CASE STUDY

elastimold®

200 A Loadbreak repair and replacement elbows

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The ABB Elastimold® 15/25 kV, 200 A loadbreak repair and replacement elbows are primarily designed to assist customers make the transition from live-front to dead-front without requiring the need to splice or pull new cable.

01 Repair elbow with test point

02 Replacement elbow with test point

Abstract

Several investor-owned utilities in California were faced with the challenge of aging infrastructure and decreasing reliability. After experiencing extended power outages due to issues such as corrosion, wildlife damage and deferred maintenance, they identified the need to replace their existing live-front padmounted switchgear and transformers with new dead-front equipment. Their efforts were challenged by issues relating to systems incorporating many different types of switchgear and transformer designs resulting in the following:

- Varying bushing termination heights
- Lack of existing cable to establish connections to new dead-front switchgear
- Increased hours of labor if cable splicing or pulling new cable was required

Solution

The ABB Elastimold 15/25 kV, 200 amp loadbreak repair and replacement elbows are primarily designed to assist customers make the transition from live-front to dead-front equipment without the need to splice or pull new cable. The repair elbow (figure 1) has an extended housing and compression lug length 3¼" larger than the standard elbow, while the replacement elbow (figure 2) extends its housing and compression lug length to 8⅞" over today's standard elbow. Both elbows are available with or without a capacitive test point. The capacitive test point provides the user with the option of testing the circuit for the presence of voltage. The elbows are ideal for live-front to dead-front conversions and can make up the difference in height when the existing cables are too short. In addition to retrofitting switchgear, this extra length allows customers to make up the bushing height difference for other applications such as:

- When cables have been terminated incorrectly
- In the event of a cable or elbow failure
- When needing to connect a new apparatus to existing cables

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01 Repair elbow with test point
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02 Replacement elbow with test point

Conclusion

The dead-front construction of the ABB Elastimold 200 A loadbreak elbows insulates, shields and eliminates exposure to live components. The special formulation of EPDM rubber, which is non-rigid, allows for expansion and a more controlled release of the gases that build up during a failure. At ABB, safety is our number one priority. Therefore, before they leave our factory, we test every manufactured Elastimold component for corona voltage level, AC withstand voltage or impulse withstand voltage (BIL) and test point operability per the requirements outlined in the ANSI/IEEE 386-2006 standard. This Elastimold extended-length solution has been available for several years, and customers have benefited by being able to retrofit new switchgear to existing cables without the need to splice cable or pull new cable, saving time and money.

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