

# Electric Power Evaluation & Backup Power Project

EL PASO WATER, EL PASO, TEXAS

In 2011, an outbreak of Arctic air forced outages across Texas, including by El Paso Water (EPWater). In 2021, a new, record-breaking Arctic air mass gripped Texas, again forcing state-wide outages. Except this time not by EPWater. After its February 2011 outages, EPWater commissioned Black & Veatch (BV) to evaluate and implement improvements to its ability to deliver reliable and safe water to customers.

The project involved multiple contracts, multiple generator sizes and characteristics, and rapid implementation in multiple sites.

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## SCOPE OF WORK

### Future Power Reliability Evaluation

Evaluated the operating protocols of El Paso Electric to confirm it was meeting the reliability requirements of U.S. interconnected electric utilities and to develop an expected basis by which to evaluate the need for additional electric supply reliability. It included independent assessments of El Paso Electric's system planning studies as well as reviews of assessments by governing agencies including DOE, EEI, NERC, FERC and PUCT.

### Water Standby Power Needs Assessment

Included physical evaluation of 166 groundwater well sites, 51 booster pumping stations and 4 water treatment plants to evaluate existing conditions relative to overall system reliability and the possible implementation of a standby emergency power system.

### Raw Water Pumping & Finished Water Storage Impact Evaluation

Evaluated the electrical loads of pumping facilities equipment and the estimated consumption of finished water in storage.

### Water Quality and Treatment Evaluation

Assessed the impact of a power outage on treatment operations.

### System Hydraulics, Distribution Impact Evaluation

Performed hydraulic modeling scenarios to evaluate demand and supply base on target levels of service at each major facility considering type and location.

### Standby Power Options Evaluation

Included engineering and economic evaluation of on-site power generation equipment - turbine, microturbine, fuel cell, engine generator (diesel and gas).

Following the evaluations, which included recommendations and cost estimates, BV provided design and construction services to implement the improvements (starting in June 2013). The project included procurement and installation of 66 standby power engine-generators ranging in size from 125 to 2500 KW and supporting facilities. Because of the significant lead time for delivery of the engine-generators and associated electrical equipment, the procurement of four equipment and four installation (construction) packages was accelerated. Project construction was completed in December 2020.