



STATCOM DESIGN & INTEGRATION TO UTILITY SUBSTATION

CLIENT: Confidential

LOCATION: Maine

START DATE: August 2022

COMPLETION DATE: May 2024

PROJECT DETAILS

RLC Engineering was contracted by two clients working together on a mutual project which included a Utility and a STATCOM (Static Synchronous Compensator Solutions) Equipment Manufacturer to lead the engineering efforts for the installation of a new 150 MVAR STATCOM at an existing utility substation.

For the utility, RLC provided comprehensive engineering services for the addition of a new breaker to the existing ring bus and the design of an additional 115 kV overhead strain bus to connect the STATCOM to the ring bus. This includes the manipulation of existing protective schemes to be integrated with the new protection of the bus and STATCOM control.

For the equipment manufacturer's scope of work, our team integrated the utility design of the STATCOM outdoor electrical equipment to the vendor-provided indoor STATCOM valve hall. This included the design for the main power transformer, reactors, switches, and foundations. RLC was responsible for the creation of all the protective equipment relay zones and integration of equipment controls to the STATCOM valve PLC system. RLC provided support and guidance for multinational engineers on ANSI standards and regional control operational excellence. Additionally, RLC was active

in coordination with all parties and ensured seamless integration and operational efficiency during design and construction.

SCOPE OF SERVICES

- Designed the breaker addition & protection expansion for STATCOM tie in on the utility's existing 115 kV ring bus.
- Secured Department of Environmental Protection (DEP) and town permits.
- Developed the utility's integration plan for the 150 MVAR STATCOM.
- Engineered the full outdoor above and below-grade design, including civil, structural, and electrical for the STATCOM Yard.
- Provided SCADA guidance for Utility monitoring, control, and operation of the STATCOM by creating DNP lists and comm connections.
- Integrated mixed system drawing design and management for all parties for ease of construction.
- Provided protection and control settings review and system coordination for the STATCOM and utility protection relays.
- Provided construction support services including RFI's, submittal reviews, and overall construction and coordination.

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