Meeting Minutes 2

Date: 9/13/11

Start time: 2:00PM

End time: 3:45PM

• Held a meeting with Dr. Rob Hovsapian (Coordinator), and the GE Sponsor Todd Hopwood

• Was given list contacts for reference and further advising

o Todd Hopwood: Sponsor

Phone: (832)495-9324

Email: toddhopwood@ge.com

Lynard Lynn: Performance guy

Phone: (713)458-3743

Robert Birth

Used Wind Rock sensor we are trying to emulate/improve upon

o Will be given access to GE webpage and resources as well as scheduled meetings with a GE service team

o Bob Richardson

o Ryan Gallicer

o Ryan McReynolds

•Meeting began with brief background of Todd Hopwood

o Graduated FSU in 1997 with concentration in controls

o Worked at Dodge Motors as technical advisor

o Moved on to gas management

o Now works for GE on compressors as of September 2010

•Meeting was held with our team as well as the ME Rotational Valve Project team also sponsored by GE. We were instructed to work closely with the valve team as our project will most likely be evaluated by the sponsor together and one project has the potential to affect the other. All advisor meeting will be scheduled for both teams at the same time.

•Brief description of the Rotational Valve project Specifications follows:

O Types of valves:

Plate Valve: current design restrictive and prone to leaks and ware and tare and expensive but lasts a long time because it is easy to service and perform general maintanace. Used in most standard applications.

Poppet Valve: used in pipe compressors allows more flow.

Rotational Valve:

• Higher efficiency

• Removes the impact speed during closing

• Has the top plate rotation around the vertical axis which aligns slots/holes

O Specifications:

Current valve envelope will be provided

Design the best way to rotate the valve

Design rotating surface to ensure no gas leakage

Design flow passage through the valve

Must be dry (no lubrication)

Working demo/prototype to be presented at the end of project

•Project:14 Google Phone Application: Service Tool

o Simple flow measurement that could be externally mounted on the inlet/outlet pipe to the compressor, sensors would transmit the information back to an Android phone where data could be stored/plotted.

o MUST STORE DATA! Possibly in an excel sheet or other method

o Specifications:

Data transferred wirelessly to an Android Phone

• Wife is preferred but showed interest in other possible methods, should provide other such ideas with a pros vs. cons analysis for each method before deciding on method for implementation

• Range sensors can be away from sensor is “safe distance from compressor”" no exact minimum requirement was obtained from Todd but the impression was the farther the better

• Must take accuracy of measurements into consideration when proposing method of wireless implementation in pros vs. cons analysis

Set-up time on the compressor less than 5-min (required top priority) prefers set-up time of 120seconds or less if possible

No modifications to the piping going to the package

Software should be able to store the data and plot live (real time updating of plot as data arrives is preferred)

Working demo/prototype to be presented at the end of the project

o Possible ideas/suggestions:

automatic updates of plot every x seconds or live streaming of data if possible

Supersonic sensors?

Perhaps measure temperature as well

Try to make into a simple kit that can be easily and cheaply transported

Real time comparison with theoretical data

• Both theoretical and real-time data shown on same plot (overlapping comparison seemed important but not required should be high priority perk

o Anecdote that explains the need and possible use for the design follows:

Todd Hopwood was working with clients who purchased compressors from GE in Africa. They were saying that the compressors were not outputting the right pressure and measurements required. After doing everything possible to resolve the issue by phone they were forced to take a more direct approach. Todd had to send an associate Robert Burth with the necessary equipment in order to take measurements and discover the problem. The entire process including travel and shipping of equipment, customs and other expenses added up to approximately $1.5million. In the end it was discovered that the sensors the client was using was installed backwards and there was really nothing wrong with the compressors. This project if successful will prevent further accuracies of this scenario and possibly save company money.

•Team members' comments initial ideas after meeting:

o Can design a web application using Wi-Fi thus eliminating a close proximity requirement to the sensor but requiring the use of a wireless router on site or possible use of satellite internet

o Must get into contact with Robert Burthe for more information on the sensors he uses and provide feedback on ideas we come up with in the future.