38th Storyworth: Where Were You On That Fateful Day?

This is a retrospective about 20 years ago today. The day had dawned bright and was looking to be like a wonderful early September morning throughout most of the Northeastern US and Canada. I was in Montreal to inspect and runoff a large power transformer which had recently been built at the nearby ABB plant, which would then be tested at Hydro-Quebec, an electrical grid source with testing facilities on the outskirts of Montreal. I had been there before for similar tests after first inspecting the transformer involved at the ABB plant during its manufacture and assembly.

As an aside, such manufacture involved winding copper coils, referred to as primary and secondary windings around sandwiched sheet steel cores needed to transfer the magnetic flux, and designed to step down from high voltages in the 4-21 KV range typically as you would observe on the large tower lines which run across the countryside to be the supply for all the electricity, then brought by a direct ratio of the number of windings in each, to the output voltage at a substation for local distribution, typically as observable on telephone poles. This intermediate voltage would then be stepped to the dual 120 V split phase (each 180 degrees out of phase from the other) as found in your typical home load center (breaker or fuse box) by smaller transformers either hung on the poles or placed on the ground where the wires are underground for that "last mile" distribution to the end users like homes and businesses.

The windings would be wrapped in special paper, and the whole assembly then placed in a large tank which would be filled with oil. Part of my role was to examine the assembly during the process to assure there would be no "hot spots" where arcing would be likely to occur, because such could destroy a transformer, and they had multiple-year turnaround to replace. Most of them also had a form of selector switch which could change the relative number of windings ratio to adjust for loading conditions on the grid and assure the proper voltage at each place along the system. Those switches were part of the inspection, as were checks to assure oil could flow readily for cooling by convection throughout the tank, most of which then also had radiators with fans designed to keep them at stable operating temperatures.

That temperature issue was one of the specific tests for which the unit was at Hydro-Quebec that morning; a heat run, which monitored the temperatures at various places in the unit to assure it never exceeded the specified range under loading, something which obviously would require substantial real power consumption, which is why it had to be done where it was.

Interestingly, I had recently developed a spreadsheet with predictive calculations which would evaluate and "alarm" if anywhere was beyond that spec during the run, but also assure adequate time at temperature to be sure it reached stability, or equilibrium, as the spec called for it to be at that operating temperature with, and without, fan operations for specified times. That spreadsheet tool had been used by me only once before, at the KEMA test facility near Philadelphia PA on another piece of equipment, a "bus duct", which is a large pipe-like conductor. As you might guess, the currents involved are enormous. But the heat run concept is similar for all, and was one of the tests I was intending to perform that morning at Hydro-Quebec on the ABB Transformer.

Montreal is in Canada, and specifically in a French speaking province called Quebec, and is about four hours drive from where I lived at the time in a NW suburb of Syracuse NY called Liverpool. I had flown up, which was typical, as each of the steps of inspection and testing required a few days between, during which time I would be visiting other vendor's facilities as a contracting Sourcing Quality Engineer for GE Power. So I would potentially even be on another continent between the relative steps involved.

As you dear readers might recall from other things I have published, I have friends all over the world I have met because of such work, as well as my participation in the (PCA) Porsche Club of America, the largest single-brand car club in the world. As things happened, such friendships proved to be very useful over the subsequent hours and days twenty years ago today, because in Montreal, many people are not bi-lingual, and I certainly knew very little French myself. As with most global work, interpreters were usually assigned by the vendors to assist me in my role when English was not the native tongue in the area. However, that morning, the people working in the testing lab and I were expecting to merely do a rote review of specs and calibrations, so an interpreter was not directly expected except for final review.

Mid morning one of the techs grabbed my arm and started pulling me to their break room, where they had been watching TV and saw a replay of video of a plane hitting one of the World Trade Center towers in New York City. It was an English-speaking channel, and I had a "translator box" which could help with converting words between languages, which I used in my global travels a lot. Helped for finding meals and the like ;-)

As we were watching that video, we saw the second plane come from behind the second tower and explode in a fireball as it hit the tower. I had just been trying to explain to the folks there that it could possibly have been an accident, although it would have been rare for a flight to be that low in the vicinity of Manhattan. When the second plane hit I said, "That was no accident – we are being attacked, and they are using airliners as guided missiles". You can imagine how frantically I was working the "translator" trying to find equivalency in French.

Obviously, the news media then erupted with all the reactions, which went on throughout the day, including the fact of grounding all aircraft and closing the border. Since I was not a native speaker, things were about to become weird for me as well, trying to deal with all that and to assure MY family I was safe and would find some way to get back to them as soon as possible.

My first step was to contact my bi-lingual friend from the PCA, Louise, whose son and she lived in Montreal proper. She graciously offered to house me and become my translator while we worked whatever was required, and for which I am eternally grateful. We eventually arranged for me to get a rental car at the airport, where I don't think their original schedule for arrivals was going to stay intact for very long, and by the fourth day we had determined my best method would be to drive down via the ONLY remaining open border crossing, that of the Mohawk Indian Reservation in North Central NY State, which happened ONLY because it was considered a sovereign country at peace with both the USA and Canada.

Having attended Clarkson at Potsdam, then worked many years later in Ogdensburg, I was pretty familiar with the North Country roads down through the Adirondack Mountains, and safely drove home. I had been fearful of running out of gas, but had no issues whatsoever, and the guys at the border crossing could not have been more understanding and patient, although by then everyone knew the hijackers had actually come from Canada itself. And however weird it seemed, we still completed the testing and approval of the ABB transformer – not everything could simply stop just because of 9/11 – before I departed.

And I cannot imagine I will ever be able to forget that day and the week which followed ;-)

Joe Holzer 9/11/2021