



# CASE STUDY

## INFRATECH PREVENTS COSTLY OUTAGE BY CREATING A "SAFETY BARRIER"

### SUMMARY

Difficult situations sometimes inspire ingenious solutions. Infratech employees working on cable restoration jobs for their customers were faced with the problem of not having adequate insulated cover when working in energized vault switch cabinets. This makes it necessary to de-energize these cabinets resulting in outages for our customer's customer. Pre-arranged outages are costly to our customers but it is the only way to perform work safely when proper insulated cover is not available. The Infratech Safety & Training Group devised a versatile insulated cover, so work could be performed safely on de-energized portions of energized cabinets.

### THE SITUATION

To work in an energized vault switch cabinet, it is necessary to de-energize the cabinet. This translates to:

- Having to inform home owners and commercial enterprises of the planned outage
- Great inconvenience to the customers
- The utility forfeits revenues
- Scheduling issues
- Extended outages because it takes time to de-energize and then re-energize the facilities



### THE SOLUTION

Faced with the challenge of not being able to insulate & isolate energized switch gear parts in close proximity to the work area, Infratech employees from the Safety & Training Group decided to form a team. This team was to come up with a safe and efficient way to provide adequate insulated cover for these vault switches in the cabinets. They first looked at switch cabinets with insulated cover designed into the switch cabinet, to see if they could replicate the design in a portable unit that could be placed in the switch cabinets. After evaluating the different switch cabinets that provided insulated cover as part of the cabinet design, the team went to work.

Infratech's customer shared information on a previous project where they had a manufacturer construct an insulated cover for a different application. A partnership was formed between Infratech, our customer and the manufacturer. The manufacturer provided specifications on insulated materials, their dielectric capability and their ability to form them into different shapes and sizes. Our customer provided technical assistance and a vault switch cabinet with the two different type switch gears being used on their system.

This allowed the team to measure and fit a prototype cover in the different applications of the cabinets and switch gears used. There was a lot of trial and error in designing and fitting the insulated cover. It was necessary to keep the number of pieces to a minimum to reduce assembly time on site and to prevent confusion in the correct placement of pieces in the different combinations of switches and cabinets.

Collaborating with our partners was extremely helpful since developing this custom solution would not have been possible in an energized switch cabinet.

Together, we were able to design and successfully test two different sets of insulated covers that fit the different sizes and types of cabinets and switch gear used by our customer.





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#### THE SOLUTION *continued*

The Team ended up with two kits containing numbered pieces stored in bags with separate compartments to keep pieces separate. This makes assembly an easy 1-2-3 process and prevents damage to the pieces because they don't touch.

Infratech also developed a training program to teach employees the proper use and care of our vault switch cabinet cover. The instructions cover using proper Personal Protective Equipment (PPE) and work methods involved. They must also successfully pass a written test and demonstrate the ability to properly install and remove the cover using correct PPE and Work Procedures.

Images are of two different sets of Vault Switch Cabinet Cover; installed in two different cabinets with two different types of switch gear.

The Insulated Cover is made of 3/16" (177 mil) thick Makrolon GP Sheets of transparent Polycarbonate, having the dielectric properties listed below.

Dielectric Strength:      ASTM D149      V/mil      380  
(177 mil x 380 volts pre mil = 67,260 V)



#### THE RESULT

Using these insulated covers provides a safe way to perform cable rehab work in energized vault switch cabinets without the need to have our clients inconvenience their customers with outages to perform this work. The average outage time required to swap over to the new cable takes 1 hour. De-energizing and re-energizing takes 1 hour. 2 hours of power outage to customers, especially on the commercial side can mean lost revenue. With the insulated cover there is no outage and the job can be done in less time. A win-win for everyone!

**TO FIND OUT MORE ABOUT SOME OF THE SOLUTIONS WE FOUND FOR  
COMPLEX CHALLENGES AND CRITICAL SAFETY ISSUES, CALL 770-792-8700.**