

CRITICAL REPLACEMENT PARTS – FY 2024

Note: Highlighted dates is for equipment that is pending Regulatory office approvals (P3/FOMB). The Estimated Delivery dates are based on January 2025 approvals. Delays on approvals will affect delivery and installation

#	Name of the Plant	Description / Specifications	Reason to define as Critical Component	Estimated Delivery	Installation by
1	Costa Sur 5&6/Aguirre 1&2	Air heater baskets (cold and hot)	The Air heater basket are used to increase the efficiency of the units by reheating the process air. Currently the units are limited in capacity due the high differential pressure between the hot and cold end of the baskets.	Aguirre: 4/29/25 Costa Sur: 12/10/24 & 7/22/25	Costa Sur U5 : Feb/2025 Costa Sur U 6: Dec/2025 Aguirre 1: Pending Aguirre 2: April 2025
2	Costa Sur 5&6/Aguirre 1&2	Condensing Circulating Water Pump Vertical motor 1000HP, 4000/146	The Cond Circulation water pumps motor is the driving force to provide cooling water to the steam turbine condenser. The current motors are at end of life an have failed repeatedly and are unrepairable . In the past year Aguirre and Costa Sur were load limited for lack the motors available for the condenser circulating water pump.	March 2026	December 2026
3	Costa Sur 5&6/Aguirre 1&2	Main Condensing Pump Vertical motor 500HP, 4000 / 66	The condensate pump provide condensate water to the boiler from the condenser. The condensate motors are at end of life. The lack of motor available limit the capacity of the unit due to lower vaccum in the condenser.	August 2026	December 2026
4	Costa Sur 5&6/Aguirre 1&2	Boiler Circulating Water Pump Vertical Motor 700 HP, 4000/90	In a Forced Circulating Boiler the Boiler Feedwater Circulating pumps provide a pressure booster to the condensate water to the boiler drum. The Motors are at end of life and had multiple failures. The unit need three BCWP in service a failure in one motor will cause the loss of the unit for loss of boiler water differential pressure.	August 2026	December 2026

5	Costa Sur 5&6/Aguirre 1&2	Boiler Feed Pump Horizontal Motor 5000HP	The Boiler Feedwater pumps provide water to the boiler drum, this pump provide the half of the necessary capacity to run the unit. The lack of these motors can cause a unit load limitation or a total load capacity in Costa Sur case. The Motors are at end of life and had multiple failures.	August 2026	December 2026
6	Costa Sur 5&6/Aguirre 1&2	IDF Horizontal Motor 1750HP, 4000/580	The Induce draft fans (ID) is used to remove the flue gases from the boiler and maintain a negative draft. The motors are at end of life. The lack of the operation of this fan cause the limitation of the unit.	August 2026	December 2026
7	Palo Seco 3&4	Air Heaters	The Air heater basket are used to increase the effecency of the units by reheating the process air. Currenty the units are limited in capacity due to the current condition of the baskets. The baskets are clogged and deteriorate and cause the imitation of the units for high differential pressure in the air heaters.	June 2025	January 2027
8	Palo Seco 3&4	Hydrogen cooler	The Hydrogen Coolers are used to cool the Hydrogen that removes the heat from the generator windings	TBD - Under RFP	January 2026
9	Palo Seco 3&4	Turning Gear Assembly	The Turning Gear is used to keep the turbine/ generator rotor spinning, at a slow speed after its was operating. Preventing the rotor warping and the bearing from being damaged. Without the turning gear mechanism the unit can not put in service because the risk of	TBD - Under RFP	TBD
10	Palo Seco 3&4	Set of open and close hardware	The set of open and closed hardware is used to ensure that the turbine is reinstalled with new hardware to prevent leaks and inprove its efficiency	September 2025	July 2027
11	Palo Seco 3&4	Reduction station atemperatures	The Reduction station atemperator is used to lower the superheat steam temp using Feed water. To avoid overheating and vibrations in the turbine.	TBD - Under RFP	TBD

12	Palo Seco 3&4	Fixed screens	The intake fix screens are used to prevent large debris from the ocean for entering damaging the traveling screens , Circulating water pumps and plugging the condenser. If the intake fix screens is broken the condenser will clogged the tubes of the condenser affecting the vaccum and cause limitation.	October 2025	May 2026
13	Palo Seco 3&4	Bunker-C Fuel Oil Pump	The Bunker C fuel oil pump is used to transfer the fuel oil from the storage tank to the units for operation	TBD - Under RFP	TBD
14	Palo Seco 3&4	Breakers 480 & 4160	The 480v and 4160v brk provid power to the operating equipment on the site and they are the isolalting means when repair are needed. A failure in this swithgear can cause the failure of the units.	January 2025	June 2025
15	Palo Seco 4	Recirculating valves	The BFP recirculating valve is used to provided the minimum required flow of water for the BFP. This valve prevents the pump from cavitation and over pressurization . In this valve have a 4,000 psi of differential pressurea malfunction in this valve can cause a failure in the BFP.	July 2025	November 2025
16	Palo Seco 3&4	Acid Pumps P3 and P4	The sulfuric acid pump is used to inject the necessary chemicals to the boiler in order to maintain the proper PH levels	March 2025	July 2025
17	Palo Seco 3&4	Boiler and Burners Recirculation Valves	the recirculation valves are used to maintain the proper fluid flow in the system preventing cavitation and overpresurazation of the pump	June 2025	January 2026
18	Palo Seco 3&4	Spill Over, Cold Reheat & Superheater Turbine Steam Seal Valves	The steam seal valves are used to regulate the steam that seals the SH and CRH section of the turbine. A malfuntion in this valve can cause the loss of vaccum in the condenser.	TBD - Under RFP	TBD
19	Palo Seco Lab.	Demi 4 tank inlet regulation valve	The regulating valves are used to control the water level of the Demin tank	June 2025	August 2025

20	Aguirre CC 2-3	Turbine section Stage 1, 2 & 3	The Turbine section 1,2,3 is the main rotating element of the steam turbine. Currently the installed turbine section is at end of life and in need of replacement	Contract Negotiation with Vendor	TBD
21	Aguirre CC 2-3	Torque Converter	The torque Converter is used to drive the rotor	August 2025	August 2025
22	Aguirre CC 2-3	Switch gears 4kv	The 4kv switchgear provide power to the sites critical equipment. The current switchgear line up is in poor shape and needs to be replaced.	TBD - Under RFP	TBD
23	Aguirre CC	Cooling Tower Motors	The cooling tower fans are used as the motive force to power a set of fans that remove the heat from the cooling tower. If fail the Cooling Tower motor operation need to limit the unit for high temperature in the equipments.	TBD - Under RFP	TBD
24	Aguirre CC 2-3	Generator Breaker 13kv	The Generator breaker is used to isolate the generator from faults and also used to synchronize the generator to the system. The current breaker is at end of life and needs to be replaced	April 2025	August 2025
25	Cambalache 3	Fill shutoff valves	The fill shut off vlv is used to isolate the fill system once full or needs to automatical isolate	Contract Negotiation with Vendor	TBD
26	Cambalache 3	Trip shutoff valve	the trip shut off vlv is used during a unit trip condition to promptly divert the fuel oil back to the tank	Contract Negotiation with Vendor	TBD
27	Cambalache 3	Nozzle valve	The Nozzle valve is used to distribute the liquid fuel to the combustion chamber	Contract Negotiation with Vendor	TBD
28	Cambalache 3	leakage valve	The leakage valve is used to isolate leaks in the system	Contract Negotiation with Vendor	TBD
29	Cambalache 3	fuel control valve	The Fuel control valve is used to control the proper amount of fuel to the system while in Operations	Contract Negotiation with Vendor	TBD

30	Cambalache	leak detection system - fuel transfer line	The leak detection system is used to alarm if there is a leak in the system and alert an operator. The current system is inoperable and needs to be replaced.	TBD - Under RFP	TBD
31	Cambalache	Demin Water Resin	The Demin water resin is used to remove the ions out of the water.	TBD - Under RFP	TBD
32	Cambalache 2,3	Steam Bypass Valve	Steam system is necessary to operate the unit. Without steam the emissions will not be within regulation and will not be able to operate the unit.	Contract Negotiation with Vendor	TBD
33	Cambalache 2,3	Steam Release Valves	Steam system is necessary to operate the unit. Without steam the emissions will not be within regulation and will not be able to operate the unit.	Contract Negotiation with Vendor	TBD
34	Cambalache	Fire protection system	The fire protection system is used to monitor and protect the assets and is in need of an upgrade and replacement	TBD - Under RFP	TBD
35	Cambalache	Generator Breaker 13kv	The generator breaker is used to isolate the generator from faults and also used to synchronize the generator to the system. The current breaker is at end of life and needs to be replaced	TBD - Under RFP	TBD
36	Cambalache	high speed control	the high speed control system is used to control the generating unit speed. The current system is outdated and needs to be replaced	Contract Negotiation with Vendor	TBD
37	Cambalache 2,3	Safety Valves	The Safety valves are used to prevent an over pressurization of the system. Current safeties are out of tolerance and needs to be replaced.	July 2025	November 2025
38	Mayaguez	Fuel Skid Pump	The fuel skid pump is used to transfer fuel from the fuel oil skid to the unit	January 2025	January 2025
39	Mayaguez	Fuel Skid Solenoid Valves	The fuel skid solenoid vlv is used to electrically operate the fuel skid system	January 2025	January 2025
40	Mayaguez	Fuel Transfer	The fuel oil transfer pump is used to transfer the oil from the storage tanks to the transfer skid	TBD - Under RFP	TBD

41	Mayaguez	Clutch removal Kit	The clutch removal kit is used to remove	TBD - Under RFP	TBD
42	Mayaguez	DCS	The Digital control system (DCS) is used to operate and control the power generating station. The current control system is obsolete and needs to be replaced	TBD - Under RFP	TBD
43	Mayaguez	Demin RO System Pumps	The Reverse Osmosis pumps are used to push water to and from the Demin water treatment system	April 2024	January 2025
44	Mayaguez	EDI system	CEDI is a water treatment process that uses a combination of ion-exchange resins, ion-exchange membranes and direct current to continuously deionize water without the need for chemicals. CEDI technology avoids using chemicals, helps to reduce the systems' operating and maintenance costs	June 2024	January 2025
45	Mayaguez	PI-DAS System	The Process Book (PI- Das System) is used to display unit information. It is used to provide live data for operations and analysis	TBD - Under RFP	TBD
46	Costa Sur 5&6/Aguirre 1&2	Boiler feed water pumps	The Boiler Feed Pump is used to increase the condensate pressure above the steam process pressure . Current pumps are at end of life and need replacement . The lack of this pump bundles can cause Aguirre and Costa Sur units limitations or complete loss in generation in Costa Sur.	TBD - Under RFP	TBD
47	Costa Sur 5&6	Feedwater Heaters 6	The feed water heaters are used to improve the efficiency of units by gradually increasing the water temperature before it enters the furnace for further heating. Currently the installed heaters are not performing.	April 2026	August 2026
48	Costa Sur 5&6	Feedwater Heaters 7	The feed water heaters are used to improve the efficiency of units by gradually increasing the water temperature before it enters the furnace for further heating. Currently the installed heaters are not performing.	April 2026	August 2026

49	Costa Sur 5&6/Aguirre 1&2	Continuous Condenser Wash	The condenser wash system is used to clean the tubes	TBD - Under RFP	TBD
50	Aguirre 1	Feedwater Heaters 7	The feed water heaters are used to improve the efficiency of units by gradually increasing the water temperature before it enters the furnace for further heating. Currently the installed heaters are not performing.	April 2026	May 2027
51	Aguirre 2	Feedwater Heaters 3	The feed water heaters are used to improve the efficiency of units by gradually increasing the water temperature before it enters the furnace for further heating. Currently the installed heaters are not performing.	April 2026	October 2026
52	San Juan 5 & 6	GT fully bladed rotor	Necessary for equipment expedited return to service and unit availability for component exchange. Unit may be out of service several additional months due to lack of this part for replacement.	TBD - Under RFP	TBD
53	Palo Seco 3	Water Heater 5	The feed water heaters are used to improve the efficiency of units by gradually increasing the water temperature before it enters the furnace for further heating. Currently the installed heaters are not performing.	April 2026	August 2027
54	Palo Seco 3&4	Deaerator pump recirculation valves	The Deaerator pump recirculating valve is used to maintain the process flow and prevent cavitation and over pressure of the system	TBD - Under RFP	TBD
55	Palo Seco 3&4	Feedwater Heaters & Boiler Lead Valves Actuators	The feed water heaters are used to improve the efficiency of units by gradually increasing the water temperature before it enters the furnace for further heating. Currently the installed heaters are not performing. The Boiler lead valve is used to isolate the steam before entering the Steam turbine. The valve is leaking by and not sealing	TBD - Under RFP	TBD

56	San Juan 5	Continuous Condenser Wash	The compressor wash system will improve the efficiency of the unit by removing debris and contamination from the turbine compressor	TBD	TBD
57	San Juan 7	Continuous Condenser Wash	The compressor wash system will improve the efficiency of the unit by removing debris and contamination from the turbine compressor	April 2025	May 2025
58	San Juan 7	Circulating Pumps	The Circulating water pump is used to transfer water from the intake to condenser from cooling. The current CWP is at end of life an in need of replacement	TBD – Under RFP	TBD
59	San Juan 5,6,7	Traveling screens	The traveling screens are used to clean the water from debris that passed the stationary screens, preventing it from entering the condenser	TBD – Under RFP	TBD
60	San Juan 7	Cooling tower	The cooling tower is used to cool the closed cooling water for the unit . It is currently underperforming and at end of life	TBD – Under RFP	TBD
61	Aguirre CC 2-3	GT Compressor Rotor	The GT rotor is the main rotating element of the combustion turbine. It is at end of life and needs replacement	TBD – Under RFP	TBD
62	Aguirre CC	Condenser Circulating Water Pump	The circulating water pumps are used to transfer water from the cooling tower to the Condenser. They are at end of life and need replacement	TBD – Under RFP	TBD
63	Aguirre CC	Boiler feed water pumps	The BFP is used to increase pressure and transfer water to the boiler. The current motors are at end of life	April 2026	February 2027
64	Aguirre CC 2-3	Exhaust Duct	Necessary equipment for unit operation EPA regulations and noise reduction.	TBD – Under RFP	TBD
65	Cambalache	Overhead Crane	The overhead crane is used to perform the works related to the hot gas pass inspection and the major outage of the units. Actually this Crane is out of service for problems in the structure and the crane controls.	TBD – Under RFP	TBD

66	Cambalache	Feedwater Pump and Motor	The feed water pump/motor system is used to increase the water pressure and distribute it to the system	TBD - Under RFP	TBD
67	Cambalache 1,2,3	Starting Frequency Converter Transformer	The starting frequency converter transformer is used to handle non liner or sinusodial loads	TBD - Under RFP	TBD
68	Cambalache	DCS	The Distrubuted control system is used to control all the perammiters of the operating unit. The current system is outdated and needs to be upgraded.	TBD - Under RFP	TBD
69	San Juan 5&6	GT Compressor Wash	The compressor wash system will improve the efficiency of the unit by removing debris and contamination from the turbine compressor	Contract Negotiation with Vendor	October 2025