

# **The Migara Ratnatunga Trust Awards 2020/ 2021**

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# Colombo Dockyard PLC

*From 26/02/2019 to 17/05/2020*

- Largest and oldest shipbuilding company in Sri Lanka..
- Specializes in shipbuilding, ship repair, heavy engineering and offshore engineering..
- Well structured training programme which consists of trainees transitioning through multiple workshops..



# Machine Workshop

- Tasked with machining mechanical components..
- Familiarizing with machining operations and tool geometries..
- Also performs dynamic balancing to check for imbalances..



Figure 01: Machined threaded fasteners



Figure 02: Machined gangway plank wheels



Figure 03: Dynamic balancing of a turbine

# Maintenance Workshop

- Responsible for the maintenance of machines and repairing of breakdowns..
- Preventive and predictive maintenance is carried out using a computerized schedule..



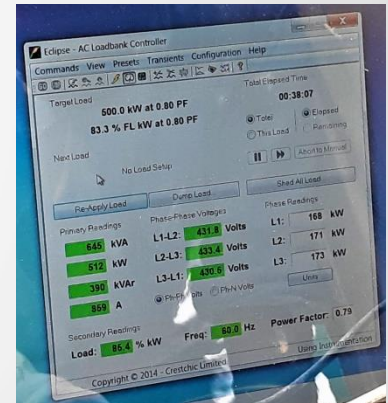
Figure 04: Dismantled chain hoist



Figure 05: Dismantled surge arrester



(a)



(b)

Figure 06: Generator load bank testing (a) Load bank (b) Computer interface



# Metal Workshop

- Processing of sheet metal by bending and cutting and fabrication of pipes..
- Several types of welding and heat treatment of metals..
- Also carries out sand casting and rubber moulding..



Figure 07: SMAW trials



Figure 08: Sand casting



Figure 09: Moulded  
rubber bush



Figure 10: Heat treatment of an  
anchor after welding

# Quality Control Department

- Mainly responsible for performing Non Destructive Tests (NDT) on components..



Figure 11: Magnetic Particle Inspection



Figure 12: Ultrasonic Testing



Figure 13: Dye Penetrant Testing

- Also carries out quality inspections and audits..

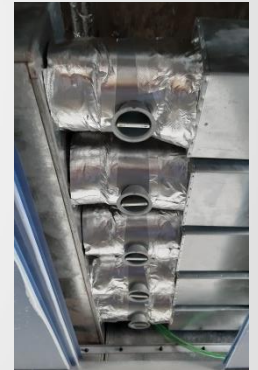


Figure 14: Quality inspection of A/C duct insulation



# Colombo Dockyard PLC

*From 26/02/2019 to 17/05/2020*

## Training Experience

- Substantial amount of hands on experience..
- Importance and necessity of industrial safety..
- 5S concept in practice..
- Appreciation for team work and developing communication skills..







# LTL Holdings (Pvt) Ltd.

*From 25/11/2019 to 31/01/2020*

- Stationed at the **Yugadanavi Combined Cycle Power Plant** located in Kerawalapitiya..
- Capacity of 300MW at an efficiency of 45%..
- Trainees were required to understand the overall operation of the plant, and also assist in daily tasks..





# Plant Operation Overview

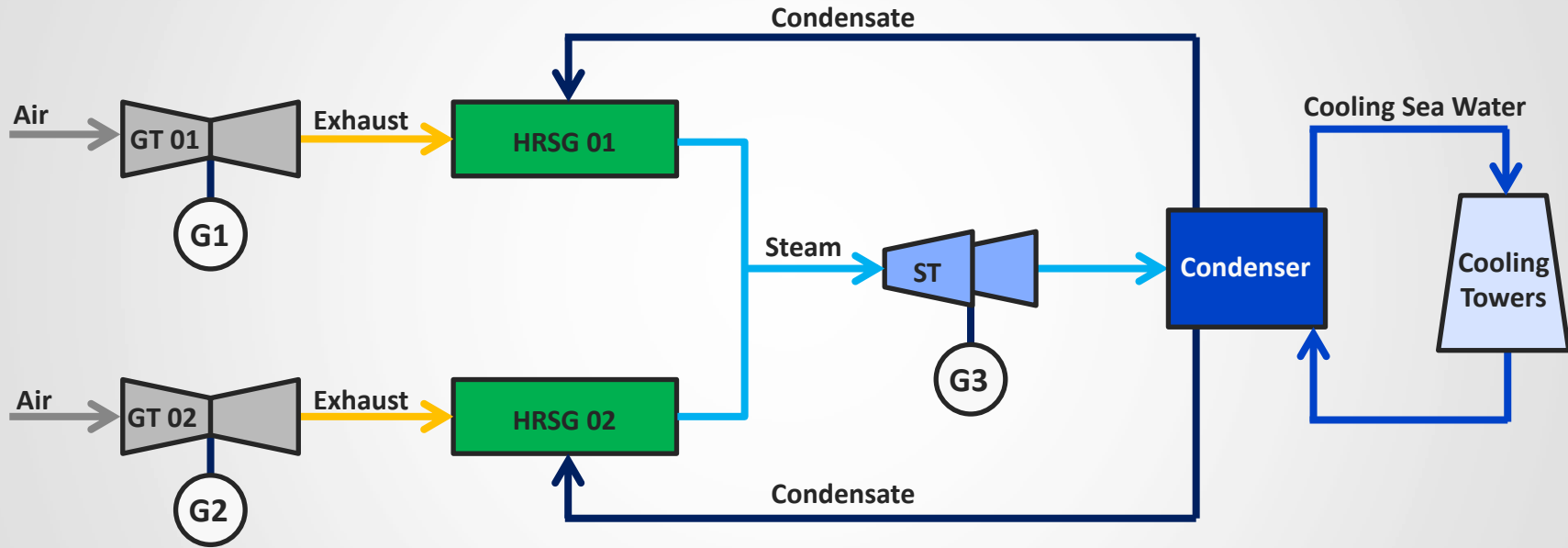
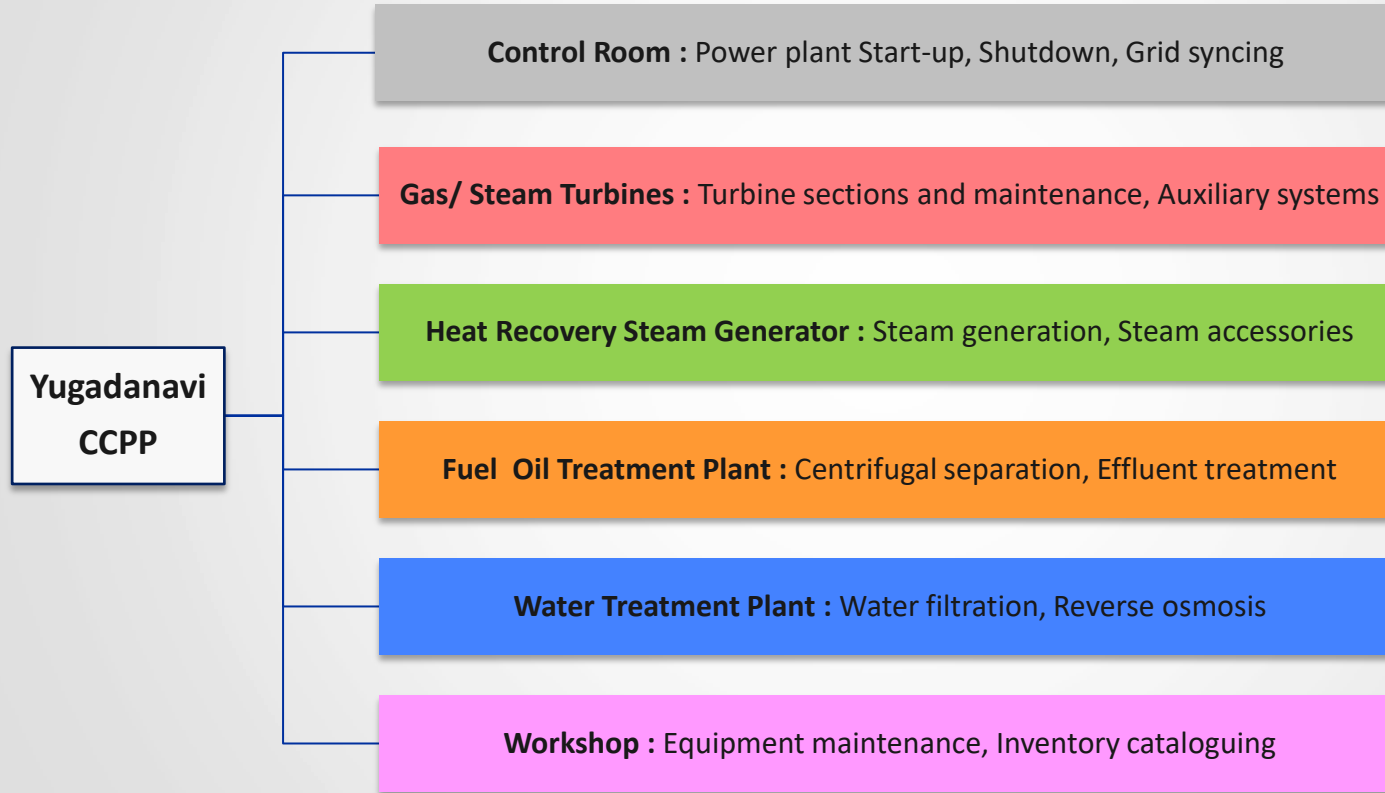


Figure 15: Power plant overview

# Knowledge Areas



# Projects : Heat Load Calculation

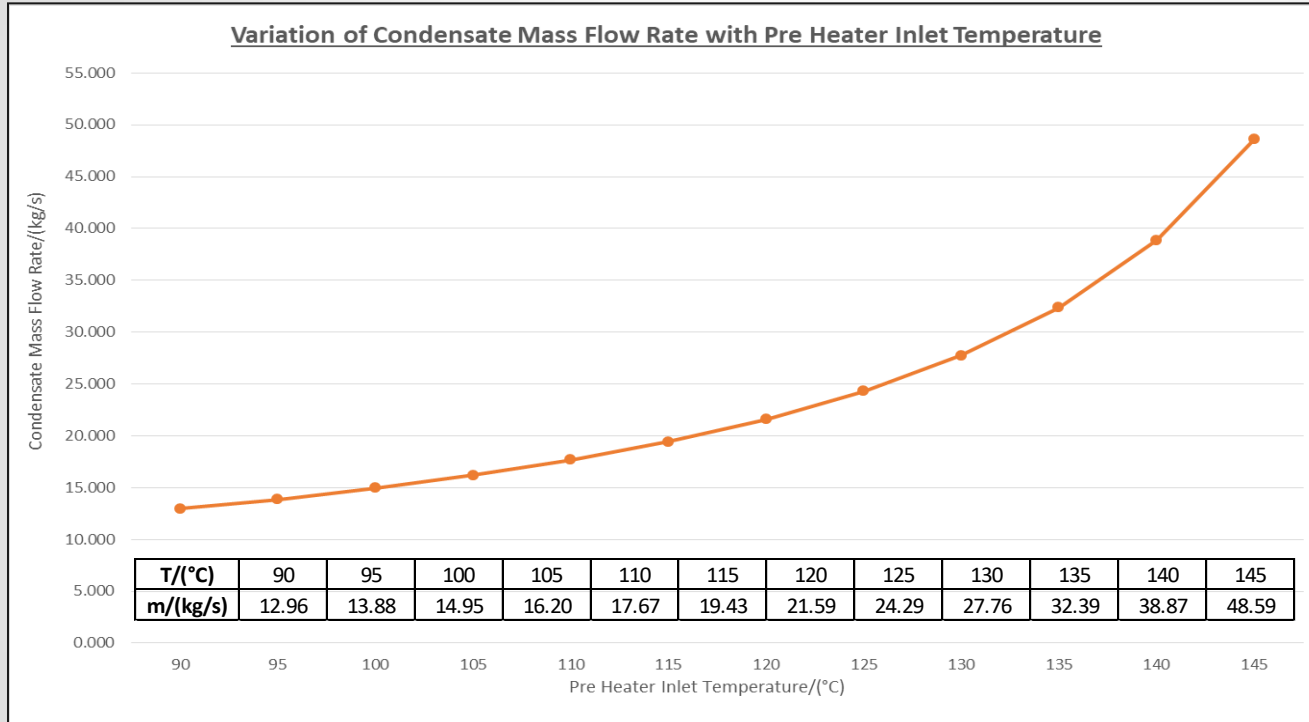


Figure 16: Variation of condensate mass flow rate with pre heater inlet temperature

HRSG Cond./ HW S.H.C	4200	J/K.kg
HE Stage 01 Efficiency	0.9	

HRSG Cond. Inlet Temp.	165	C
HRSG Cond. Inlet Pressure	15	barg
HW Inlet Temp.	110	C
HW Inlet Pressure	10	barg
HW Outlet Temp.	151	C
HW Outlet Pressure	10	barg
HW Mass Flowrate	42.66	kg/s

Heat Absorbed by HW	7.346	MW
Heat Supplied to HW	8.162	MW

# Projects : Developing P&ID Diagrams

- Developed a P&ID diagram for a newly installed instrument air system

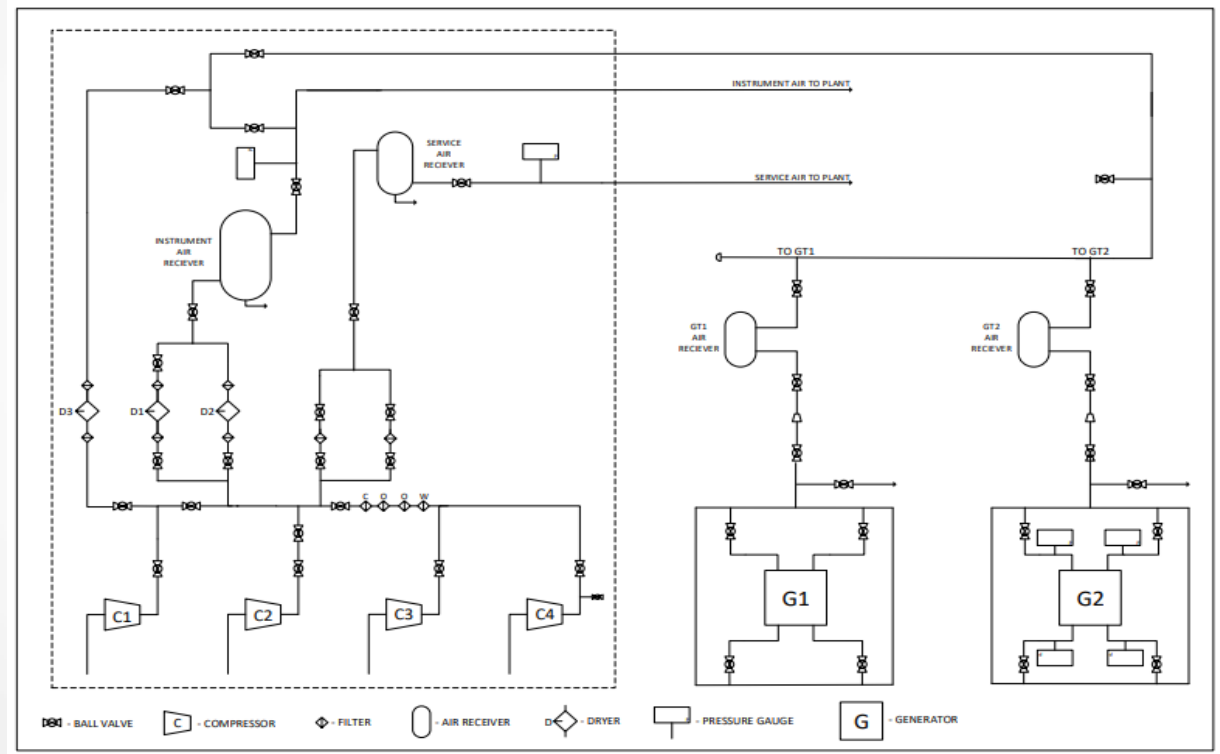


Figure 17: P&ID diagram





# LTL Holdings (Pvt) Ltd.

*From 25/11/2019 to 31/01/2020*



## Training Experience

- Significant insight into the field of power generation..
- Multidisciplinary engineering exposure..
- Witnessing how theoretical principles are implemented in the real world..
- Exposure to a well maintained occupational health & safety management environment..

**Thank You**