266 881	2018	2019	2020	2021	2022	2023	2024	2025	2026	202 \$29.7
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS [Unit Capacity (Net Summer) Year in Service O&M Aging Ratelyear	48 1958 1.25%	Maintenance Tota		Total (\$000) 20,430 \$12,768 \$33,198	Total (\$/kW) 615.21 266 881 TOTAL	2018 \$26.60 \$1,277	2019 \$26.93	2020 \$27.27	2021 \$27.61	2022 \$27.96	2023 \$28.30	2024 \$28.66	2025 \$29.02	2026 \$29.38	202 \$29.7
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS [Unit Capacity (Net Summer) Year in Service O&M Aging Ratelyear	48 1958 1.25%	Maintenance Tota BASED DEGRADATIO	N	Total (\$000) 20,430 \$12,768 \$33,198	Total (\$/kW) 615.21 266 881 TOTAL \$13,511 Total (\$/kW)	2018 \$26.60 \$1,277	2019 \$26.93	2020 \$27.27	2021 \$27.61	2022 \$27.96	2023 \$28.30	2024 \$28.66	2025 \$29.02	2026 \$29.38	202 : \$29.7!
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS [Unit Capacity (Net Summer) Year in Service O&M Aging Ratelyear	48 1958 1.25%	Maintenance Tota BASED DEGRADATIO Capital expenditures	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430	Total (\$/kW) 615.21 266 881 TOTAL \$13,511 Total (\$/kW) 426	2018 \$26.60 \$1,277	2019 \$26.93	2020 \$27.27	2021 \$27.61	2022 \$27.96	2023 \$28.30	2024 \$28.66	2025 \$29.02	2026 \$29.38	202 \$29.7
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS [Unit Capacity (Net Summer) Year in Service O&M Aging Ratelyear	48 1958 1.25%	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277	2019 \$26.93	2020 \$27.27	2021 \$27.61	2022 \$27.96	2023 \$28.30	2024 \$28.66	2025 \$29.02	2026 \$29.38	202 \$29.7
Contraction of the Contraction o	S & MAINTENANCE EXPENDITURES - ADJUS [Unit Capacity (Net Summer) Year in Service O&M Aging Ratelyear	48 1958 1.25%	Maintenance Tota BASED DEGRADATIO Capital expenditures	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430	Total (\$/kW) 615.21 266 881 TOTAL \$13,511 Total (\$/kW) 426	2018 \$26.60 \$1,277	2019 \$26.93	2020 \$27.27	2021 \$27.61	2022 \$27.96	2023 \$28.30	2024 \$28.66	2025 \$29.02	2026 \$29.38	202 \$29.7
DESCRIPTION	S & MAINTENANCE EXPENDITURES - ADJUS Unit Capacity (Net Summer) Year in Service OokM Aging Ratefyear Maintenance (S/XW-yr)	48 1958 1.25%	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277	2019 \$26.93	2020 \$27.27	2021 \$27.61	2022 \$27.96	2023 \$28.30	2024 \$28.66	2025 \$29.02	2026 \$29.38	202 \$29.7
DESCRIPTION	S & MAINTENANCE EXPENDITURES - ADJUS [Unit Capacity (Net Summer) Year in Service O&M Aging Ratelyear	48 1958 1.25%	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277	2019 \$26.93	2020 \$27.27	2021 \$27.61	2022 \$27.96	2023 \$28.30	2024 \$28.66	2025 \$29.02	2026 \$29.38	\$29.7' \$1,42
DESCRIPTION VARIABLE OPERAT	S & MAINTENANCE EXPENDITURES - ADJUS Unit Capacity (Net Summer) Year in Service O&M At aging Nate/year Maintenance (S/NW-yr) ION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer)	48 1958 1.25% \$26.60	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 526.60 \$1,277	2019 \$26.93 \$1,293	\$27.27 \$1,309	\$27.61 \$1,325	\$27.96 \$1,342	\$28.30 \$1,359	\$28.66 \$1,376	\$29.02 \$29.02 \$1,393	2026 \$29.38 \$1,410	\$29.7' \$1,42
DESCRIPTION VARIABLE OPERAT	Unit Capacity (Net Summer) Vear in Service O&M Aging Rate/year Maintenance (S/kW-yr) ION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer)	48 1958 1.25% \$26.60	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277	2019 \$26.93 \$1,293	\$27.27 \$1,309	2021 \$27.61 \$1,325	2022 \$27.96 \$1,342	\$28.30 \$1,359	\$28.66 \$1,376	\$29.02 \$1,393	2026 \$29.38 \$1,410	\$29.7 \$1,42
DESCRIPTION VARIABLE OPERAT	Unit Capacity (Net Summer) Vear in Service OSM Aging Falter/year Maintenance (S/W-yr) IION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer)	48 1958 1.25% \$26.60	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277 2018	2019 \$26.93 \$1,293 2019	2020 \$27.27 \$1,309 2020 \$4.68	2021 \$27.61 \$1,325 2021	2022 \$27.96 \$1,342 2022 \$4.68	2023 \$28.30 \$1,359 2023 \$4.68	2024 \$28.66 \$1,376 2024 \$4.68	\$29.02 \$1,393 2025 \$4.68	2026 \$29.38 \$1,410 2026	202 \$29.7' \$1,42:
DESCRIPTION VARIABLE OPERAT	Unit Capacity (Net Summer) Vear in Service O&M Aging Rate/year Maintenance (S/kW-yr) ION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer)	48 1958 1.25% \$26.60	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277	2019 \$26.93 \$1,293 2019	2020 \$27.27 \$1,309 2020 \$4.68	2021 \$27.61 \$1,325 2021	2022 \$27.96 \$1,342 2022 \$4.68	2023 \$28.30 \$1,359 2023 \$4.68	2024 \$28.66 \$1,376 2024 \$4.68	\$29.02 \$1,393	2026 \$29.38 \$1,410	202 \$29.7' \$1,42:
DESCRIPTION VARIABLE OPERAT	Unit Capacity (Net Summer) Vear in Service OSM Aging Falter/year Maintenance (S/W-yr) IION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer)	48 1958 1.25% \$26.60	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277 2018	2019 \$26.93 \$1,293 2019	2020 \$27.27 \$1,309 2020 \$4.68	2021 \$27.61 \$1,325 2021	2022 \$27.96 \$1,342 2022 \$4.68	2023 \$28.30 \$1,359 2023 \$4.68	2024 \$28.66 \$1,376 2024 \$4.68	\$29.02 \$1,393 2025 \$4.68	2026 \$29.38 \$1,410 2026	202 \$29.7 \$1,42 202 \$4.6
VARIABLE OPERAT	Unit Capacity (Net Summer) Vear in Service OSM Aging Falter/year Maintenance (S/W-yr) IION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer)	48 1958 1.25% \$26.60	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (\$000) 20,430 \$12,768 \$33,198 \$000 Total (\$000) 20,430 \$13,511	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277 2018	2019 \$26.93 \$1,293 2019	2020 \$27.27 \$1,309 2020 \$4.68	2021 \$27.61 \$1,325 2021	2022 \$27.96 \$1,342 2022 \$4.68	2023 \$28.30 \$1,359 2023 \$4.68	2024 \$28.66 \$1,376 2024 \$4.68	\$29.02 \$1,393 2025 \$4.68 \$476,219	\$29.38 \$1,410 2026 \$4.68 \$476,219	\$29.7 \$1,42 202 \$4.6 \$476,21
DESCRIPTION VARIABLE OPERAT	Unit Capacity (Net Summer) Vear in Service OSM Aging Falter/year Maintenance (S/W-yr) IION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer)	48 1958 1.25% \$26.60 UNITS 48 24.2% \$4.68	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (5000) 512,768 533,198 5000 Total (5000) 20,430 20,430 333,941	Total (\$/kw) 615.21 266 881 TOTAL \$13,511 Total (\$/kw) 426 281	2018 \$26.60 \$1,277 2018 \$4.68 \$476,219	2019 \$26.93 \$1,293 2019 \$4.68 \$476,219	\$27.27 \$1,309 2020 \$4.68 \$476,219	\$27.61 \$1,325 2021 2021 \$4.68 \$476,219	\$27.96 \$1,342 2022 \$4.68 \$476,219	\$28.30 \$1,359 2023 \$4.68 \$476,219	\$28.66 \$1,376 2024 2024 \$4.68 \$476,219	\$29.02 \$1,393 2025 \$4.68	2026 \$29.38 \$1,410 2026	202 \$29.7 \$1,42 202 \$4.6 \$476,21
VARIABLE OPERAT	S & MAINTENANCE EXPENDITURES - ADJUS Unit Capacity (Net Summer) Year in Service OSM Aging Bater/year Maintenance (\$/\$W-yr) ION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer) Annual Variable O&M Costs (\$/\$Whh) Annual Variable O&M Costs (\$/\$MWh) TOTAL - Capital TOTAL - Non Recurring O&M	48 1958 1.25% \$26.60 UNITS 48 24.2% \$4.68	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (5000) 20,430 512,768 533,198 5000 Total (5000) 20,430 513,511 533,941	Total (\$/kW) 615.21 266 8811 TOTAL 513,511 Total (\$/kW) 426 281 707	2018 \$26.60 \$1,277 2018 \$4.68 \$476,219 2016 \$4,410 \$1,600	2019 \$26.93 \$1,293 2019 \$4.68 \$476,219 2019 \$5,000	2020 \$27.27 \$1,309 2020 \$4.68 \$476,219 2020 \$3,000 \$1,200	2021 \$27.61 \$1,325 2021 \$4.68 \$476,219 2021 \$4,110	2022 \$27.96 \$1,342 2022 \$4.68 \$476,219 2022 \$1,000	2023 \$28.30 \$1,359 2023 \$4.68 \$476,219	2024 \$28.66 \$1,376 2024 \$4.68 \$476,219 2024 \$1,710 \$2,800	2025 \$1,393 2025 \$4.68 \$476,219 2025 \$1,200	2026 \$1,410 2026 \$4.68 \$476,219 2026 \$0 \$0 \$0	202 \$29,77,422 202 \$4,64,64 \$476,21 \$00 \$5,54
VARIABLE OPERAT	Unit Capacity (Net Summer) Year in Service OSM Aging Bratelyear Maintenance (S/kW-yr) JON & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Variable O&M Costs (S/Mwh) Annual Variable O&M Costs (S/Mwh) TOTAL - Capital TOTAL - Non Recurring O&M Fised O&M (dayted for age)	48 1958 1.25% \$26.60 UNITS 48 24.2% \$4.68	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (5000) 20,430 512,768 533,198 5000 Total (5000) 20,430 513,511 533,941	Total (\$/kW) 615.21 266 8811 TOTAL 513,511 Total (\$/kW) 426 2811 707	2018 \$26.60 \$1,277 2018 \$4.68 \$476,219 2018 \$4,410 \$1,600 \$1,277	\$26.93 \$1,293 \$1,293 \$4.68 \$476,219 \$5,000 \$2,500 \$1,293	2020 \$27.27 \$1,309 2020 \$4.68 \$476,219 2020 \$3,000 \$1,300	2021 \$1,325 2021 2021 \$4,68 \$476,219 2021 \$4,110 \$0 \$1,325	2022 \$27.96 \$1,342 2022 \$4.68 \$476,219 2022 \$1,000 \$1,000 \$1,342	2023 \$1,359 2023 2023 \$4,68 \$476,219 50 50 50 \$1,359	2024 \$28.66 \$1,376 2024 \$4.68 \$476,219 \$1,710 \$2,800 \$1,376	\$29.02 \$1,393 \$1,393 \$4.68 \$476,219 \$1,200 \$0 \$1,393	2026 \$29.38 \$1,410 2026 \$4.68 \$476,219 2026 \$0 \$0 \$1,410	202 \$29,7 \$1,42 202 \$4.6,21 202 \$0.5
VARIABLE OPERAT	S & MAINTENANCE EXPENDITURES - ADJUS Unit Capacity (Net Summer) Year in Service OSM Aging Bater/year Maintenance (\$/\$W-yr) ION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity (Net Summer) Annual Variable O&M Costs (\$/\$Whh) Annual Variable O&M Costs (\$/\$MWh) TOTAL - Capital TOTAL - Non Recurring O&M	48 1958 1.25% \$26.60 UNITS 48 24.2% \$4.68	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (5000) 20,430 512,768 533,198 5000 Total (5000) 20,430 513,511 533,941	Total (\$/kW) 615.21 266 8811 TOTAL 513,511 Total (\$/kW) 426 281 707	2018 \$26.60 \$1,277 2018 \$4.68 \$476,219 2018 \$4,410 \$1,600 \$1,277	\$26.93 \$1,293 \$1,293 \$4.68 \$476,219 \$5,000 \$2,500 \$1,293	2020 \$27.27 \$1,309 2020 \$4.68 \$476,219 2020 \$3,000 \$1,200	2021 \$1,325 2021 2021 \$4,68 \$476,219 2021 \$4,110 \$0 \$1,325	2022 \$27.96 \$1,342 2022 \$4.68 \$476,219 2022 \$1,000 \$1,000 \$1,342	2023 \$1,359 2023 2023 \$4,68 \$476,219 50 50 50 \$1,359	2024 \$28.66 \$1,376 2024 \$4.68 \$476,219 \$1,710 \$2,800 \$1,376	2025 \$1,393 2025 \$4.68 \$476,219 2025 \$1,200	2026 \$29.38 \$1,410 2026 \$4.68 \$476,219 2026 \$0 \$0 \$1,410	202 \$29.7.51,422 \$4.64.54 \$4.76,21* \$0.50 \$0.50 \$1.428
VARIABLE OPERAT	Unit Capacity (Net Summer) Year in Service OSM Aging Bratelyear Maintenance (S/kW-yr) JON & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Variable O&M Costs (S/Mwh) Annual Variable O&M Costs (S/Mwh) TOTAL - Capital TOTAL - Non Recurring O&M Fised O&M (dayted for age)	48 1958 1.25% \$26.60 UNITS 48 24.2% \$4.68	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (5000) 20,430 512,768 533,198 5000 Total (5000) 20,430 513,511 533,941	Total (\$/kW) 615.21 266 8811 TOTAL 513,511 Total (\$/kW) 426 281 707	2018 \$26.60 \$1,277 2018 \$4.68 \$476,219 2018 \$4,410 \$1,600 \$1,277	\$26.93 \$1,293 \$1,293 \$4.68 \$476,219 \$5,000 \$2,500 \$1,293	2020 \$27.27 \$1,309 2020 \$4.68 \$476,219 2020 \$3,000 \$1,300	2021 \$27.61 \$1,325 2021 \$4,68 \$476,219 2021 \$4,110 \$0 \$1,325	2022 \$27.96 \$1,342 2022 \$4.68 \$476,219 2022 \$1,000 \$1,000 \$1,342	2023 \$1,359 2023 2023 \$4,68 \$476,219 50 50 50 \$1,359	2024 \$28.66 \$1,376 2024 \$4.68 \$476,219 \$1,710 \$2,800 \$1,376	\$29.02 \$1,393 \$1,393 \$4.68 \$476,219 \$1,200 \$0 \$1,393	2026 \$29.38 \$1,410 2026 \$4.68 \$476,219 2026 \$0 \$0 \$1,410	202 \$29.7.51,422 \$4.64.54 \$4.76,21* \$0.50 \$0.50 \$1.428
VARIABLE OPERAT	Unit Capacity (Net Summer) Year in Service OSM Aging Bratelyear Maintenance (S/kW-yr) JON & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Variable O&M Costs (S/Mwh) Annual Variable O&M Costs (S/Mwh) TOTAL - Capital TOTAL - Non Recurring O&M Fised O&M (dayted for age)	48 1958 1.25% \$26.60 UNITS 48 24.2% \$4.68	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (5000) 20,430 512,768 533,198 5000 Total (5000) 20,430 513,511 533,941	Total (\$/kW) 615.21 266 8811 TOTAL 513.511 Total (\$/kW) 426 281 707 5000 5000 5000 5000 5000 5000	2018 \$26.60 \$1,277 2018 \$4.68 \$476,219 2018 \$4,410 \$1,800 \$1,277 \$476,219	2019 \$1,293 2019 \$4,68 \$476,219 2019 \$2,500 \$2,500 \$2,500 \$476,219	2020 \$27.27 \$1,309 2020 \$4.68 \$476,219 2020 \$3,000 \$1,300	2021 \$27.61 \$1,325 2021 \$4,68 \$476,219 \$4,110 \$50 \$51,325 \$476,219	2022 \$27.96 \$1,342 2022 \$4.68 \$476,219 2022 \$1,000 \$1,000 \$51,342 \$476,219	2023 \$28.30 \$1,359 2023 \$4.68 \$476,219 2023 \$0 \$1,359 \$476,219	2024 \$28.66 \$1,376 2024 \$4.68 \$476,219 2024 \$1,710 \$2,800 \$1,376 \$476,219 \$476,219	\$29.02 \$1,393 \$1,393 \$4.68 \$476,219 \$1,200 \$0 \$1,393	2026 \$29.38 \$1,410 2026 \$4.68 \$476,219 2026 \$0 \$0 \$1,410	202 \$29.7.51,422 \$4.64.54 \$4.76,21* \$0.50 \$0.50 \$1.428
VARIABLE OPERAT	Unit Capacity (Net Summer) Year in Service OSM Aging Bratelyear Maintenance (S/kW-yr) JON & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Variable O&M Costs (S/Mwh) Annual Variable O&M Costs (S/Mwh) TOTAL - Capital TOTAL - Non Recurring O&M Fised O&M (dayted for age)	48 1958 1.25% \$26.60 UNITS 48 24.2% \$4.68	Maintenance Tota SASED DEGRADATIO Capital expenditures Maintenance	N	Total (5000) 20,430 512,768 533,198 5000 Total (5000) 20,430 513,511 533,941	Total (\$/kW) 615.21 266 8811 TOTAL 513.511 Total (\$/kW) 426 281 707 5000 5000 5000 5000 5000 5000	2018 \$26.60 \$1,277 2018 \$4.68 \$476,219 2018 \$4,410 \$1,800 \$1,277 \$476,219	2019 \$1,293 2019 \$4,68 \$476,219 2019 \$2,500 \$2,500 \$2,500 \$476,219	2020 \$27.27 \$1,309 2020 \$4.68 \$476,219 2020 \$3,000 \$1,200 \$1,200 \$1,309 \$476,219	2021 \$27.61 \$1,325 2021 \$4,68 \$476,219 \$4,110 \$50 \$51,325 \$476,219	2022 \$27.96 \$1,342 2022 \$4.68 \$476,219 2022 \$1,000 \$1,000 \$51,342 \$476,219	2023 \$28.30 \$1,359 2023 \$4.68 \$476,219 2023 \$0 \$1,359 \$476,219	2024 \$28.66 \$1,376 2024 \$4.68 \$476,219 2024 \$1,710 \$2,800 \$1,376 \$476,219 \$476,219	\$29.02 \$1,393 \$1,393 \$4.68 \$476,219 \$1,200 \$0 \$1,393	2026 \$29.38 \$1,410 2026 \$4.68 \$476,219 2026 \$0 \$0 \$1,410	\$1,27 2022 \$29.79 \$1,428 \$476,219 \$05 \$05 \$1,428 \$1,428

SOAH DOCKET NO. 473-20-2278
PUC DOCKET NO. 50277
HAWKINS REBUTTAL - WORKPAPER DH-1

El Paso Elect	Ania Ina																
Vewman Unit																	
	Johnell Project No. 101955																
Condition Ass	sessment & Life Extension Assessment - 2027	-										-					
Ganital Exper	and Maintenance Forecasts	-															
	nditures and Maintenance Forecasts	_		-													
All costs are	presented in 2018\$; no inflation is included	-							_				-	_			
CAPITAL EXP	PENDITURES (Presented in \$000)	+		-		-											
	PENBITURES (Presented in 2000)	التنتيال		and the second	A CONTRACTOR OF THE PARTY OF TH							ELCINS.					and the second
DESCRIPTION		Туре	LAST	FREQUENCY	NEXT	TOTAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	CATEGORY
BOILER & HIGH E			2042		When due	\$600					\$600						Industry practice
	Boiler clean	Cap	2012 2017	10 yrs	When due	\$3,000	-	-	\$1,000		\$600	\$1,000			\$1,000		Required
	Regular boiler piping replacements Main steam piping replacement	Cap	N/A	3 yrs Once	Within 5 yrs*	\$2,000		\$2,000	\$1,000		_	\$1,000			\$1,000		Safety
	NDE of selected areas	Сар	N/A	3yrs	ASAP	\$330	\$110	\$2,000		\$110		-	\$110				Industry practice
	Replace air heater cold end baskets	Сар	2006	10 yrs	Within 5 yrs*	\$400	\$400			7110			9110				Industry practice
TURBINE GENERA		Cup	2000	20 110		7.00	7.00										
	STG Major Inspection	Сар	2017	6 yrs	When due	\$1,600						\$1,600					Industry practice
	STG Major Inspection	Exp	2017	6 yrs	When due	\$1,600						\$1,600					Industry practice
	ST blades/valve repl./repairs	Cap	N/A	Once	Next major	\$2,000						\$2,000					Required
	Valve Inspection	Exp	2017	4 yrs	When due	\$2,400				\$1,200				\$1,200			Industry practice
St11 2	Replace exciter	Сар	N/A	Once	Within 5 yrs*	\$350	\$350										Required
BALANCE OF PLA															- 1 - 3-0		
0 -01-02-1	Refurbish cooling tower	Exp	1992	30 yrs	Within 5 yrs*	\$2,000			\$2,000								Required
(C. N	Add liner to UG circulating water pipe	Exp	N/A	Once	Within 5 yrs*	\$1,000		\$1,000	4								Required
3	Replace FW heater tube bundles	Cap	N/A	Once	Within 5 yrs*	\$1,500			\$1,500								Industry practice
	Condenser retubing	Cap	N/A	Once	Within 5 yrs* Within 5 yrs*	\$1,500 \$1,000		\$1,000	\$1,500								Industry practice Required
ELECTRICAL & CO	Allowance for major pump/fan work	Exp	N/A	Unce	within 5 yrs*	\$1,000	-	\$1,000		-		-	-		-		nequired
ELECTRICAL & CO	Switchgear upgrade	Сар	N/A	Once	Within 5 yrs*	\$2,000	-	\$2,000		-	-			-	-	-	Industry practice
	Replace station batteries	Сар	2000	20 yrs	When due	\$2,000		\$2,000	\$200								Required
	Replace unit aux. transformers	Сар	N/A	Once	Within 5 yrs*	\$500		\$500	3200								Required
TOTAL	neplace diffe bax. transformers	cup	1976	Once	Within 5 yrs	\$500	1	\$300									
TOTAL	TOTAL - Capital	_			\$000	\$15,980	\$860	\$4,500	\$4,200	\$110	\$600	\$4,600	\$110	\$0	\$1,000	\$0	2.7.2
	TOTAL - Non Recurring O&M	1			\$000	\$8,000	\$0		\$2,000	\$1,200	\$0	\$1,600	\$0	\$1,200	\$0	\$0	
	TOTAL				\$000	\$23,980	\$860	\$6,500	\$6,200	\$1,310	\$600	\$6,200	\$110	\$1,200	\$1,000	\$0	
	*Distrubuted over years to spread out expense																P. D. Carrier
DESCRIPTION	Unit Capacity (Net Summer) FOM (\$/kW-yr)	74 520.74			\$000	\$15,348	\$1,535	\$1,535	\$1,535	\$1,535	\$1,535	\$1,535	\$1,535	\$1,535	\$1,535	\$1,535	
		-			1.1				-		_			1-7	\$1,535	\$1,333	
		-					1								\$1,535	\$1,333	
					Total (\$000))								\$1,535	\$1,333	
		-	Capital Expenditures		\$15,980	\$324)							.,,	\$1,535	\$1,555	
			Maintenance		\$15,980 \$15,348	\$324 \$207)								\$1,535	\$1,533	
					\$15,980	\$324)								\$1,535	\$1,333	
EIVED OBERA	ATIONS S. MAINTENANCE EVENINITIES C. ADIL	STED FO	Maintenance Total		\$15,980 \$15,348	\$324 \$207)								\$1,535	\$1,333	
	ATIONS & MAINTENANCE EXPENDITURES - ADJU	STED FO	Maintenance Total		\$15,980 \$15,348	\$324 \$207 \$531											
			Maintenance Total		\$15,980 \$15,348	\$324 \$207	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
	Unit Capacity (Net Summer)	74	Maintenance Total		\$15,980 \$15,348	\$324 \$207 \$531		2019	2020	2021	2022	2023	2024				
	Unit Capacity (Net Summer) Year in Service	74 1960	Maintenance Total		\$15,980 \$15,348	\$324 \$207 \$531	2018							2025	2026	2027	
	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year	74 1960 1.25%	Maintenance Total		\$15,980 \$15,348 \$31,328	\$324 \$207 \$531 TOTAL	2018 \$20.74	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
	Unit Capacity (Net Summer) Year in Service	74 1960	Maintenance Total		\$15,980 \$15,348	\$324 \$207 \$531	2018	\$21.00						2025	2026	2027	
	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year	74 1960 1.25%	Maintenance Total		\$15,980 \$15,348 \$31,328	\$324 \$207 \$531 TOTAL \$16,240	2018 \$20.74 \$1,535	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year	74 1960 1.25%	Maintenance Total	ADATION	\$15,980 \$15,348 \$31,328	\$324 \$207 \$531 TOTAL \$16,240	2018 \$20.74 \$1,535	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year	74 1960 1.25%	Maintenance Total R AGE BASED DEGR.	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000)	\$324 \$207 \$531 TOTAL \$16,240	2018 \$20.74 \$1,535	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year	74 1960 1.25%	Maintenance Total R AGE BASED DEGR. Capital Expenditures	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216	2018 \$20.74 \$1,535	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
DESCRIPTION	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr)	74 1960 1.25%	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	2018 \$20.74 \$1,535	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
DESCRIPTION	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year	74 1960 1.25%	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	2018 \$20.74 \$1,535	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr)	74 1960 1.25%	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	2018 \$20.74 \$1,535	\$21.00	\$21.26	\$21.53	\$21.80	\$22.07	\$22.34	2025 \$22.62	2026 \$22.91	2027 \$23.19	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr)	74 1960 1.25% \$20.74	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	\$20.74 \$1,535	\$21.00 \$1,554	\$21.26 \$1,573	\$21.53 \$1,593	\$21.80 \$1,613	\$22.07 \$1,633	\$22.34 \$1,654	2025 \$22.62 \$1,674	2026 \$22.91 \$1,695	\$23.19 \$1,716	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity Factor	74 1960 1.25% \$20.74 UNITS 74 34.2%	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	\$20.74 \$1,535 }	\$21.00 \$1,554	\$21.26 \$1,573	\$21.53 \$1,593	\$21.80 \$1,613	\$22.07 \$1,633	\$22.34 \$1,654	2025 \$22.62 \$1,674	2026 \$22.91 \$1,695	\$23.19 \$1,716	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Variable OSM Costs (S/MWh)	74 1960 1.25% \$20.74	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	\$20.74 \$1,535) 2018	\$21.00 \$1,554 2019	\$21.26 \$1,573	\$21.53 \$1,593 2021	\$21.80 \$1,613	\$22.07 \$1,633 2023	\$22.34 \$1,654 2024	2025 \$22.62 \$1,674 2025	2026 \$22.91 \$1,695	\$23.19 \$1,716	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity Factor	74 1960 1.25% \$20.74 UNITS 74 34.2%	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	\$20.74 \$1,535 }	\$21.00 \$1,554 2019	\$21.26 \$1,573	\$21.53 \$1,593	\$21.80 \$1,613	\$22.07 \$1,633	\$22.34 \$1,654 2024	2025 \$22.62 \$1,674	2026 \$22.91 \$1,695	\$23.19 \$1,716	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Variable OSM Costs (S/MWh)	74 1960 1.25% \$20.74 UNITS 74 34.2%	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	\$20.74 \$1,535) 2018	\$21.00 \$1,554 2019	\$21.26 \$1,573	\$21.53 \$1,593 2021	\$21.80 \$1,613	\$22.07 \$1,633 2023	\$22.34 \$1,654 2024	2025 \$22.62 \$1,674 2025	2026 \$22.91 \$1,695	\$23.19 \$1,716	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Variable OSM Costs (S/MWh)	74 1960 1.25% \$20.74 UNITS 74 34.2% \$2.54	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,240	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219	2018 \$20.74 \$1,535 } 2018 \$2.54 \$563,607	\$21.00 \$1,554 2019 \$2.54 \$563,607	\$21.26 \$1,573 2020 \$2.54 \$563,607	\$21.53 \$1,593 2021 \$2.54 \$563,607	\$21.80 \$1,613 2022 \$2.54 \$563,607	\$22.07 \$1,633 2023 \$2.54 \$563,607	\$22.34 \$1,654 2024 \$2.54 \$563,607	\$22.62 \$1,674 2025 \$2.54 \$563,607	\$22.91 \$1,695 2026 \$2.54 \$563,607	2027 \$23.19 \$1,716 2027 \$2.54 \$563,607	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (\$/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity Factor Variable O&M Costs (\$/MWh) Annual Variable O&M Costs (\$)	74 1960 1.25% \$20.74 UNITS 74 34.2%	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,348 \$15,348 \$31,328 \$000 Total (5000) \$15,980 \$16,240 \$32,220	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219 \$435	\$20.74 \$1,535) 2018 \$2.54 \$563,607	\$21.00 \$1,554 2019 \$2.54 \$563,607	\$21.26 \$1,573 2020 \$2.54 \$563,607	\$21.53 \$1,593 \$1,593 2021 \$2.54 \$563,607	\$21.80 \$1,613 2022 \$2.54 \$563,607	\$22.07 \$1,633 2023 \$2.54 \$563,607	\$22.34 \$1,654 \$1,654 2024 \$2.54 \$563,607	2025 \$22.62 \$1,674 2025 \$2.54 \$563,607	2026 \$22.91 \$1,695 2026 \$2,54 \$563,607	\$23.19 \$1,716 \$1,716 \$2027 \$2.54 \$563,607	
VARIABLE OP	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity Factor Variable O&M Costs (S/WWh) Annual Variable O&M Costs (S)	74 1960 1.25% \$20.74 UNITS 74 34.2% \$2.54	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,220	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219 \$435	\$20.74 \$1,535 } \$2018 \$2.54 \$563,607	\$21.00 \$1,554 2019 \$2.54 \$563,607 2019 \$4,500	\$21.26 \$1,573 2020 \$2.54 \$563,607	\$21.53 \$1,593 \$1,593 2021 \$2.54 \$563,607	\$21.80 \$1,613 2022 \$2.54 \$563,607 2022 \$600	\$22.07 \$1,633 2023 \$2.54 \$563,607	\$22.34 \$1,654 \$1,654 2024 \$2.54 \$563,607	\$22.62 \$1,674 2025 \$2.54 \$563,607	\$22.91 \$1,695 \$2026 \$2.54 \$563,607	\$23.19 \$1,716 \$1,716 \$2027 \$2.54 \$563,607	
DESCRIPTION	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity Factor Variable O&M Costs (S/MWh) Annual Variable O&M Costs (S) TOTAL - Capital TOTAL - Non Recurring O&M	74 1960 1.25% \$20.74 UNITS 74 34.2% \$2.54	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,220	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$219 \$435 \$000 \$000 \$000	\$20.74 \$1,535) 2018 \$2,54 \$563,607 2018 \$860	\$21.00 \$1,554 2019 \$2.54 \$563,607	\$21.26 \$1,573 2020 \$2.54 \$563,607 2020 \$4,200 \$2,000	\$21.53 \$1,593 \$1,593 2021 \$2.54 \$563,607 2021 \$110	\$21.80 \$1,613 2022 \$2.54 \$563,607 2022 \$600 \$0	\$22.07 \$1,633 2023 \$2.54 \$563,607 2023 \$4,600 \$1,600	\$22.34 \$1,654 \$1,654 2024 \$2.54 \$563,607 2024 \$110 \$50	2025 \$1,674 2025 \$2.54 \$563,607 2025 \$0 \$1,200	2026 \$1,695 2026 \$2,54 \$563,607 2026 \$1,000	2027 \$23.19 \$1,716 2027 \$2.54 \$563,607	
VARIABLE OP DESCRIPTION	Unit Capacity (Net Summer) Year in Service Maintenance Aging Rate per Year FOM (S/kW-yr) PERATION & MAINTENANCE EXPENDITURES Unit Capacity (Net Summer) Annual Capacity (Net Summer) Annual Capacity Factor Variable O&M Costs (S/WWh) Annual Variable O&M Costs (S)	74 1960 1.25% \$20.74 UNITS 74 34.2% \$2.54	Maintenance Total R AGE BASED DEGR. Capital Expenditures Fixed 08M	ADATION	\$15,980 \$15,348 \$31,328 \$000 Total (\$000) \$15,980 \$16,220	\$324 \$207 \$531 TOTAL \$16,240 Total (\$/kW \$216 \$219 \$435	\$20.74 \$1,535 } \$2018 \$2.54 \$563,607	\$21.00 \$1,554 2019 \$2.54 \$563,607 2019 \$4,500 \$2,000	\$21.26 \$1,573 2020 \$2.54 \$563,607 2020 \$4,200 \$2,000 \$1,573	\$21.53 \$1,593 \$1,593 2021 \$2.54 \$563,607	\$21.80 \$1,613 \$2022 \$2.54 \$563,607 \$600 \$1,613	\$22.07 \$1,633 2023 \$2.54 \$563,607	\$22.34 \$1,654 \$1,654 2024 \$2.54 \$563,607	\$22.62 \$1,674 2025 \$2.54 \$563,607	\$22.91 \$1,695 \$2026 \$2.54 \$563,607	\$23.19 \$1,716 \$1,716 \$2027 \$2.54 \$563,607	

SOAH DOCKET NO. 473-20-2278 PUC DOCKET NO. 50277 HAWKINS REBUTTAL - WORKPAPER DH-1

El Paso Electric, Inc.															
Newman Unit 2															
Burns & McDonnell Project N	16: 101955														
	Extension Assessment - 2027														
Capital Expenditures and Ma	Intenance Forecasts														
All costs are presented in 20															
, and do to an opinion in an	104, 110 111100001110 111010000														
CAPITAL EXPENDITURES (Pro	sented in \$800)														
DESCRIPTION		Type	LAST	FREQUENCY	NEXT	TOTAL	2018	2019	2020	2021	2022	2023	2024	2025	202
BOILER & HIGH ENERGY PIPING		1,700		IMEGOEMEN	112.11	101112		2025	2020		2022	2023	2024	2023	201
Boiler clean		Сар	2011	10 yrs	When due	\$600				\$600					
	piping replacements	Сар	2016	3 yrs	When due	\$3,000		\$1,000		7000	\$1,000			\$1,000	
	iping replacement	Сар	N/A	Once	ASAP	\$2,000	\$2,000	72,000			71,000			71,000	
NDE of select		Сар	N/A	3yrs	ASAP	\$330	\$110			\$110			\$110		
	eater cold end baskets	Сар	N/A	10 yrs	Within 5 yrs*	\$400	\$400			7220			V110		
TURBINE GENERATOR						-									
STG Major Ins	pection	Сар	2013	6 yrs	When due	\$3,200		\$1,600						\$1,600	
STG Major Ins	pection	Exp	2013	6 yrs	When due	\$3,200		\$1,600						\$1,600	
ST blades/val	ve repl./repairs	Сар	N/A	Once	Next major	\$2,000		\$2,000							
Valve Inspect	on	Exp	N/A	4 yrs	Next major	\$2,400		\$1,200				\$1,200			
Generator rev	vind	Сар	N/A	Once	Within 5 yrs*	\$3,500			\$3,500						
BALANCE OF PLANT															
Refurbish coo	ling tower	Exp	N/A	Once	Within 5 yrs*	\$2,000				\$2,000					
Add liner to U	G circulating water pipe	Exp	N/A	Once	Within 5 yrs*	\$1,000				\$1,000					
Replace FW h	eater tube bundles	Cap	N/A	Once	Within 5 yrs*	\$1,500			\$1,500						
Condenser re	tubing	Cap	N/A	Once	Within 5 yrs*	\$1,500			\$1,500						
Allowance for	major pump/fan work	Exp	N/A	Once	Within 5 yrs*	\$1,000					\$1,000				
ELECTRICAL & CONTROLS						\$0									
Switchgear up	grade	Cap	N/A	Once	Within 5 yrs*	\$2,000			\$2,000						
Replace statio	n batteries	Cap	2000	20 yrs	When due	\$200			\$200						
Replace GSU		Сар	N/A	Once	Within 5 yrs*	\$1,000		\$1,000							
Replace unit a	ux. transformer	Сар	N/A	Once	Within 5 yrs*	\$500			\$500						
TOTAL															
TOTAL - Capit					\$000	\$21,730	\$2,510	\$5,600	\$9,200	\$710	\$1,000	\$0	\$110	\$2,600	\$
	Recurring O&M				\$000	\$9,600	\$0	\$2,800	\$0	\$3,000	\$1,000	\$1,200	\$0	\$1,600	\$
TOTAL					\$000	\$31,330	\$2,510	\$8,400	\$9,200	\$3,710	\$2,000	\$1,200	\$110	\$4,200	\$0
*Distrubuted	over years to spread out expense														