

CASE STUDY / **QUENETT CREEK SUBSTATION**

SMALL FOOTPRINT, BIG IMPACT FOR COMMUNITY

With significant local load growth imminent, Bonneville Power Administration needed a new substation to increase capacity in the area. We provided efficient project delivery to design and construct the substation on an aggressive schedule while managing site-specific challenges.



SUBSTATION PROJECT OVERCOMES SITE-SPECIFIC COMPLICATIONS

Successful effort works around rocky terrain and culturally sensitive monuments within a relatively small footprint to boost local power capacity.

PROJECT STATS

CLIENT

Bonneville Power Administration

LOCATION

The Dalles, Oregon

COMPLETION DATE

May 2019

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RECORDABLE INCIDENTS
OVER NEARLY 70,000
WORKER HOURS

60

HOUR WORKWEEKS TO
COMPLETE CONSTRUCTION
IN 12 MONTHS

205

FOUNDATIONS NEEDED

CHALLENGE

Bonneville Power Administration (BPA) provides reliable, sustainable power to a busy industrial area in northern Oregon. With a new high-tech data center being built in the area, adding to the demand, BPA needed a new greenfield 230-kV substation to accommodate load growth in the Northern Wasco County People's Utility District.

The project came with a series of region-specific complications. Extreme weather during the project, including temperatures that ranged from over 100 degrees to below freezing and periods of heavy snow, would require unique safety plans for the differing conditions. The site contained basalt-type rock material requiring significant grading in culturally sensitive areas. Careful planning and communications were necessary to prepare the site while respecting monuments of importance to the local tribal community.

SOLUTION

BPA selected us to provide engineering, procurement and construction services on the new four-bay, 12-breaker, break and a half layout, including a new Power Control Assembly for substation controls. With a 16-month project timeline, scheduling was critical to successfully completing the work.

We implemented a project schedule that staged the release of design documents and material procurement in conjunction with construction. Working with BPA, we expedited multiple phases, including quality review of design documents, specifications, submittal reviews and responses to field requests. With lengthy lead times for some of the materials, procurement was coordinated with the project construction schedule to keep activities moving.

Construction sequences evolved over the course of the project, adopting and incorporating





efficiencies uncovered along the way. Teamwork also played an important role as construction teams maintained 60-hour workweeks through the 12 months of construction.

The presence of culturally sensitive monuments within the construction footprint required working closely with the Confederated Tribes of the Umatilla Indian Reservation to develop solutions that would enable the necessary civil grading and site work. The construction team barricaded some sensitive areas while site excavation continued elsewhere. The design was modified to avoid some of the monuments, and another was carefully relocated.

At the peak of construction, at least 60 craft and technical personnel were working on the site. Given the challenges of the terrain and potentially extreme weather, we

worked with BPA to generate a site-specific safety and health plan that bridged the differences between the companies' safety programs, leading with the more conservative approach. In addition, a detailed heavy-lift plan was implemented for the critical lift of the power control assembly building.

RESULTS

The new substation at the Port of The Dalles was completed on schedule, ready to help BPA address the significant load growth in the area, especially from the addition of a third Google data center in the area. Its successful completion will help the community retain and attract large industrial corporations.

The work was completed while maintaining respectful relationships with stakeholders, including local tribal members concerned about culturally

sensitive areas affected by the project. Working within a relatively small footprint, we worked closely with BPA to optimize the layout to meet the utility's needs while maximizing the available space.

Project sequencing took advantage of the efficiencies and flexibility of the selected engineer-procure-construct (EPC) approach, leading to highly responsive scheduling and review processes. And the thorough safety protocols we established resulted in zero recordable incidents throughout the aggressive construction timeline.



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