HPRT MEETING MINUTES

Client Meeting

Tuesday, 26 September 2017
2:45pm - 4:00pm

Minutes recorded by: Myla Azofeifa

Meeting called by: Haley Flenner (HW)

Attendees: Kelly Goodrich (HW), Jordan Loos, William McGinn, Alex Rustaey, Dave Tournquist (HW), David Trevas, Yi Tong Zhang

Table 1 - Record of Meeting

2:45pm - 3:05pm	**Meeting Preparation** ● For EGR 323 -- go to EGR reception office **every time** the room needs to be unlocked ● Skype meeting conducted through Lync communication system	EGR 323
3:05pm - 3:15pm	**Begin Meeting** ● Meeting started by Alex Rustaey & Haley Flenner ● Waiting for Dave Tournquist to join conference call ● Topics ○ Reference pressure regulator (RPR) history ○ Project Scope ○ Customer & Engineering Requirements ○ Deliverables	EGR 323
3:15pm - 3:25pm	**Reference Pressure Regulator (RPR) History** ● Dave Tournquist history ○ Chief engineer at Honeywell for 38 years ● Created first RPR three years ago → based on best practices at the time ● Issues with RPR's ○ Currently utilizes fixed pressure in servo device ○ Internal friction (hysteresis) too	EGR 323

	high ○ Reduces accuracy ○ Creates instability ○ Leakage in the system ● Cost ○ $139/total pieces ○ $400/total pieces historically ○ $200/total pieces currently	
3:25pm - 3:35pm	**Project Scope (Project Expectations)** ● Compare and contrast existing technologies, both from Honeywell and competitors ● Create new design for implementation ● Not so much concerned with heat transfer properties -- mostly concerned with general design	EGR 323
3:35pm - 3:45pm	**Customer Requirements** ● Affordable ●	EGR 323
	Engineering Requirements ● Cost: < $200 ● Diaphragm: 1.25 in^2 ○ +/-0.5psi before use ○ +/- 1 to 2 after use ● Seat: ⅛” (0.125 in) ● Area ratio: 100/1 psi ● Poppet: .001 to .005 off of the seat (keep as close to seat as possible) ○ Currently made of cobalt alloy ○ On seat with a changing load → too close for comfort ● Adjustment screw necessary ● Reduce cost of guide (currently made of a stainless steel alloy) ● Pressure: +/- 25 psi ○ When in real life use, needs to withstand *at least* 600 psi ○ Can we test at higher pressures on campus? → find out ● Budget is approximately $3,000.00 ● Implement pressure reducing valve (“emergency stop” if device exceeds a certain pressure during testing)	
3:45pm - 3:50pm	**Deliverables** ● Design ● Prototype/Proof of Concept	EGR 323

	○ Fully machined if possible ● Provide clients with a list of team-decided accomplishable deliverables by next meeting	
3:50pm - 3:55pm	**Closing Comments** ● Next meeting on 10/03/2017 at 3:00pm via Lync ● Include Haley, Dave, and Kayla on all email correspondence	

Table 2 - Tasks Assigned

Task	**Person Assigned**	**Due Date**	**Date Complete**
Provide client with list of accomplishable deliverables.		10/03/2017	
Research various pressure regulating devices. Examples given from client: scuba regulators, natural gas regulators, gas regulators (used in fuel-injection car engines), etc.		10/03/2017	
Become familiar with mechanical process(es) involved in reference pressure regulator.			
Confirm air compressor availability in NAU Machine Shop. Find out max psi for testing prototype.	Myla Azofeifa	09/26/2017	09/26/2017
Begin thinking about ideas for improved design.			
Complete shop safety training. Must be done on a weekday at 9:30am. Contact Kellan Rothfus for more information.	Jordan Loos Bill McGinn Alex Rustaey Yi Tong Zhang	Spring 2018	

Complete Advanced Shop Training (following the completion of shop safety training). Available every other weekend beginning 9/9 & 9/10. Contact Kellan Rothfus for more information.	Jordan Loos Bill McGinn Alex Rustaey Yi Tong Zhang	Spring 2018	

Documents Provided by Honeywell: located in Google Drive folder under "Team Drive > ME467C - HPRT > Honeywell-Provided Documents."

Next client meeting: Tuesday, 3 October 2017, Engineering Bldg. (#69), Room 323 at 3:00pm.