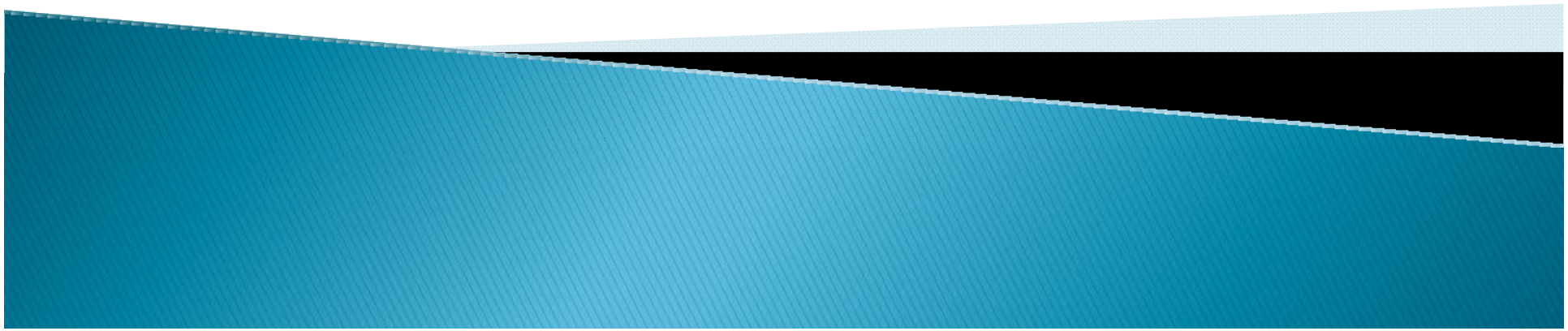
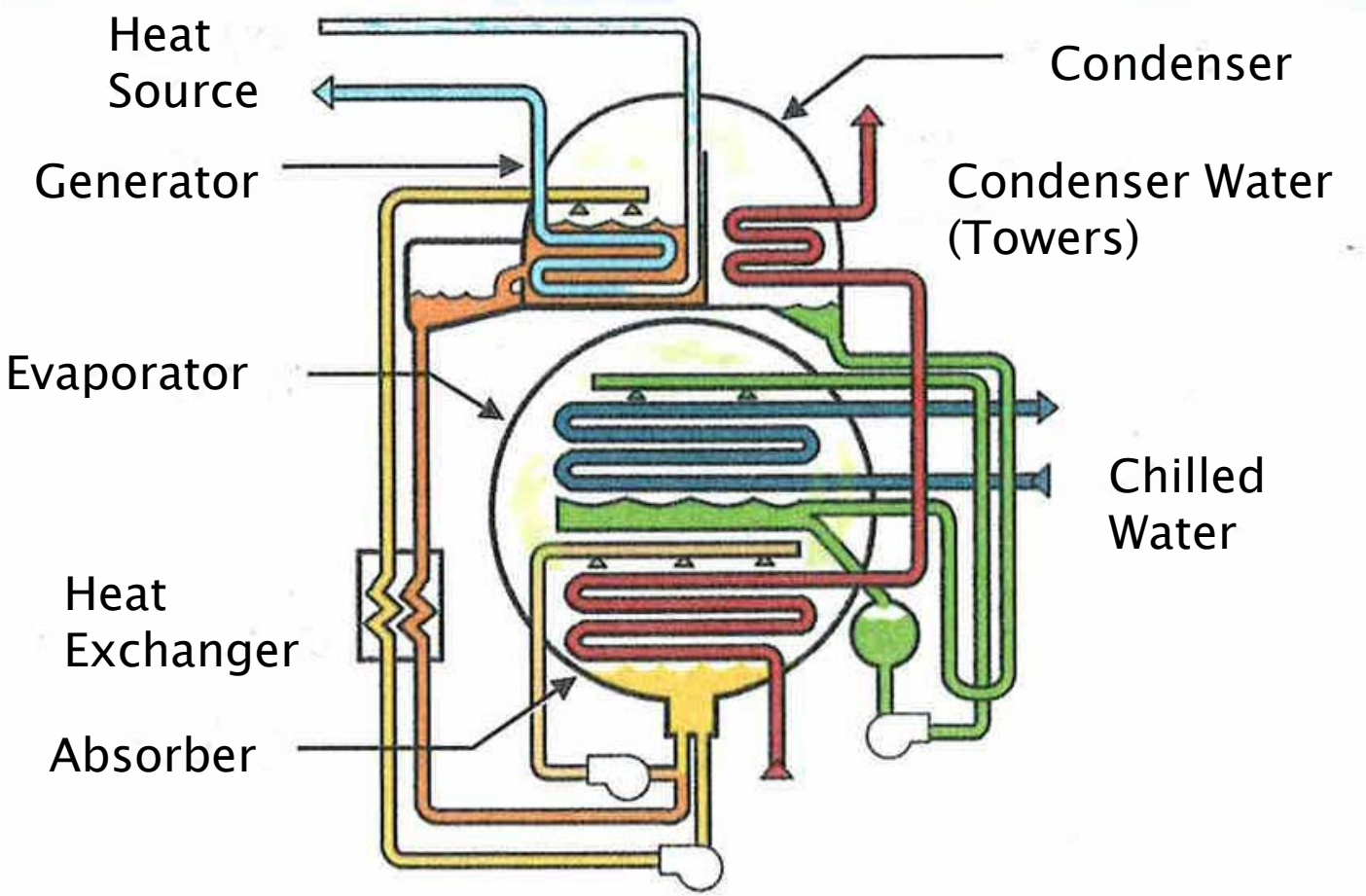
Absorption Water Chillers & Co-Generation

The Science
The Mystery
The Art



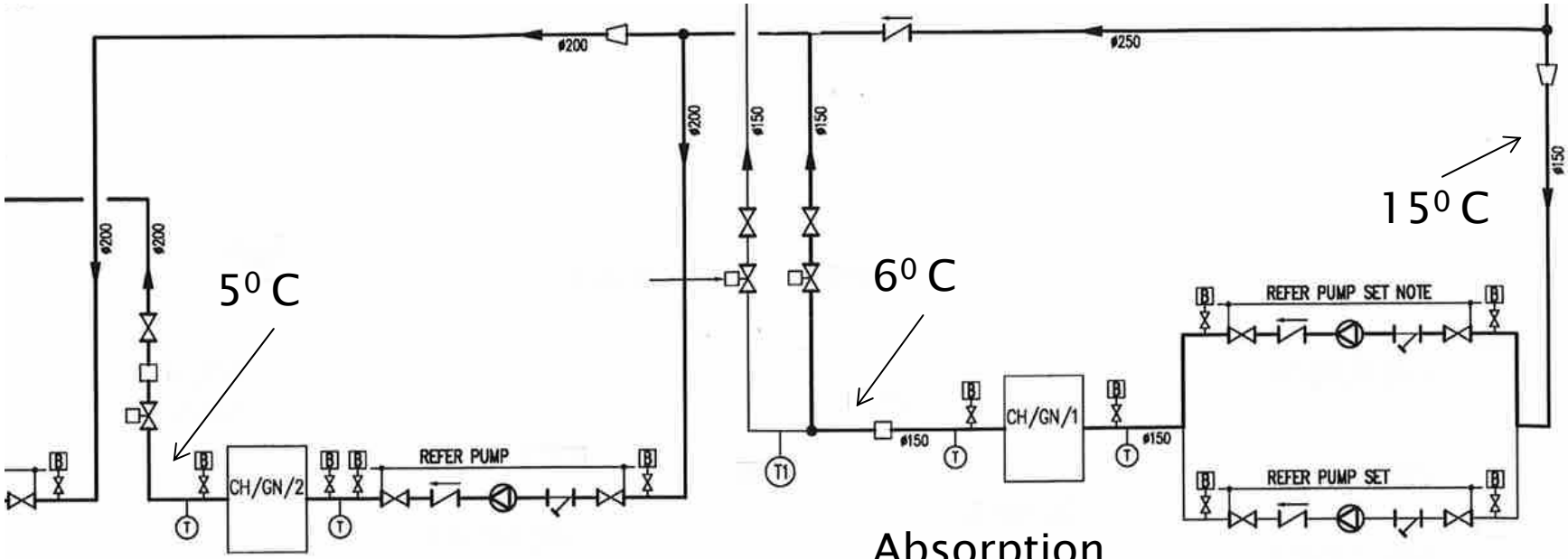
Absorption Chiller Layout



The Science - Engineering

- Generators are typically sized first – waste heat allowance.
- Calculation Safety Factors – Part Load Issues
- Chiller Configuration – Parallel, Series
- Chiller Size – Cold Water
- Chiller Weight
- Generator Noise Control

Parallel Chillers



Centrifugal Chiller

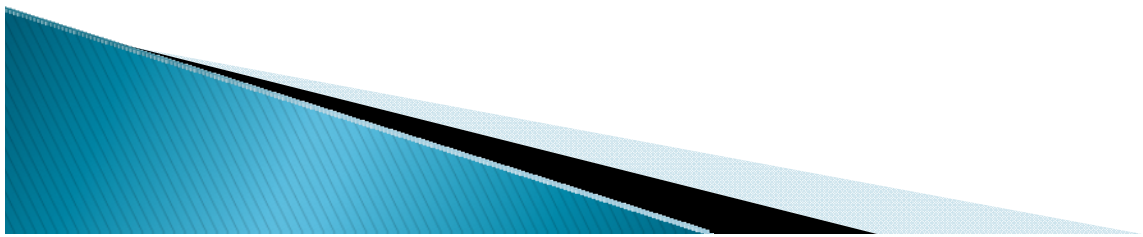
Absorption Chiller

The Mystery - Commissioning

- Effective control system is a must
- Non – Condensables
- Deep Vacuum
- Corrosion
- Varying Building Load
- Varying Condenser Water
- Interruptions in Power Supply
- Crystallization, How and Why and Where

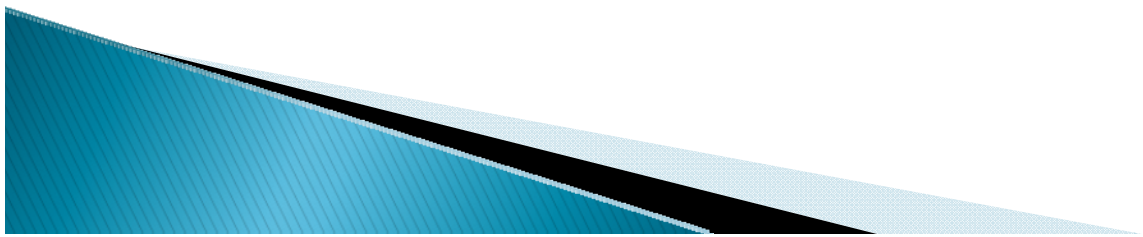
LiBr Crystallization

- Absorption Solution Temperature
- Absorber Solution Pump
- LiBr Heat Exchanger
- Interconnection Pipes



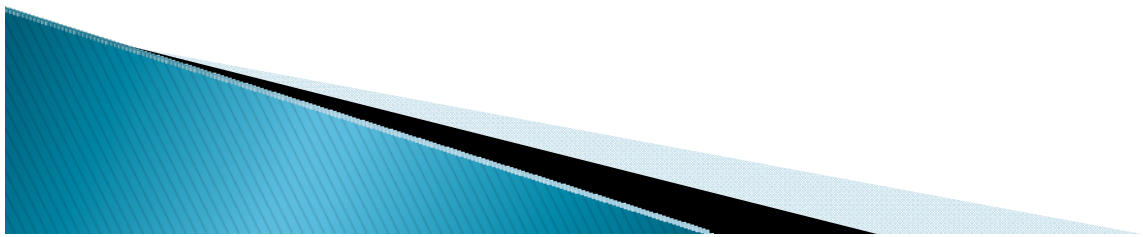
The Art – Operation

- Stable and sizable loads
- Stable Condenser Water Temperature
- Stable Exhaust Gas Temperatures
- Long Start Up and Shut Down Cycles
- Low Condenser Water Temperatures Issues
- Loss of Vacuum Issues
- Solution – Water Ratio's



Overview

- Know the generator flue gas capacities
- Watch your safety factors
- Chiller staging can be an issue
- What is HLI and LLI requirements for the absorber
- LiBr – Water ratio
- Chiller Vacuum
- Solution Temperature



Thank You