



# DUANE PHILLIPS

Constructability Lead  
Stanley Consultants  
Experience Since 1984.

## Education

U.S. Navy Technical Engineering Program - Nuclear Engineering

U.S. Navy Technical Engineering Program - Electrical Engineering

## Professional Registration

Master Project Manager (MPM)

## Professional Papers and Presentations

"Transmission Line Design 201", 53<sup>rd</sup> Annual Minnesota Power System Conference (MIPSYCON).

"Distribution Analysis: How's Your System", 53<sup>rd</sup> Annual Minnesota Power System Conference (MIPSYCON).

"River Bank Foundation Design & Construction", 52<sup>nd</sup> Annual Minnesota Power Systems Conference (MIPSYCON).

"Project & Construction Management Techniques", 51<sup>st</sup> Annual Minnesota Power Systems Conference (MIPSYCON).

"Long Span Design", 50<sup>th</sup> Annual Minnesota Power Systems Conference (MIPSYCON).

"Transmission Line Design 102," 49<sup>th</sup> Annual Minnesota Power Systems Conference (MIPSYCON).

"Transmission Line Design 101," 48<sup>th</sup> Annual Minnesota Power Systems Conference (MIPSYCON).

Duane has more than 30 years of experience in construction and operational management. He has led a number of projects across broad range of areas in electrical layout, from generation to distribution. Responsible for project scope, technical design, coordination, construction, and scheduling.

Duane has served at the managerial level for several large utilities, with experience leading work groups in generation, transmission, substation, and distribution areas of expertise. Project management experience includes leading numerous projects from both the construction and design/development perspective.

Duane has developed and published several training manuals and curriculum specializing in construction and maintenance supervision and management, project management skills and practices, leadership in technical organizations, and advanced engineering principles.

## PROJECT EXPERIENCE

### USS 69 kV Line Evaluation, Primary Energy Recycling, IN/IL

Project Engineer and Construction Manager for facility assessment of existing transmission and delivery services and feasibility for future development. Responsible for determining facility components and conditions, and providing engineering and construction assessment for future viable alternatives for usage.

### 345 kV Antelope Valley-Neset Transmission Project, Basin Electric Power Cooperative, ND

Construction Manager responsible for budget and schedule control, contract tendering, client liaison, contract administration, preparing reports, and quality assurance/control. Work scope included development of construction work plans and schedules, substation testing plans, integration of transmission and substation construction efforts, and oversight of all field activities during construction of 270+ miles of single- and double-circuit transmission, plus construction of four new substations and modifications to four existing substations.

### 345 kV Center Red River Transmission Line, Minnkota Power Cooperative, ND

Project and Construction Manager responsible for budget and schedule control, contract tendering, client liaison, contract administration, preparing reports, and quality assurance/control. Stanley Consultants provided detailed design and engineering, corridor and route selection, land acquisition, survey, permitting, public involvement support, project scheduling and controls, and construction management services to develop 260 miles of single-circuit 345 kV transmission line. Construction Management included development of procurement and contractor bid packages, review and recommendations for selection, material management, oversight of all contractors and construction activities, construction scheduling, cost analysis & forecasting, invoice reviews, and field safety performance.

### 138 kV Transmission Line Extension, Lansing Board of Water & Light, MI

Construction Coordinator. Reviewed and approved construction plans for a new eight-mile 138 kV single circuit transmission line with distribution underbuild through urban Lansing, MI.

## **Boonville System Valuation, Vectren, IN**

Project Principal/Senior Engineer for facility assessment of existing power delivery system. Valuation includes present day value of facility and system, and considers system changes and improvements over defined valuation period and system improvements and operations.

## **Generating Switchyard Upgrade; PSEG, NJ**

Project Manager responsible for capacity and operational upgrades to 2 large generating plant outgoing power switchyards and plant distribution ring bus switchyards. Switchyard capacities were 1230 MWe and 1170 MWe and included main power transformer upgrade, distribution design, circuit breaker design, protective relaying, and bus work & support systems enhancement for 500kV transmission system..

## **Transmission Line Switching; Niagara Mohawk; NY**

Project Manager responsible for re-design of 52 miles and 9 nodal sections of 500kV, 345kV and 115kV transmission systems following operational problems. Involved transmission system operational modeling and re-design of switching devices, system connection points, line capacity, protective relaying, and system controls.

## **Distribution Capacity Upgrades, Xcel Energy, MN**

Project/Construction Manager for design approval and construction oversight for numerous distribution upgrade projects in large regional area. Projects ranged from distribution feeder underground cable, to distribution overhead feeders, and substation distribution feeder including protective relaying and switching devices. Over two (2) year period, projects totaled \$4+ million in project work.

## **Transmission – Northfield to Faribault, Xcel Energy, MN**

Construction Manager for construction phase. Reviewed and approved construction plans for 8.5 miles of 115kV transmission line and 5 miles of 12.5kV distribution underbuild. Oversight of contract construction work force including review & approval of invoices & reporting.

## **Stewart Substation & Distribution Conversion, Xcel Energy, MN**

Project/Construction Manager responsible for the design, permitting, procurement, and construction of 5MVA rural electric substation, and conversion of distribution system from 4kV to 12.5kV. Conversion included replacement of 17 miles of cable, cable support, and distribution transformers. Substation design & construction was completely new design and materials, including bus design & construction, relay & control design & settings, and commissioning testing of new substation.

## **Substation Relay Upgrades, United Illuminating, CT**

Project/Construction Manager for wide spread substation relay upgrades and change outs. Project included 24 substations (115kV and 345kV) in a shift from electro-mechanical to microprocessor protection relays. Included design of new protection schemes, relay design & settings, development of new testing procedures and protocols, and oversight of construction.

**Operational Management** positions overseeing design, construction, and maintenance of transmission and substation system from 69kV to 500kV. Positions involved responsibility for all aspects of system design, performance, planning, and operations.

Manager – Transmission & Substation - United Illuminating

Manager – Power Distribution & Controls - PSEG

Work Control/Planning Superintendent - Niagara Mohawk/Constellation

## **Professional Papers and Presentations (Cont.)**

"Alternatives in Combining Key Processes on Large Transmission Projects," Center for Power Systems Studies, College of Engineering, South Dakota State University, South Dakota Biannual Regional Power Conference.

## **Construction Practices**

- » Overhead Transmission → 69kV-500kV (AC & DC)
- » Underground Transmission → 12.6kV-345kV (AC & DC)
- » Substation, 12.6kV-500kV → civil, physical, electrical, P&C
- » Foundation → drilled pier, helical, direct embed
- » Civil → site access, road development/maintenance, restoration
- » Environmental Compliance Inspections
- » SWPPP Inspections
- » Overhead/Underground Distribution → 7.6kV-34.5kV
- » Material Management & Inspections
- » Commissioning Testing
- » Route & Corridor Selection & Assessment
- » RTO/ISO System Impact Studies
- » RTO/ISO Feasibility Studies
- » Transmission & Distribution System Analysis
- » Constructability Review & Analysis