

## Chapter Six

### Conclusion & Recommendations

#### 6.1 Conclusion

The project endeavors to present an efficient controlling and monitoring system for the backwash filter using Foxboro DCS System. The Pneumatic control system of the backwashing filter in the DHT unit has been successfully replaced, programmed configured and integrated using Foxboro DCS. The following results were achieved:

- The backwashing processes are continuously being monitored and that ensure optimum filtration of the raw diesel.
- The new control system enhanced the reliability and stability of the filter operation, and also improved the performance and operation of the Hydro treating processes.
- Function Block logic is easy and friendly to understand, simulate and implement compared with the old Pneumatic Control system.
- The use of software configuration changes can be made easily without the need to shutdown the system.
- All the pneumatic system was replaced by a Program, thus the down time for pneumatic System is reduced.
- The same setup and configuration can be used in different facility.

- The filter is cleaned when ever needed as it requires.
- Optimized product quality and filter run times at the optimum cost.
- Increased Filters life by keeping the filters media well-conditioned.
- The catalyst service life is extended, the diesel yield increased, and the maintenance and spare part cost decreased.

In summary, this newly designed system has effectively improved the quality, and minimized costs through the points mentioned above.

## 6.2 Recommendations

Future researchers are encouraged to minimize the number of the function blocks used and design a control system for the backwashing process using:

- The Programmable Logic block (PLB) that supports ladder logic executing in a digital Field bus Module (FBM).
- The Independent Sequence (IND), DEP, and EXC sequence blocks which provides a sequential control, and can be used to perform a series of activities; for example: filling, mixing, and draining the contents of a tank.