

# PETERBOROUGH DISTRIBUTION INC.

## EB-2007-0571 (PST)

### 2006 STORM DAMAGE

#### **Background**

The severe thunderstorm struck the City shortly after 11:00 pm on the night of Monday, July 17, 2006. The distribution system registered its first significant disturbance at about 11:07 pm. Strong winds began around 11:15 pm and lasted about 15 minutes. Thunder and lightning battered the City until about 11:38 pm. Initial reports were that the utility had suffered some outages but as the night went on it became evident that the utility had major damage and significant customers outages on the distribution system.

A report to City Council in September outlined that the City had over \$300,000 in damage as a result of trees felled during the brief windstorm. The City lost 300 to 400 public trees in the storm. The loss of private trees would be in addition to this. The areas that experienced the greatest tree damage were the Little Lake shorelines, the "Avenues" (west of the central city core) and other areas where mature trees dominate the landscape.

The distribution system experienced damage in all quadrants of the City primarily in rear yard installations in the older sections of the City where overhead service is still prevalent. The City has had a bylaw in place for underground residential distribution since the late 1970's. Of course, these relatively newer subdivisions escaped significant damage from the storm.

Initially, at the height of the storm, the utility had 4 major feeders and 15 distribution 4.16 kV feeders tripped out. The utility had 14,000 customers (42%) out of power in Peterborough with a few in Lakefield and none in Norwood. All available line personnel were called in. Due to the storm hitting at the prime vacation time in the year, the utility was missing 1 supervisor and 4 power line maintainers (30% of full compliment) who were out of town and unavailable for duty.

During the early morning hours of July 18th, staff were assessing the damage and restoring major feeders and power where possible. At first light on Tuesday, it was confirmed that the utility had sustained a significant amount of damage to the electrical system, the most at the utility in anyone's memory. The damage to our system and the outages far exceeded those experienced during the flood emergency in 2004. To effect repairs and restore power to customers quickly it was determined that the utility would need help. Calling on our mutual aid agreement two line crews from Oshawa PUC Networks and two from Whitby Hydro Energy Services were requested that would essentially double our manpower. The out of town crews arrived late afternoon on Tuesday.

PUSI crews had restored all of our major feeders and all of the 4.16 kV feeders by 9:15 pm on Tuesday, July 18<sup>th</sup>. At this point, power was restored to all but 1300 customers (4%). During the day on Tuesday the utility had enlisted the assistance of our regular tree-trimming contractor who sent two crews to begin the task of clearing trees from our lines so the remainder of repairs could begin. Another local private tree trimming contractor was also hired to augment the storm response team. Later in the week, a local private electrical contractor also provided a crew to start constructing a new overhead pole line required to restore power to an area in the northeast section of the City. Crews worked until midnight on Tuesday and then sent home to rest as some of our staff had been working for 24 hours straight. The utility left one two-man crew on overnight to respond to police and fire calls and make small repairs to services where they could.

At the crack of dawn on Wednesday, July 19<sup>th</sup> Management decided that work would continue only during the daylight hours as the most progress was being made in the day and it would be a safer environment for crews to work. The utility crews would work 16 to 17 hours with the exception of the overnight crew that would continue to respond to police and fire calls and make small repairs if they had time. By days end, the utility had approximately 800 customers (2.4%) still without power.

On Thursday, great progress in power restoration and repairs was made despite the weariness of all staff. By quitting time at 10:00 pm, it was estimated that the utility had only 60 customers (0.2%) remaining without power. The line crews from Oshawa and Whitby were dismissed with great thanks for their quick response and excellent assistance during the week. The local tree-trimming contractor was also released.

By the end of Friday, July 21<sup>st</sup> the crisis was essentially over. Only 16 customers remained without power. Those customers who had made their repairs and were ready would be restored that night. Only those that had not made repairs to their own service equipment would remain out of power into the weekend.

PUSI crews and the tree-trimming contractor continued clean up and repairs for several weeks following the storm.

## **Management Discussion**

A post mortem on the storm response was held on August 22, 2006 with all operational staff to review procedures, processes and improvements to our response during the week of the storm. Areas of review included safety, communications, staff resources, documentation, materials and equipment.

With respect to safety, overall, the utility performed very well. There were no reported lost time injuries or minor injuries to staff or any contractors working on the utility's

behalf. Management is not aware of any member of the public that was injured as direct result of the utility's operations or its damaged facilities. Additionally, all appropriate safety procedures were observed and no near misses or equipment damage were reported. Restoration of the damaged portion of the distribution system was carried out in an efficient and effective manner. Power was restored to the majority of customers in less than 24 hours.

Staff resources were deemed to be adequate despite the reduced staff level due to vacations. Our mutual aid agreement for additional line crews was enacted for the first time without any problems. The addition of the outside line crews, local electrical contractor and tree trimming crews were instrumental in expediting the repairs to the distribution system.

Materials and equipment were readily available and no significant shortage was experienced in this emergency. The establishment of partnership arrangements with suppliers is particularly valuable during these types of events.

**Budget and Financial Implications**

Management believes this to be an extraordinary event and is seeking to recover the costs through a special rate rider.

The operating costs were collected during the week following the storm and for several weeks after when repairs related to the storm were completed. The total operating cost attributed to the storm is \$437,103 and PDI is requesting \$374,586.

The breakdown of costs is as follows:

Overtime labour and Equipment	\$139,087
Materials	\$ 57,120
Tree Trimming Contractors	\$113,567
External Line Contractors	\$ 63,679
Misc. Purchases	\$ 1,133