



TRANSMISSION LIGHTNING ARRESTER APPLICATION STUDY

CLIENT: Confidential

LOCATION: Various Locations in NH, MA, CT

CONTRACT VALUE: Less than \$1M

START DATE: May 2016

COMPLETION DATE: September 2016

PROJECT DETAILS

The Transmission Lightning Arrester Application Study project was an investigation into line outages caused by lightning events on certain transmission lines. The Utility requested a review of the lightning related outages to determine if the frequency of these outages were outside the norm and if design modifications may be able to improve the performance of those lines. RLC was responsible for investigating the causes and made recommendations on potential mitigation options based on our field inspections. The intent of this investigation was to determine the most feasible mitigation alternative to reduce the number of outages caused by lightning.

SCOPE OF SERVICES

- Reviewed Utilities' records for outage rates per year caused by lightning events
- Developed criteria for ranking the level of importance on each line.
- Reviewed the selected lines and analyzed possible commonalities that might contribute to susceptibility (geography, structure type, shielding configuration, grounding design, arrester types and ratings, design parameters).
- Determined the location of electrical faults on transmission lines from field data collected (Vaisala or Digital Fault Recorder (DFR)).
- Conducted on-site investigation by performing field walk-down in area where fault occurred.
- Documented results of field investigations and any findings in a summary report.
- Developed and summarized mitigation options that were recommended for each line and type.
- Identified recommended applications of the preferred mitigation (line arrestors) and assisted the client with development of internal project approval and budget request documentation.