

STAFF REPORT UTILITY MEETING

AGENDA DATE: June 27, 2023

DEPARTMENT: Electric Utility

TITLE:

Agreement with ABB Inc., for the purchase of magnetically actuated 38kV vacuum circuit breakers

SUMMARY:

Agreement with ABB Inc. (ABB), authorizes ABB to provide magnetically actuated 38kV vacuum circuit breakers for use at the City's electrical substations at a cost not to exceed \$450,000. The magnetically actuated 38kV vacuum circuit breakers have been identified as critical components for the City's electric utility System Hardening and Reliability Improvement Projects (SHRIP) and for which bonds were sold in November 2020.

BACKGROUND AND JUSTIFICATION:

In 2023, the City issued Request for Proposals (IFB 23-105) for the procurement of magnetically actuated 38kV vacuum circuit breakers for use on the City's electrical substations.

The magnetically actuated 38kV vacuum circuit breakers will be installed in City's substations as they are rebuilt and updated with new, technologically advanced equipment, including the Canal 8-Bay distribution substation. The breakers serve as electric system protection devices on the 26.4 kV feeders and sub-transmission loops in order to increase service and reliability to thousands of customers.

The ABB R-Mag breakers operate in similar fashion to breakers found in a household breaker panel. When a fault on the power line is experienced, the breaker will open and disrupt power based on voltage and current thresholds programmed in the breaker relay device. This function is critical in life-safety protection as well as protecting system equipment when a fault is experienced.

The R-MAG® is truly the next generation in medium voltage vacuum circuit breaker technology. ABB is the first to combine the unique benefits of vacuum interrupter technology with a magnetic actuator designed to exploit these capabilities. Using a flux-shifting device with integral permanent magnets, the R-MAG mechanism has only one moving part. With simple open and close coils, an electronic controller and capacitors for energy storage, the R-MAG circuit breaker mechanism is capable of 10,000 load operations. These are a few of the features that mark departure from the conventional spring-operated mechanism, introducing new capabilities and benefits for a smarter distribution system. To continue with the SHRIP program, the City is requesting the purchase of additional magnetically actuated 38kV vacuum circuit breakers and is requesting a not-to-exceed increase in the Agreement with ABB.

Agreement with ABB, authorizes ABB to provide magnetically actuated 38kV vacuum circuit breakers for use on the City's electrical distribution systems and substations at a cost not to exceed \$250,000 for Fiscal Year 2023.

MOTION:

Move to approve/disapprove Agreement with ABB Inc. for the purchase of magnetically actuated 38kV vacuum circuit breakers at a cost not to exceed \$250,000 for Fiscal Year 2023.

ATTACHMENT(S):

Fiscal Impact Analysis
Agreement
Bid Tab

FISCAL IMPACT ANALYSIS

Five Year Summary of Fiscal Impact:

Fiscal Years	2023	2024	2025	2026	2027
Inflows					
Current Appropriation	0	0	0	0	0
Program Income	0	0	0	0	0
Grants	0	0	0	0	0
In Kind	0	0	0	0	0
Outflows					
Operating	0	0	0	0	0
Capital	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Net Fiscal Impact	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
No. of Addn'l Full-Time Employee Positions	0	0	0	0	0

Contract Award - Existing Appropriation	
	Expenditure
Department	Electric Utility
Division	T & D
GL Description	Improve Other than Build / Infrastructure
GL Account Number	421-6020-531-6315
Project Number	SH2113
Requested Funds	\$ 250,000