

NC STATE UNIVERSITY **Safety Plan Report**

Plan Number 79 **Annual Approval** 3/30/2012
Area 111 Lampe Drive **Approved** 4/14/2011
Room 110 **Approval Notes** No chemicals in this area

Investigators

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Dan Leonard

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Department Industrial & Systems Engineering

Authorized Personnel

Personnel	Position
Jingyan Dong	Assistant Professor
Ola Harrysson	
Yuan-Shin Lee	

Emergency Contacts

Contact	Number
Campus Emergencies	911
Carolinas Poison Center	(800) 848-6946
Environmental Health and Safety Center	(919) 515-7915
Wake Medical Canter Emergency	(919) 350-8000
Daniel Leonard	(919) 515-2361

ASSEMBLY

Description

Light hand assembly operations using manual and pneumatic tooling, and electronic and manual gauging.

Categories	Description
Decontamination Procedures	
Engineering and Ventilation Controls Required	Emergency Stops on all workstations employing automated equipment.
Hazardous Chemicals/Chemicals Classes	
Potential Hazards	Pinch points on automatic conveyor and ASRS. Eye hazards (mechanical) caused by mishandled parts.
Special Animal Use Precautions	
Special Handling and Storage Requirements	All process related chemicals are to be stored in the FM approved storage cabinet. Spill cleanup is the responsibility of the individual(s) involved. Shop rags are provided for general purpose cleanup.
Spill and Accident Procedures	In the event of an accident involving personal injury, the attending instructor and shop manager must be notified immediately and, based on severity, emergency contacts made through campus public safety.

Hazards

Category Type Description

PPE

Category Type Description

Automated Storage & Retrieval System (ASRS)

Description

(Part of Assembly Process already addressed)

Description

Categories

Decontamination Procedures

Engineering and Ventilation Controls Required E-Stops at entrance zones

Hazardous Chemicals/Chemicals Classes

Potential Hazards

Pinch Hazards

Special Animal Use Precautions

Special Handling and Storage Requirements

Spill and Accident Procedures

Hazards

Category Type Description

PPE

Category Type Description

Programmable Logic Control

Description

Experimentation with automated control using 24Vdc-based sensors and actuators.
Pneumatics also used.

Description

Categories

Hazards

Category	Type	Description
Eye		Impact small component parts

PPE

Category	Type	Description
Safety Glasses	Eye	Used during assembly operations

Robotic Material Handling & Assembly

Description

The use of 6-axis articulated robots in process areas including:

- i) Assembly
- ii) Material Handling
- iii) Inspection

	Description
Categories	
Potential Hazards	Collision with stationary/non-stationary objects
Potential Hazards	Collision with
Potential Hazards	Collision

Hazards

Category	Type	Description
Body	Impact	

PPE

Category	Type	Description
Safety Glasses	Eye	

EVACUATION PLAN

In the event of an emergency:

- 1) Attempt to stop all automated equipment by either pressing an E-Stop or shutting off power to the equipment. The accompanying diagram illustrates the location of safety controls and equipment.

- 2) Proceed to the exit of the laboratory and the building as a group and account for missing persons. In the case of fire, locations are marked on the diagram of all laboratory fire extinguishers. If attempts fail at containing the fire, evacuate the lab, activate the alarm located adjacent to the doors in the foyer, and exit the building immediately. Phone Public Safety (515-3333) from another building immediately. The accompanying diagram illustrates all escape routes from the laboratory and building.

LABORATORY PROCEDURES/SAFETY TRAINING for STUDENTS

Training of students will be done as these individuals are introduced to the laboratory. It will be the responsibility of the principal investigator, whether this be a certified faculty member or laboratory manager who introduces new students, to supply both laboratory safety training in written and/or verbal form. Process-specific training will take place on a "per assignment" basis. The instructor and or lab manager will be responsible for developing safe work habits and guidelines for all laboratory occupants. A process "walk through" will be performed prior to the day's work in the lab. Key elements of safety, including fire, health, and accident reporting will be addressed prior to involvement in laboratory exercises.

