

Backfeed on 13.2 Kv after a Summer storm

A customer called in with a problem that their generator would run for a short while then shut down. This sequence of event had been occurring for approximately 6 hours.

Twice, a service man was dispatched to the site with the returning comments “it was a problem on the customer’s side”.

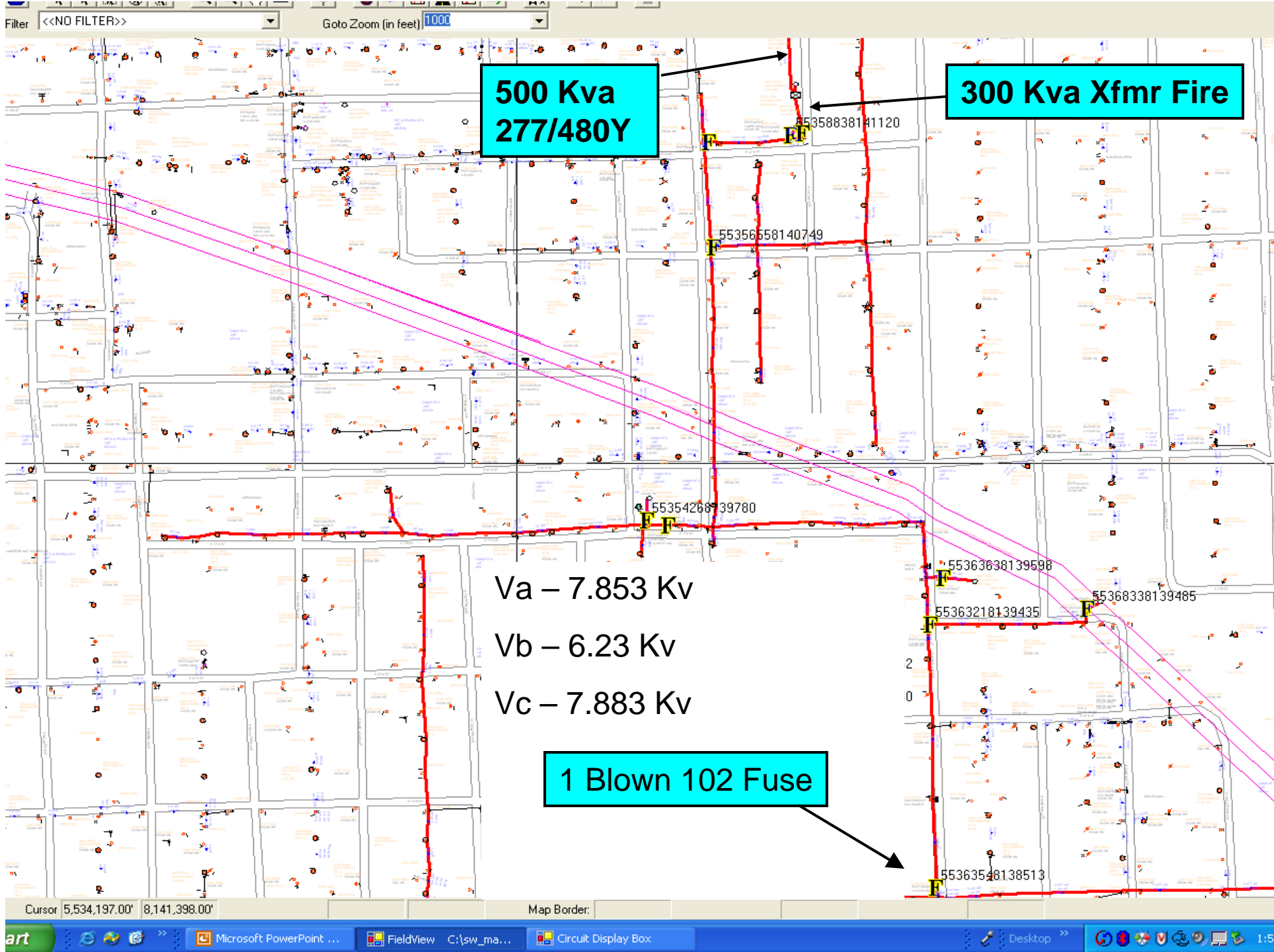
When traveling to the customer’s site, It was noticed that the lights at a car wash near the customer’s site, looked different as if there was a low level of flicker.

At the customer’s site;

Opened up the customer’s main disconnect

Measured the voltage LL & LN and discovered that one phase was 225 V LN on a 277/480 Xfmr.

There was a 300 Kva Xfmr on fire.



500 Kva
277/480Y

300 Kva Xfmr Fire

Va - 7.853 Kv
Vb - 6.23 Kv
Vc - 7.883 Kv

1 Blown 102 Fuse

So ...what's wrong?

On the same lateral, there is a small pocket of small industrial customers.

It was discovered that there were five transformer stations that were 120/240 4 wire closed delta stations with wye connections on the primary side.

The transformer stations were single bushing transformers and the primary side neutrals were solidly connected.