



# Worker electrocuted

September 29, 2021

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## **The contents of this report**

This document reports the Alberta Occupational Health and Safety (OHS) investigation of a fatal incident that occurred in September 2021. It begins with a short summary of what happened. The rest of the report covers this same information in greater detail.

## **Incident summary**

A Journeyman Electrician was conducting thermal imaging of electrical systems in an electrical room at the Southcentre Mall in Calgary when they were fatally injured after coming into contact with an energized high-voltage transformer.

## **Background information**

### **Owner**

Oxford Properties Group (Oxford) was a property management company which managed properties on four continents. The company was based in Toronto, Ontario and had offices in Calgary, Alberta. Oxford owned and managed the Southcentre Mall in Calgary, Alberta. Oxford had retained Encore Electrical Services Inc. to provide preventative maintenance services on the electrical system at the Southcentre Mall.

### **Employer**

Encore Electrical Services Inc. (Encore) was a family owned and operated electrical contractor founded in 2010. Encore had operations in Calgary, Edmonton, Nanaimo and surrounding areas. Encore specialized in commercial, industrial electrical, voice, data, networking, fire alarm, AV installations and service.

Encore employed both the Journeyman Electrician and the Apprentice Electrician.

### **Journeyman Electrician**

The Journeyman Electrician was certified as a journeyman in the Province of Alberta and was also a Red Seal electrician. The Journeyman Electrician had ten years of experience and had been employed by Encore since November 2019. At the time of the incident on September 29, 2021, the Journeyman Electrician was a project manager for Encore and was responsible for the preventative maintenance activities at the Southcentre Mall.

### **Apprentice Electrician**

The Apprentice Electrician was a second year electrician and had been employed by Encore since May 2019. The Apprentice Electrician was assisting the Journeyman Electrician with the thermal imaging work at Southcentre Mall.

## Work site, equipment and materials

### Work site

Southcentre Mall was an approximately 97 743 square metre (1 052 107 square foot) facility which had over 190 retail stores (Figure 1).

The facility had first opened in October 1974, and had undergone expansions in 1986, 1988, 1999, and 2009.

Southcentre Mall was owned by Oxford Properties and was managed by Oxford Properties Group.

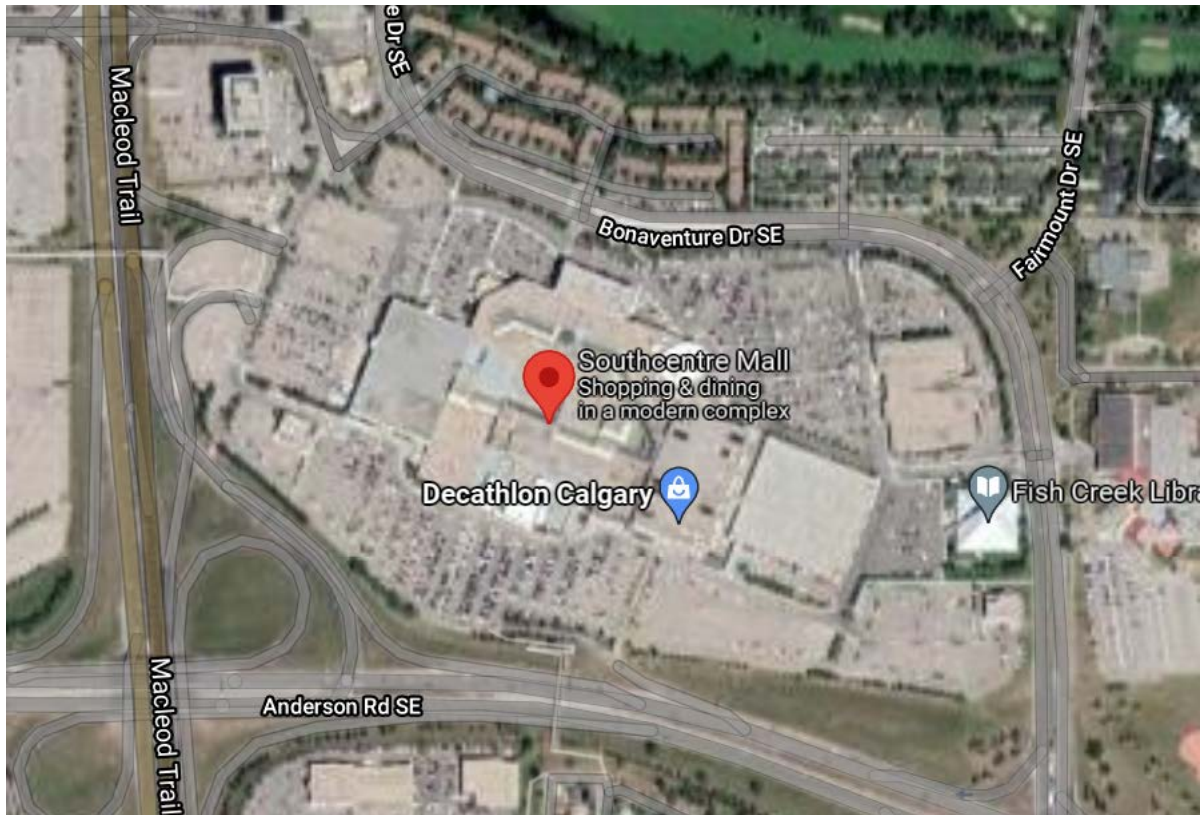


Figure 1. Aerial view of Southcentre Mall (Google map view)

## North electrical room

The North Electrical Room (Room 110) contained both low voltage and high voltage electrical equipment (Figure 4). The low voltage equipment was located around the periphery of the room, while the high voltage equipment, which consisted of a high-voltage electrical transformer (identified as T-13) and associated switchgear, was located in the centre of the room.

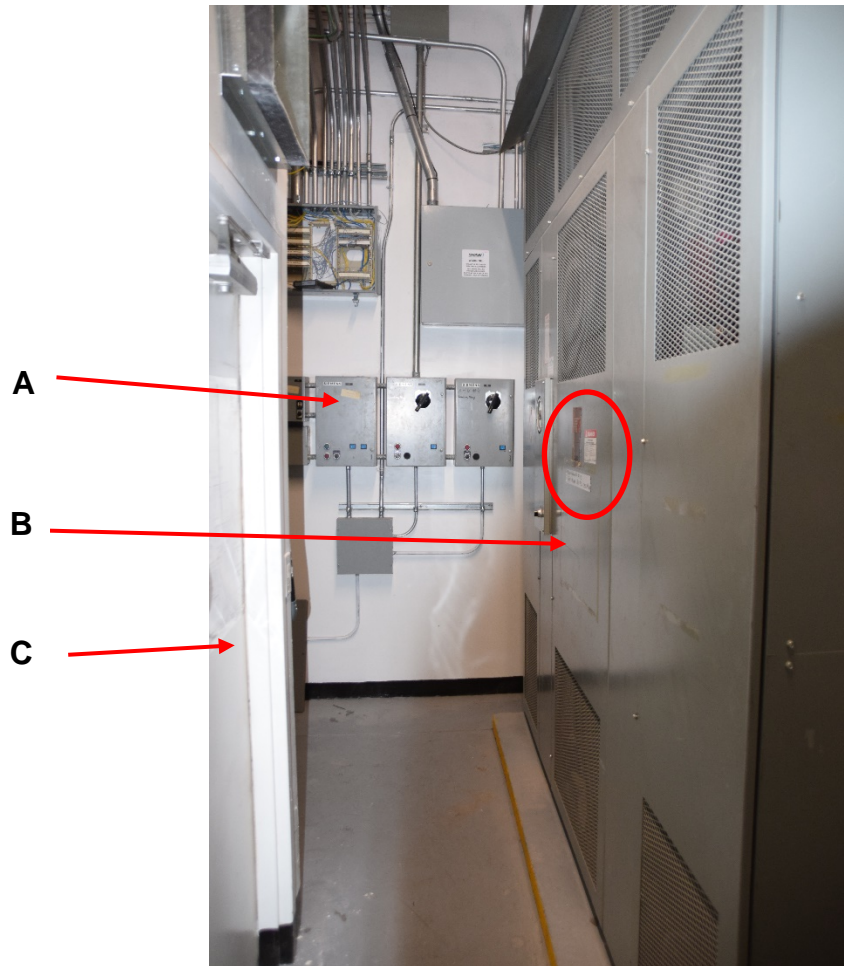


Figure 2. Room 110 as viewed looking to the left of the door.

- A. Identifies some of the low voltage electrical panels located on the periphery of the room
- B. Identifies transformer T-13 (Circle indicates the labels shown in Figures 3 and 4)
- C. Identifies the location of the door to enter Room 110

### High-voltage electrical transformer

The electrical transformer involved in the incident was a Polygon 13 800 V 1000/1333 kilovolt-ampere (kV-A) transformer (identified as T-13) that had been manufactured by the Polygon Jefferson Electric Co. in 1987 (Figures 3 and 4). This unit was a three-phase, dry-type power transformer and was located in Room 110 in the Southcentre Mall.

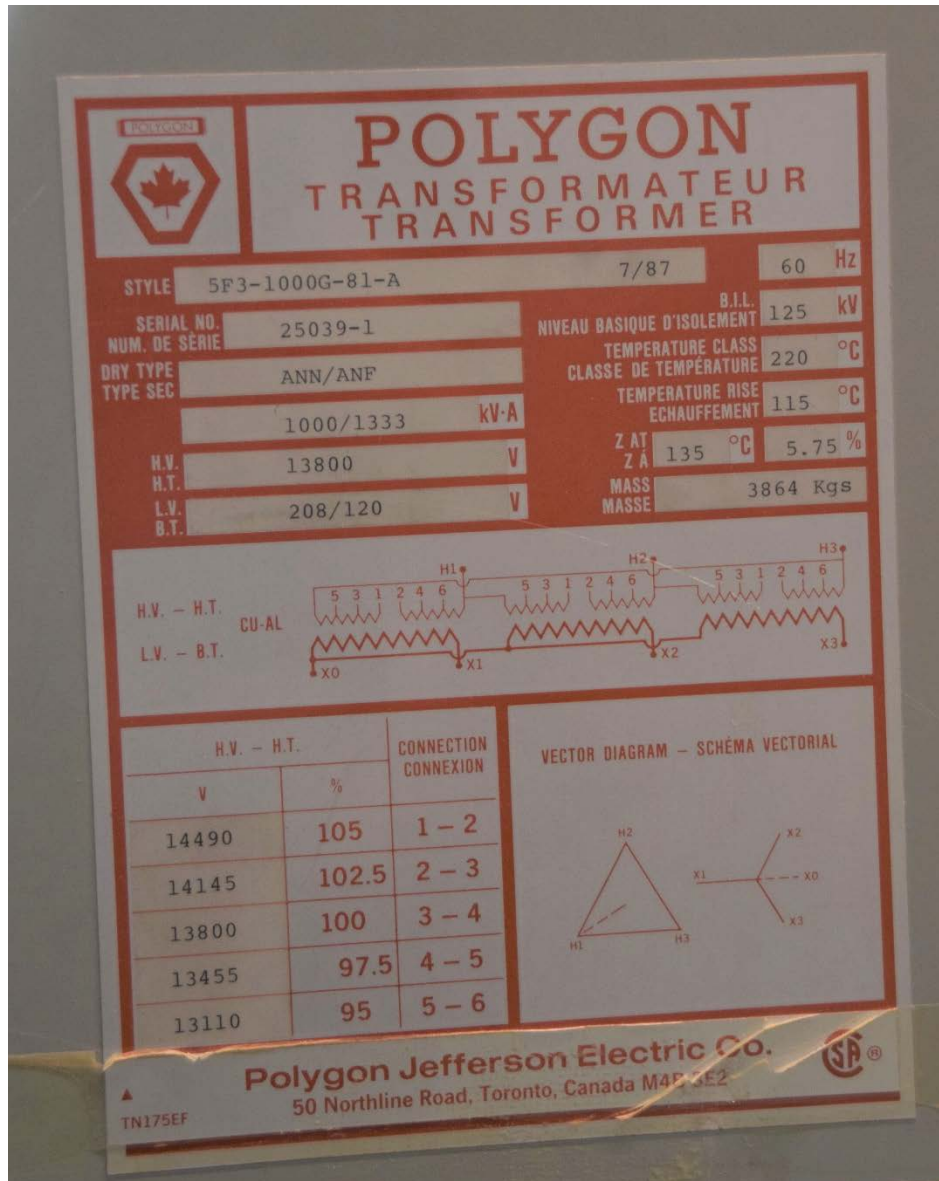


Figure 3. Manufacturer plate on electrical transformer T-13



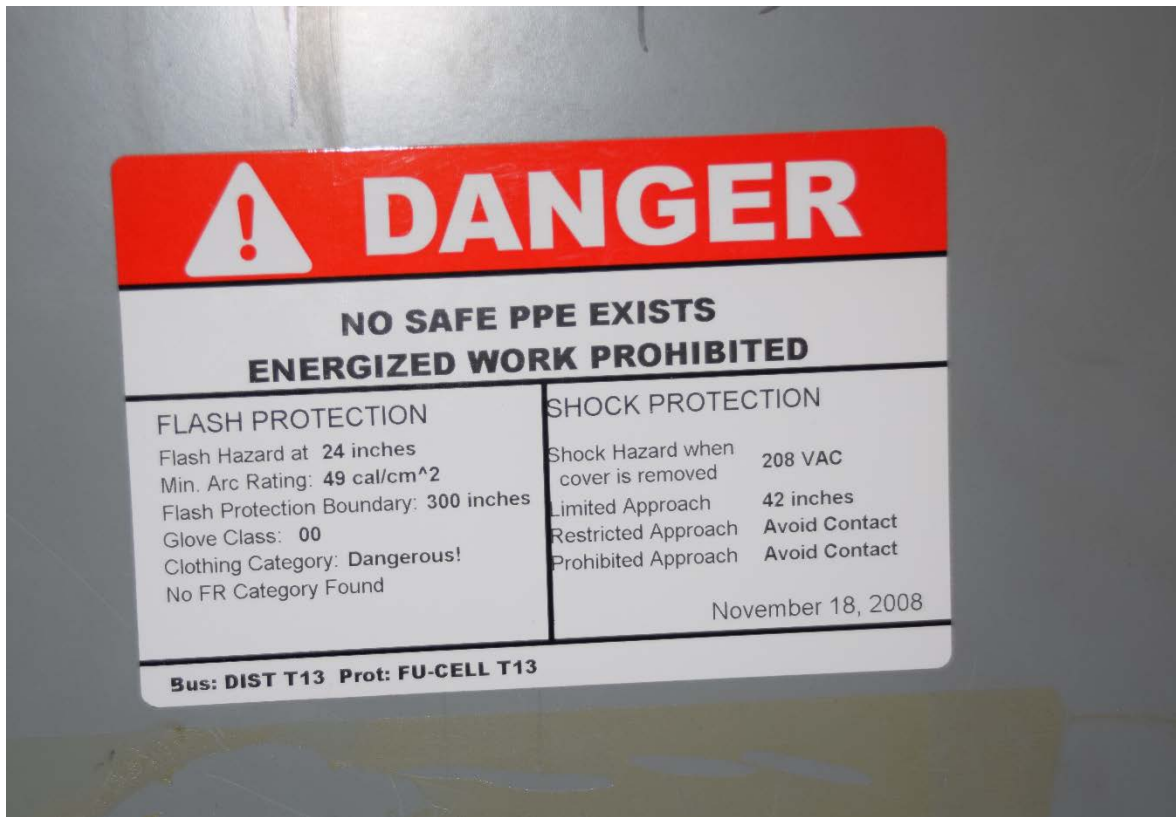


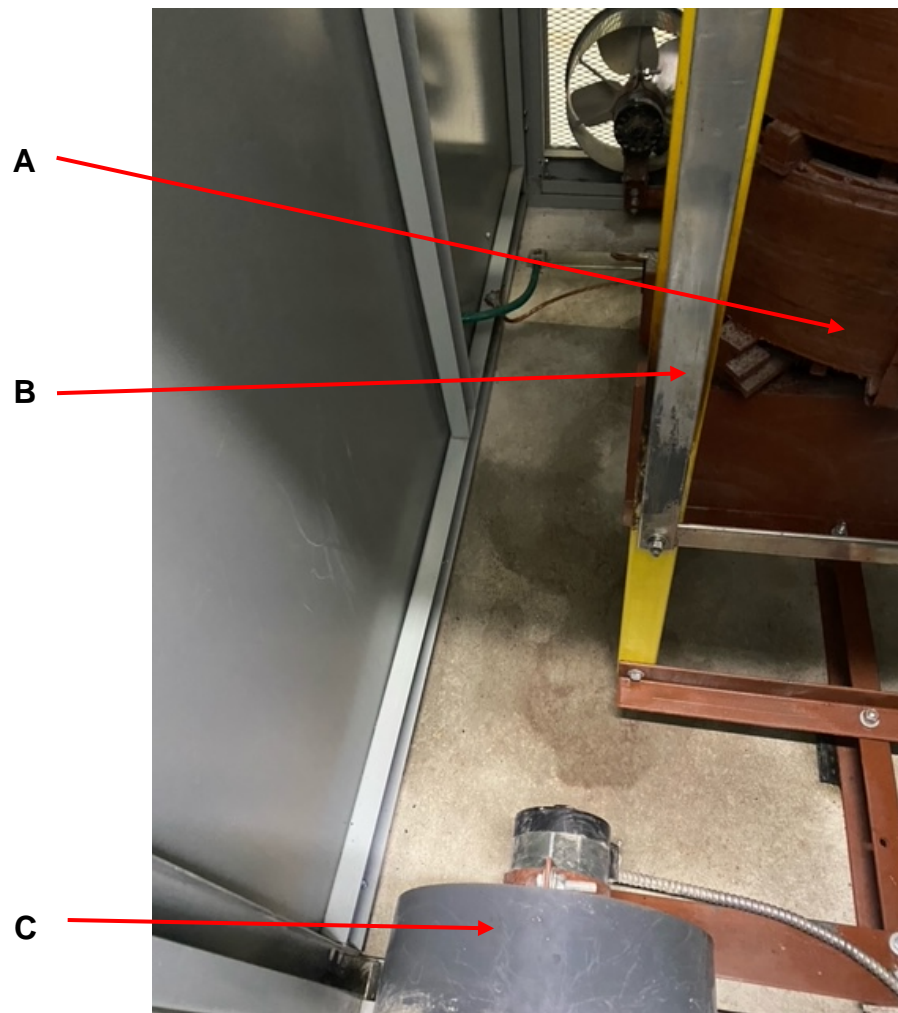
Figure 4. Danger warning on electrical transformer T-13

### Sequence of events

On September 29, 2021, a Journeyman Electrician and an Apprentice Electrician employed by Encore were assigned to conduct a thermal imaging assessment of the low voltage (600 V or less) electrical systems at the Southcentre Mall. The assessment was part of the project planning to identify preventative maintenance work that needed to be scheduled for an upcoming, planned electrical shutdown. All work on the high-voltage electrical systems was to be arranged by Encore with a specialized high-voltage electrical contractor.

The two electricians were working in Room 110.

The electricians had completed the thermal imaging of the low voltage equipment, and the Journeyman Electrician had cleaned the various electrical panels and had tightened electrical connections in the low voltage panels. Once this was completed, the Journeyman Electrician had moved to the area behind transformer T-13 and proceeded to open the back panel to transformer cell H3. The Journeyman Electrician came into contact with the energized busbar on transformer cell H3 and was fatally electrocuted (Figure 5).



*Figure 5. View inside the cabinet of electrical transformer T-13 (Photograph submitted to Occupational Health and Safety by Oxford Properties Group)*

*A. Identifies the transformer cell H-3*

*B. Identifies the H3 busbar*

*C. Identifies the fan that the worker was laying on at the time of incident*

As a result of the incident, all electrical power to the Southcentre Mall was cut by ENMAX Corporation linesmen in order to effect a rescue of the Journeyman Electrician. The power to the Southcentre Mall was not restored by ENMAX Corporation until the electrical equipment in the North Electrical Room had been completely isolated.

The Journeyman Electrician was pronounced deceased on scene by Calgary Emergency Medical Services.

### **Completion**

A review for enforcement action was completed on August 11, 2022, and it was determined that prosecution or an administrative penalty were not appropriate based on the circumstances surrounding this incident.

This investigation was completed on October 7, 2022.

## Signatures

ORIGINAL REPORT SIGNED

Lead Investigator

October 7, 2022

Date

ORIGINAL REPORT SIGNED

Manager

October 7, 2022

Date