



SUBSTATION DESIGN & COMMISSIONING

Patterson & Dewar Engineers, Inc. (P&D) specializes in designing and evaluating vital power delivery infrastructures for electrical cooperatives, municipalities, investor-owned utilities, and private entities, such as industrial facilities and data centers. We have designed hundreds of substations, ranging from 4kV to 500kV, throughout our 70+ year history. P&D has experience with varying project delivery methods, including design-build, owner's engineer, and engineering, procurement, and construction (EPC).

Substation design and construction have become increasingly intricate in response to changes in safety and regulatory requirements, shifts in environmental responsibility, advances in automation and communication, and the addition of distributed generation from renewable energy sources. Our team of electrical and civil engineers, designers, and project management professionals use their decades of experience to deliver turnkey substation solutions, from the initial planning phase to design and construction, all the way through testing and commissioning.

SERVICES

Project Management

- Cost estimations
- Scheduling
- Reliability analysis
- Equipment specifications & bid evaluations
- Construction contracts
- Construction management & inspections

Civil

- Site selection & land procurement
- Laser scanning of existing facilities
- Foundation design & grading plans
- Environmental assessments
- SPCC plans & oil spill containment

Protection & Controls

- SCADA system design, integration, & testing
- Forensic fault analysis
- Distributed generation & peak shaving interconnection
- Process bus & IEC 61850 integration
- Protective relaying & controls design
- Relay settings & testing procedures development
- Transmission system coordination

Physical

- Ground grid design & testing
- Bus work & switch layout
- Structural steel design
- Control house design

THE P&D DIFFERENCE

Our team understands the complexity of substation rebuilds, expansions, and greenfield projects. At P&D, we do not employ a "cookie-cutter" approach to substation design; rather, we deliver customized solutions to meet each client's needs. Our top priority is always completing the project on time and on budget because we appreciate the value of our client's investment. We have built our reputation by providing exacting attention to detail and consistent communication from project kickoff to completion. The depth of our substation experience, combined with the continuity and innovation of our staff, means your project will have consistent, informed partners committed to exceeding your expectations.

For more information, please contact
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**patterson
& dewar**
ENGINEERS

OUR LOCATIONS

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