Job Safety Analysis

Enki Robotics 2018

Task	Potential Hazards	Controls
1.Using Hand tools	1.a. Injury from blades, sharp points, drill bits. 1.b. Dropping heavy objects or hand tools.	1.a.i. Make sure the technicians have proper hand tool training. 1.a.ii. The hand tool user has proper protective equipment. 1.a.iii. Make sure the right tool is being used for the correct task. 1.b.i. The hand tool user is in fit condition to use the hand tool and is wearing correct PPE.
2.Using power tools	2.a. Injury from blades, sharp points, drill bits. 2.b. Dropping heavy objects or power tools. 2.c. injury from improper use.	2.a.i. The technician is wearing proper PPE. 2.a.ii. The power tool user is not tired, and in proper condition to use a power tool. 2.b.i. The power tool user is wearing PPE. 2.c.i The technician is properly trained on how to use the specific

		power tool being used.
3.Soldering	3.a. Inhalation of fumes. 3.b. Chemical contamination from lead solder. 3.c. physical injury such as burns.	3.a.i. Solder in a ventilated area. 3.a.ii. The technician soldiering is wearing PPE. 3.b.i. Only use lead free solder. 3.b.ii. Clean hands after using the soldering iron, and avoid contact with skin. 3.c.i. The technician soldiering is wearing PPE. 3.c.ii. The technician that is soldering is properly trained on how to solder.
5.Electrical connections.	5.a. Shock or static 5.b. Electrical shorting	5.a.i. Make sure you are properly grounded. 5.b.i. Make sure there are power connections.
6. Transporting the ROV.	6.a. Injuring back from lifting a heavy object. 6.b. Dropping a heavy object. 6.c. Tripping over other	6.a.i. Have multiple people help carry heavy objects to lessen the load. 6.a.ii. Objects that are too heavy to carry

	materials.	transport with a cart. 6.b.i. While transporting the ROV, and necessary components all crew members should wear proper PPE. 6.c.i. Before transporting the ROV to the pool side always make sure the walkway is clear, and safe to walk on.

Before ROV use.

7. pre-inspection	7.a. Cuts can occur from broken parts of the ROV. 7.b. Exposed wires can short.	7.a.i. When picking up, and touching the ROV always wear PPE. 7.a.ii. Before using the ROV always run through the safety checklist. 7.b.i. Before using the ROV always run through the safety checklist.
8. ROV dry-test	8.a. Motors cut a member while in use 8.b. Electric fire from damage electrical	8.a.i. All team members wear PPE during the ROV pre-inspection.

	components.	8.a.ii. While the ROV pre-inspection is taking place all team members stand away from the ROV. 8.b.i. Before pre-inspection check all wire, and electrical components for damage.
9.ROV wet-test	9.a. The ROV sends an electrical shock throughout the pool.	9.a.i. Always use a fuse

Required Training:

- Experience with Autocad, and CNC machining.
- Knowledge on all hand held tools, and power tools.

Required Personal Protective Equipment(PPE)

- Safety glasses, and closed toed shoes at all time while working with the ROV.
- Ear protection when working with power tools, and loud machinery.
- Gloves, and masks are required with potentially dangerous materials.
- Refrain from wearing loose clothing or having long dangling hair while using power tools.