**Project Hazard Control- For Projects with Medium and Higher Risks**

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| **Name of Project:** T503 Danfoss Environmental Control Chamber | | | | **Date of submission:** 11/19/2021 | |
| **Team member** | | **Phone number** | | **e-mail** | |
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| **Faculty mentor** | | **Phone number** | | **e-mail** | |
| Keith Larson | | 850-410-6108 | | Larson@eng.famu.fsu.edu | |
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| **Rewrite the project steps to include all safety measures taken for each step or combination of steps. Be specific (don’t just state “be careful”).** | | | | | |
| Transportation of heavy equipment and assembly using equipment that is hot is necessary for this project. Some identified hazards involved are: electrocution, crushing due to the heavy equipment, coolant leaking from the dehumidifying unit, burns from high operating temperatures, and cuts caused by sharp edges. To prevent crushing during assembly, at least two people will be present when moving any equipment greater than 20 lbs and protective footwear (or toe guards) is required. Preventing leakage of coolant from the air-conditioning unit when it is moved is done by keeping it stable during movement and away from objects which could puncture the unit. To prevent any cuts, sharp edges will be rounded if possible, during the design process. Burns will be prevented by waiting for the strip heaters to cool before handling, and using protective gloves if necessary. Should the coolant leak from the equipment for any reason, the leakage will be reported, and an EPA type III certified technician will be notified to remove the coolant. During any transportation by car, the equipment is to be securely placed and fastened using belts or the geometry of the car to prevent movement. While at the Danfoss facility, the assembly and implementation of the project will mostly be done by on-site professionals directed by group members. During this process, at least two members should be present at any time.  Wiring will also need to be installed for the equipment to be used. Wiring errors can cause electrocution and cause people to trip over cords. Electrocution is especially at risk when in damp environments. To avoid the combination of wiring and water, a condensation collection system will remove water via a funnel and tube, and return it to the humidifier tank. A qualified electrician should perform all work, and the electrical power must be disconnected before performing all work. Verify that the wiring is dead before proceeding with electrical work. To prevent tripping, the wires will be placed as unobtrusively as possible and as far from sources of water as possible. OSHA standards for dealing with electrocution were used to create preventive measures to ensure safe operation. To further prevent electrocution, protective gloves and appropriate footwear (or toe guards) must be worn. In addition, any cords must be inspected for abrasions or wear prior to use and disconnected when not in use. The cords should also be pulled and strained as little as possible to prevent tearing.  The chamber will also be tested and operated once assembled. Potential hazards during this time are: slippage from condensation or wires, high temperature burns, sharp edges, electrocution, equipment failure and leakage of coolant. To prevent slippage, condensation will be funneled and drained away and in other cases may need to be removed from the floor. Wiring will be placed as unobtrusively as possible, away from sources of water. Prior to handling hot equipment, make sure the equipment is not hot enough to burn and use protective gloves. Edges will be rounded if possible, during the design process. Electrocution will be prevented by wearing appropriate protective equipment (rubber gloves), inspecting cords prior to use, disconnecting them when not in use, and placing as little strain on cords as possible. Equipment failure is prevented by an automatic cut-off of the air-conditioning unit above 110°F, will an automatic mechanical door to vent heat through the top of the chamber when the system needs to be cooled. Coolant leakages will be prevented by keeping the dehumidifier free from objects which could puncture it. If coolant leaks, it will be reported then removed by EPA type III certified technicians. | | | | | |
| **Thinking about the accidents that have occurred or that you have identified as a risk, describe emergency response procedures to use.** | | | | | |
| * Remove the injured person from the location of the accident if possible * Call the necessary authorities depending on the severity (911, supervisor, FSU police) * Call the emergency contacts and inform them of the accident * Remove the source of injury if possible * Cooperate with the authorities when they arrive * Write an accident report with all team members after the incident is over * Send the accident report to the Principal Investigator | | | | | |
| List emergency response contact information: | | | | | |
| * Call 911 for injuries, fires or other emergency situations * Call your department representative to report a facility concern | | | | | |
| Name | Phone number | | Faculty or other COE emergency contact | | Phone number |
| Regina Hall | 850-512-8018 | | Shayne McConomy | | 850-410-6624 |
| Erik Wilson | 904-401-1365 | | Keith Larson | | 850-410-6108 |
| David Blenker | 305-987-8492 | |  | |  |
|  |  | |  | |  |
| Safety review signatures | | | | | |
| Team member | Date | | Faculty mentor | | Date |
| Nicholas Blenker | 3/8/2022 | | Shayne McConomy | |  |
| Tucker Hall | 3/8/2022 | | Keith Larson | |  |
| David Wilson | 3/8/2022 | |  | |  |

**Report all accidents and near misses to the faculty mentor.**