THE DISTRIBUTOR

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Pulling together for the win

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EDA

The Voice of Ontario's Electricity Distributors

Energy Ottawa works with Canada's research powerhouse on cable testing

Energy Ottawa, an EDA Affiliate Member, is Ontario's largest municipal producer of green power and an affiliate of Hydro Ottawa. With the launch of its new division, Infrastructure Management, Energy Ottawa will provide services dedicated to supporting utilities with their critical infrastructure. The division has established a number of partnerships recently and announced multiple new services – one of which includes non-destructive cable testing.

IMPROVING RELIABILITY AND PROTECTING VALUED ASSETS

Asset management has become a primary focus for many utilities as capital budgets are limited and infrastructure continues to age. Enhancing reliability in this competitive energy market will come from strategic planning aimed at diagnosing the condition of utilities' valued assets.

Energy Ottawa, in collaboration with the National Research Council Canada (NRC) is offering an exclusive and innovative non-destructive cable testing service that will diagnose the condition of Crosslinked Polyethylene (XLPE) underground power cables, while preserving the cable's integrity.

HOW IT WORKS:

For the past six years, Hydro Ottawa has had distribution cables successfully diagnosed using the method developed by NRC without compromising the cable's integrity. Unlike traditional testing methods, this method is based on the DC Polarization/Depolarization Current Measurement principle, which results in a health index for plastic-insulated cables.

One of the main aging mechanisms of underground XLPE cables is the development of water trees – small, tree-shaped channels of moisture and ionic impurities that diffuse within the insulation of the cable. Over time, water trees can grow and degrade the quality of the insulation. The new health index assesses the condition of the cable based on the progression of water trees.

Traditional health diagnostic tests apply 150 per cent of the cable's voltage rating, which further stresses the cables and potentially accelerates their deterioration. The new method applies a maximum of 1,000 volts DC, just four per cent of the rating of a 28 kilovolt cable. This allows utilities to easily measure the health of their systems,

> "This ultimately saves the utility valuable resources and provides confidence in knowing that the cables being replaced actually warrant it."

Alana Jones, a test engineer for Energy Ottawa, performs a cable test.

insure against premature, costly replacements and provide lasting value into the future. In fact, the method can defer replacement costs of up to 500 per cent of the cost of cable testing and extend the cable's lifespan by an average of five to ten years.

"With a large aging cable population, working within a limited budget for asset replacement, it's important to know the true condition of our cable," says Bill Bennett, Hydro Ottawa's Director of Distribution Asset Management. "Hydro Ottawa has been using the NRC methodology for several years. It is a trusted, non-destructive method for asset management that helps us to effectively manage our aging cable population, enabling us to maintain the reliability of our underground distribution system."

Simply replacing cables based on their age would be an ineffective use of capital dollars as the age of a cable is not always an indication of a cable's health. Hydro Ottawa has been prioritizing its replacement projects based on findings from this novel testing method. This ultimately saves the utility valuable resources and provides confidence in knowing that the cables being replaced actually warrant it.

Energy Ottawa is thrilled to be working alongside NRC's world-class metrological experts to provide assistance to local distribution companies to diagnose the condition of their cable assets.

Energy Ottawa, an EDA Affiliate Member, is a diversified and innovative energy company that generates green power and offers an extensive range of energy management and procurement services to a wide variety of customers. A wholly-owned subsidiary of Hydro Ottawa Holding Inc., Energy Ottawa is committed to the highest standards of customer service and environmental responsibility.