

Safety and Reliability for a Senior Community



Upscale golf and retirement community began experiencing frequent unplanned power outages

HIGHLIGHTS

OVERVIEW

Local utility began to address the reliability of this community by replacing faulted underground power cables and while this helped reduce the number of outages temporarily, the failures still began to add up.

CHALLENGE

Working in a retirement community had its challenges since health and safety was a major concern. Also, allowing the Country Club to host special events such as golf events and weddings without the threat of a power outage was paramount.

RESULTS

IMCORP's Factory Grade® technology allowed the utility to maximize efficiency by identifying and addressing only the substandard cables, eliminating 80% of the cable replacement activities.

A southeastern upscale golf and retirement community began experiencing frequent unplanned power outages at a rate of approximately two failures per month. Reliability was a major concern because it caused potential safety issues for some residents due to their reliance of powered medical equipment.

The utility began to address the reliability issues of this community by replacing faulted underground power cables and while this helped reduce the number of outages temporarily, the failures still were occurring. Approximately 41 miles of underground cables were used to supply electricity to the community. The utility attempted to replace the cable over a period of nine years and the failure rates improved slightly to approximately one cable failure per month, but there were still unplanned outages. As a result, the utility decided to use IMCORP's Factory Grade® technology to assess the underground cable systems' health and identify those cables at risk of failure.

The utility and IMCORP developed a tailored program to minimize outages while assessing all 41 miles of cable, which equated to 545 spans. Out of the 545 spans, IMCORP identified 45 cables that required repairs and 107 cables requiring replacement. During the replacement of substandard cables, upgrades were made to the infrastructure by adding overvoltage protection to ensure the now certified 41 miles of underground cable would maintain their long-term reliability.

The utility was able to address the community's cable systems in a more timely manner because approximately 80% of the cables met standards and were left in the ground. By using IMCORP's Factory Grade® technology, it allowed the utility to minimize spend, address the substandard cables efficiently, eliminate unnecessary civil work, and reduce the number of outages that would have been required for cable replacement activities. Ultimately, the utility's main goal was achieved by restoring peace of mind to this large retirement community that their lights will stay on and providing the Country Club the confidence that they could host the many special events without any disruptions.



The Manufacturers' Standards



Component Standard	Testing Frequency	Thresholds*	
		Sensitivity	Voltage
Terminations IEEE 48	50/60 Hz	5pC	≤ 1.5 Uo
Joints IEEE 404	50/60 Hz	5pC	≤ 1.5 Uo
Separable Connectors IEEE 386	50/60 Hz	5pC	≤ 1.3 Uo
MV Extruded Cable ICEAS-97/94-682/649	50/60 Hz	5pC	≤ 4.0 Uo [†]
HV / EHV Extruded Cable ICEAS-108-720	50/60 Hz	5pC	≤ 2.0 Uo

* No partial discharge should be observable above the sensitivity threshold up to the voltage threshold
[†]200 V/mil

