HVAC Lab Report Outline and Responsibilities

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1. Introduction

1.1. *Introductory Information* - ***Taylor***

1.2. *Experimental Overview* - ***Taylor***

2. Background

2.1. *HVAC Systems Overview* - ***Taylor***

- Deliverable 1 - A description of the system and processes that occur.

2.2. *Ideal Vapor-Compression Cycle* - ***Taylor***

- Deliverable 1 - A description of the system and processes that occur.

2.3. *Practical HVAC Drying Unit* - ***Cameron***

- Deliverable 1 - A description of the system and processes that occur.
- Deliverable 2 - An evaluation of the major theoretical assumptions in the analysis, as well as any experimental assumptions that were made.

2.4. *Moist Air Analysis* - ***Keaton***

- Deliverable 1 - A description of the system and processes that occur.
- Deliverable 2 - An evaluation of the major theoretical assumptions in the analysis, as well as any experimental assumptions that were made.

3. Methods

3.1. *Experimental Methods* - ***Taylor***

- Deliverable 2 - An evaluation of the major theoretical assumptions in the analysis, as well as any experimental assumptions that were made.

3.2. *Analytical Methods*

3.2.1. *R22 Refrigeration Cycle* - ***Chris***

- Deliverable 3 - Using data from 2 of the 3 days' collected data for the system, calculate the coefficient of cooling performance and efficiencies of the compressor (power and isentropic), evaporator, and condenser.

3.2.2. *Moist Air Analysis* - ***Cam***

- Deliverable 3 - Using data from 2 of the 3 days' collected data for the system, calculate the coefficient of cooling performance and efficiencies of the compressor (power and isentropic), evaporator, and condenser.

3.2.3. *Heat Transfer Efficiencies* - ***Keaton***

- Deliverable 3 - Using data from 2 of the 3 days' collected data for the system, calculate the coefficient of cooling performance and efficiencies of the compressor (power and isentropic), evaporator, and condenser.

3.3. *Statistical Methods*

3.3.1. *Perturbation Method* - ***Cameron***

- Deliverable 4 - An uncertainty analysis using the perturbation method on all of the calculations for one day.

3.3.2. *Measurements to Obtain Confidence Interval* - ***Keaton***

- Deliverable S1 - Assuming 95% certainty, calculate the number of measurements required to obtain a confidence interval that is ±0.5 (in respective units) for one set of data from three representative (different) types of sensors.

3.4. *System Design Methods* - ***Cam***

- Deliverable 5 - Design a system that meets the requirements as described in Section 14.5.2.

4. Results

4.1. *Analytical Results* - ***Keaton***

- Deliverable 3 - Using data from 2 of the 3 days' collected data for the system, calculate the coefficient of cooling performance and efficiencies of the compressor (power and isentropic), evaporator, and condenser.

4.2. *Statistical Results*

4.2.1. *Perturbation Method* - ***Cameron***

- Deliverable 4 - An uncertainty analysis using the perturbation method on all of the calculations for one day.

4.2.2. *Measurements to Obtain Confidence Interval* - ***Keaton***

- Deliverable S1 - Assuming 95% certainty, calculate the number of measurements required to obtain a confidence interval that is ±0.5 (in respective units) for one set of data from three representative (different) types of sensors.

4.3. *System Design Results* - ***Chris***

- Deliverable 5 - Design a system that meets the requirements as described in Section 14.5.2.

5. Discussion

5.1. *Efficiency Implications* - ***Chris***

- Deliverable 1 - A description of the system and processes that occur.
- Deliverable 3 - Using data from 2 of the 3 days' collected data for the system, calculate the coefficient of cooling performance and efficiencies of the compressor (power and isentropic), evaporator, and condenser.

5.2. *HVAC Drying Cycle System Design* - ***Cam***

- Deliverable 5 - Design a system that meets the requirements as described in Section 14.5.2.

6. Conclusion

6.1. *Conclusion* - ***Keaton***