



Geothermal Plants 2025 Spring Outages

Jim Beach
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Geothermal Facility Plant 2 Outage Scope of Work

Planned Outage Dates

Plant 2 (U4) - March 1st thru March 31st, 2025

During the outages, the Geothermal Facilities team will complete preventative and predictive maintenance work on equipment that cannot be worked on while the units operate without affecting the facility's output. NCPA will hire several contractors to support the maintenance team during the 2025 maintenance outages.

Plant 2

- Stretford System (Tanks and Mechanical Pumps) Cleaning, Inspection, NDE Testing, and repairs
- Main Condenser Maintenance (Clean Tubes and Eddy Current 25% of the Tubes)
 - Ball Cleaning System – Install New System
- Steam Turbine - Borescope Inspection L-O Blades (U4)
 - Vibration Probes – Install X, Y probes with Bentley Nevada System upgrade
 - Inspect & Repair Strainers as needed, Vessel Cleaning
- U4 Cooling Tower – Cell 4,5,6 Nozzle Replacement, Re-Injection Pit Cleaning
- Electrical Work – Breaker, Bus Maintenance, along with Relay Testing
- Fulton 230KV Line Maintenance

Geothermal Facility Plant 1 Outage Scope of Work

Planned Outage Dates

Plant 1 (U1&2) - May 1st thru May 31st, 2025

During the planned outages, the Geothermal Facilities team will complete preventative and predictive maintenance work on equipment that cannot be worked on while the units operate without affecting the facility's output. NCPA will hire several contractors to support the maintenance team during the 2025 maintenance outages.

Plant 1

- Stretford System (Tanks and Mechanical Pumps) Cleaning, Inspection, NDE Testing, and repairs
- Main Condenser Maintenance (Clean Tubes and Eddy Current 25% of the Tubes)
- Steam Turbine - Borescope Inspection L-O Blades (U1)
 - Vibration Probes – Install X, Y probes for U1
 - Inspect & Repair Strainers as needed, Vessel Cleaning
- U1&2 Cooling Tower – Re-Injection Pit Cleaning, Rebuild Circ Water Pumps (2)
 - Pull New Cable for U2 Motor – A Pump
- Electrical Work – Breaker, Bus Maintenance, along with Relay Testing
- Lakeville 230KV Line Maintenance

Geothermal Facility Plant 1 & 2 Outage Costs

Plant 1 (U1&2) - May 1st thru May 31st, 2025

Plant 2 (U4) - March 1st thru March 31st, 2025

Plant	Category	Cost
Plant 1	Mechanical	\$ 200,000
Plant 1	Electrical	\$ 300,000
Plant 1	Cleaning & Inspections	\$ 185,000
Plant 1	Stretford System	\$ 600,000
Plant 1	Cooling Tower	\$ 20,000
Plant 1	Turbine	\$ 175,000
Plant 1	Balance of the Plant	\$ 250,000
Plant 1 Total		\$ 1,730,000

Plant	Category	Cost
Plant 2	Mechanical	\$ 300,000
Plant 2	Electrical	\$ 135,000
Plant 2	Cleaning & Inspections	\$ 245,000
Plant 2	Stretford System	\$ 530,000
Plant 2	Cooling Tower	\$ 50,000
Plant 2	Turbine	\$ 85,000
Plant 2	Balance of the Plant	\$ 200,000
Plant 2 Total		\$ 1,545,000

Plant	Cost
Plant 1	\$1,730,000
Plant 2	\$1,545,000
Contingency	\$250,000
Total Project Cost	\$3,525,000

Funding

FY 2025 Budget	Budget	Comments
Routine Maint. (March and May Total)	\$900,000	FY25 Maintenance Budget
Plant 1 Cooling Towers Scoping & Engineering	\$575,000	FY25 Approved Project - Remaining Funds
Bently Nevada 3500 Monitoring System for U1&4	\$250,000	FY25 Approved Projects
Balance of Plant Work, Contingent Maintenance, Well Replacement /Workover	\$1,800,000	Maintenance Reserve
Total Funding Needed	\$3,525,000	

Geothermal Maintenance Reserve Schedule

Balances		
Geo Maintenance Reserve (6/30/24)	\$3,555,073	
FY 2024 & 2025 Contributions	\$5,332,452	
Expenses - Plant 1 Unit 2 Overhaul	(\$2,200,000)	
Emergency Eyewash Stations	(\$140,000)	
Warranty Coverage Authorization (Previously Approved \$750k)	(\$93,920)	This is the total spent, the vendor covered the majority of the cost.
FY 25 Spring Outage Work	(\$1,800,000)	
End of FY 2025 Budget Funds	\$4,653,605	

5 year Maintenance Projection

	2026	2027	2028	2029	2030
BEGINNING BALANCE	4,653,605	7,086,368	9,621,875	7,528,336	3,808,227.38
Contributions	5,460,263	5,591,270	5,591,270	5,725,551	5,863,190.00
PLANNED SPENDING					
Included in Budget					
Plant 1 Unit 1 Overhaul				(6,831,000)	
Plant 1 Unit 2 Overhaul					(7,070,085.00)
Emergency Eyewash Stations					
Plant 1 Unit 2 Turbine Overhaul					
Plant 2 Unit 4 Overhaul			(6,600,000)		
Well Replacement Workover - 25 Spring Outage	(2,000,000)	(2,000,000)		(1,500,000)	
Balance of Plant Work - 25 Spring Outage	(515,000)	(530,450)	(546,364)	(562,754)	(579,637.00)
Contingent maintenance - 25 Spring Outage	(512,500)	(525,313)	(538,445)	(551,906)	(565,704.00)
Commission Meeting Added					
Plant 1 Unit 2 Overhaul - Warranty Related					
PROJECTED ENDING BALANCE	7,086,368	9,621,875	7,528,336	3,808,227	1,455,991.38

Environmental Analysis

- This project consists of routine, recurring maintenance to the existing equipment listed above. This project will not change the function, size, or operation of the equipment. These activities are categorically exempt under Class 1, 2, 3, 4, and 11 from the provisions of the California Environmental Quality Act pursuant to Sections 15301 (b), 15302 (c), 15303, 15304 and 15311 of the CEQA Guidelines. A Notice of Exemption was approved by the NCPA Commission on October 24, 2024 for this class of work and was filed in both Sonoma and Lake County. Thus, this project conforms to these exemptions and no environmental review is necessary.

Recommendation

- Staff is seeking a recommendation from the Facilities Committee for Commission approval authorizing the Geothermal Plants 2025 Spring Outages and delegating authority to the General Manager or his designee to award bids, execute agreements, and issue purchase orders for the project in accordance with NCPA purchasing policies and procedures, without further approval by the Commission, for a total cost not to exceed \$3,525,000, to be funded from the approved FY 2025 Geothermal Budget and the Geothermal Maintenance Reserve Fund, and authorization to spend \$1,800,000 from the Maintenance Reserve for this work.