

Electrical Power Centre Commissioning is Underway

Woodward Upgrades Project Newsletter

A part of the Clean Harbour Program
September 2020

The Electrical Power Centre is a complex project involving both the Wastewater Treatment Plant and Water Treatment Plant processes at 700 Woodward Avenue. Commissioning involves many stages and systems that need to be fully tested and demonstrated for operation. Below is a broad overview (at a high level) of some key steps of the commissioning process to get the Electrical Power Centre up and running!

May 2019 - ongoing

Start of Short Circuit Study:
An essential study that sets up the protections for every breaker and system in the entire plant.

October 2019

First utility feed is tied over:
Project is given clearance to power to a portion of the switchgear.

Fall 2020

Continued testing of equipment as power begins to get transferred over from the existing system to the new. The Water Treatment Plant will be the first to transfer followed by the remaining major WWTP loads, one at a time.

spring 2019

fall 2020

winter 2021

May 2019 - ongoing

Pre-commissioning activities begin:
Major switchgear is installed onsite. The switchgear is the most important piece of equipment in the building and controls how power is transferred throughout the site.

Generators are installed: Four generators are installed at the EPC over the course of 12 months.

May 2020 - October 2020

SCADAe testing begins:
This custom-made software is designed to control the site. Pre-installation Factory Acceptance Testing (FAT) took over 28 days to complete; Site Acceptance Testing (SAT) at the plant is expected to take more than 30 days. This level of testing is significantly more than usual for SCADA systems due to the complexity and scale of this system.

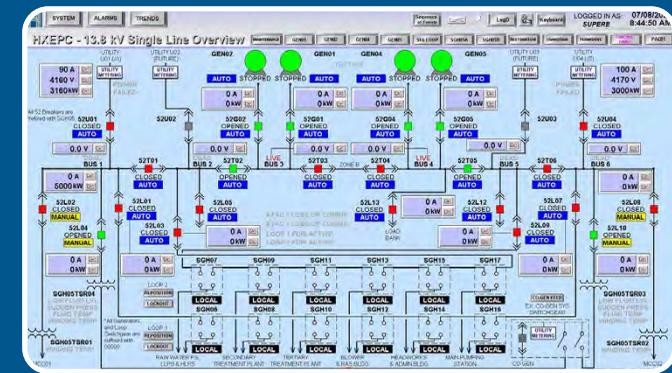
March 2021

Project is anticipated to be fully commissioned.



Before the generators can be commissioned, many important auxiliary systems need to be in place:

- HVAC
- Fire Suppression
- Diesel fuel
- Exterior radiators
- Control Systems



SCADA stands for Supervisory Control and Data Acquisition and the 'e' is for electrical. Application screens/pages of the SCADA system, (left) are referred to as the HMI screen(s), Human Machine Interface. These act as the main interface in which the operator (or electrician operator in SCADAe) monitors and operates the system.



Main Pumping Station



Construction: May 2017 - May 2021

Architectural works including the stone cladding are nearing completion and construction of the roof decking is complete. Work on interior electrical and mechanical installations as well as and final service installation is progressing. Exterior civil works including final grading have begun, and we are continuing with preparations for commissioning.



Electrical and Chlorination Upgrades



Construction: Oct.2017-Jun.2021

With construction of the new Energy Power Centre complete, focus is now on commissioning, with ongoing preparations for power transfer to the new system to be able to disconnect/demolish the existing WTP and WWTP substations.



Tertiary Treatment Upgrades



Construction: May 2019 - Dec 2021

Construction of the structures for Phase 1 of the South Plant upgrades are done, with works now focused on the mechanical and electrical preparations for commissioning the first half of the South Plant. Concrete work continues for the Tertiary Facility, with the structure now above grade, and excavation of the new Chlorine Contact Tank continues.



As part of the Woodward Upgrades Program, the Operational Readiness initiative was established in 2016 and was created to conduct a thorough risk and gap review of essential work groups and processes such as staffing resources, treatment process dependability and budgetary controls. The group, which is being led by the Woodward Upgrades team, has recently been re-established and includes members from:

- **WUP**
- **Plant Operations**
- **Plant Maintenance**

Utilizing their collective efforts, the Operational Readiness Team will focus on the transition, operations, asset transfer and maintenance of the new equipment and processes.

Specifically, the Team will:

- Develop and schedule a maintenance plan and standard operating procedures for the new Main Pumping Station, the Electrical Power Centre and the Tertiary Building
- Implement preventative maintenance planning
- Rebuild the equipment asset register and update the inventory to streamline the removal of obsolete parts
- Ensure the safe operation of the new equipment and processes.

We are grateful to all the members of the Team and their essential work as part of the Woodward Wastewater Treatment Plant upgrades.