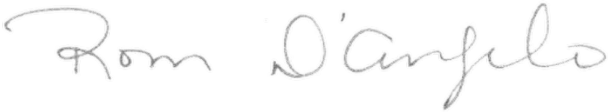




COMMUNICATION UPDATE

TO:	Mayor Eisenberger, Members of City Council and Janette Smith, City Manager
DATE:	October 26, 2021
SUBJECT:	Procurement Policy 10 – Emergency – Main Electrical Feed (High Voltage) Failure at Materials Recycling Facility (MRF) (EFFM-2021-01)
WARD(S) AFFECTED:	City Wide
SUBMITTED BY:	Rom D'Angelo, C.E.T.; CFM Director, Energy, Fleet and Facilities Management Public Works Department
SIGNATURE:	

The purpose of this Communication Update is to satisfy the notification requirement in accordance with Procurement Policy By-law No. 20-205, Section 4.10, Policy 10 – Emergency Procurements, where an emergency existed and the necessary work exceeds the approval limit of \$250,000.00 or greater, the General Manager of the Client Department shall issue a Communication Update to the City Manager and to Council, in addition to completing the Emergency Procurement Form. This Communication Update is regarding the main electrical feed failure and subsequent generator rental, maintenance and generator fuel supply to keep the operations going at the Materials Recycling Facility (MRF) at 1579 Burlington Street East.

In the Spring of 2021, the City's High Voltage contractor was dispatched to 1579 Burlington Street East to do preventative maintenance work on the high voltage electrical system on site. The electrical technician visibly noticed the major wear-and-tear on the incoming cables (main feed). This situation led to an extensive investigation and it was recommended by the contractor to have the main electrical cables megger tested to rule out any other possible deficiencies or defects in the system.

The investigation revealed severe damage to the underground feed cables due to arcing/tracking. Judging by the type of insulation used around the cable it is estimated that the original electrical feed dates to the 1960's to early 1970's. Furthermore, the main electrical cables were fed through an old basement which is now submerged under water (not ideal conditions).

The cause of the damage is likely due to wear-and-tear over time and inadequate insulation covering the semi conductive layer of the high voltage cable. At the time of this investigation only a single layer of vinyl tape covering the semiconductor was noticeable thus increasing electrical field and likelihood of partial discharge, and inadequate spacing/crossover of phasing inside of high voltage switch compartment. Three (3) different phases were in direct contact with each other, these were the most severely burned areas; several other cables were either in direct contact or within 1" of each other. Timing for prompt action was critical, had the incoming feed not been isolated immediately, there was a high likelihood the equipment in the plant would have suffered a major phase-to-phase fault in the coming weeks and/or months. This condition can cause equipment failures (in transformers, transmission lines, alternators, busbars, etc.) and would disturb the normal workings of the system. The electrical faults can also lead to fire, along with electric power supply interruptions.

Due to the extent of the damage, the main electrical feed was kept out of service until a replacement was installed. In order to keep the Material Recycling Facility (MRF) running safely, a large temporary generator was installed until the repairs could be completed.

Early estimates for the replacement work of the main electrical feed, repairs to the ancillary equipment, the rental & ongoing maintenance of the generator as well as the fuel supply to the generator were between \$350,000 and \$400,000, however, due to unforeseen site conditions, and delays caused by supply chain shortages and logistics issues, the cost has increased to \$779,541.81. The entire effort in getting the new electrical feed in place and back on line took approximately 11 weeks. All expenses related to the electrical main feed failure and to ensure temporary equipment was in place for business continuity will be covered through a Risk Management claim.

APPENDICES AND SCHEDULES ATTACHED

None