

Project: Hamilton Street Railway Expansion

Description of Needs

Since the late 1980's, the City of Hamilton has been successfully operating as many as 120 48-passenger natural gas transit buses. With HSR's recent decision to increase their natural gas bus fleet, the need arose to plan an upgrade to the existing CNG fuelling station at their Hamilton Street Railway (HSR) Upper James Operations Centre.

Project Developer Needs

The local gas utility, Union Gas, was the original designer and builder of the Upper James facility in 1999/2000. Again, HSR reached out to Union Gas – this time for a full fuelling service package for the facility overhaul, including ongoing ownership as well as operation functions that go beyond HSR's responsibility for day to day operation. To fulfill the entire range of engineering and project management responsibilities, Union Gas needed to augment their in-house capabilities with additional CNG subject matter expertise. As in 1999, they approached Change Energy (then DMA Technical Services) to fulfill these needs.

Date of completion: 2015

Scope of Work:

Change Energy's contract with Union Gas included:

- Subject matter expertise for HSR transit refuelling station project including:
 - Station design and budget
 - Existing equipment assessment for ongoing use
 - New equipment specification
 - Approvals and permits
 - HazOp assessment
 - Commissioning, acceptance testing and start-up management
 - Operation & Maintenance documentation
 - Operator training
- Assistance with:
 - Equipment procurement
 - Installation and maintenance contracts
 - Project Management



Result:

A turn-key refueling station comprised of:

Compression

4 compressors providing:

- 1000 installed compressor HP
- 3200 scfm (3875 kg/hr)
- Suction pressure 100-200 psig (7-14 Barg)
- Nominal discharge pressure 3600 psig (248 Barg)

Storage

- 4 ASME cylinders
- Buffer configuration
- Capacity of 46,284 SCF (900 kg)
- Pressure at 4500 psi (310 barg)

Vehicle Dispenser

- 3 single hose dispensers
- Capable of fuelling 2 buses and 1 light vehicle on a priority basis
- Average fill time 4-6 minutes per bus
- Daily transit vehicle fill cycle from 11pm to 5am