**Objective**

To design a temperature test chamber that will enclose different sized pressure regulators and can induce a wide range of temperatures on the pressure regulator.

**Design Considerations**

1. System(s) capable of cooling and heating to desired temperatures
2. Efficiency
3. How to enclose different sized regulators
4. How to accommodate different pipe sizes

**Cooling and Heating**

- **Heat Exchange (loss or gain)**
- **Power Requirements**

This graph shows the amount of heat exchange across the system with 2-in and 4-in insulation in steady-state. This was essential to calculate the power requirements.

This graph shows the required power for the system with 2-in and 4-in insulation needed to induce certain temperatures on a 1000kg steel mass inside the system within 2 hours.

**Full Enclosure**

Thermotron Model P-CH-810-LN2

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