



Technology Development Environmental Health & Safety (EHS)

Supplier Hazard Identification and Energy Control Document

1. Equipment Information

Entity Code (CEID)	
Functional Area	
Process	
Supplier	
Model	
Tool Description	
Tool Type (FOK, Upgrade, Legacy)	
Upgrade Description	

2. Equipment Components

Identify components of tool that are in scope of JHA.

Component	Supplier / Manufacturer

3. Change Control

Date	Rev #	Section	Author	Change Summary

4. Review and Approval

Reviewer	Name	Date Reviewed and Approved

5. Equipment Safety Certification Documents

Document	Required (Yes / No)	Comments
SEMI S2 / S8 Report		
ISMI Environmental Emissions Report		
Chiller / Heat Exchanger Data (fluorinated heat transfer fluid)		
ISMI Combustible Materials Test Report		
CE Mark Declaration of Conformity		



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6. JHA Supplemental Documents

Document	Required (Yes / No)	Comments
PPE Evaluation		
Confined Space Assessment		
Chemical Exposure Qualitative Risk Assessment		
Laser Data Sheet		
Ionizing Radiation Device Inventory Sheet		

7. JHA SCOPE:

List Preventative Maintenance (PM) and Operation (OM) tasks documented and performed.

Note: Non-standard / Non-documented tasks are typically not evaluated. Any non-documented tasks require a pre-task-plan to be completed prior to performing work.

Task List

Spec Name	Spec Number	Rev	Task Description

**Step 1:****Perform Energy Control Procedures (ECP) Assessment:**

ECP's shall be developed for known and routine maintenance activities that will be performed on equipment. Any non-standard / non-documented tasks require a pre-task-plan to be completed prior to performance of work.

Identify Hazardous Energy Types

Yes	N/A	ENERGY TYPE
		Electrical
		• Low Voltage (50-600V)
		• High Voltage (>600V)
		Chemical (e.g. Explosion, pressure, extreme heat, fire, corrosive, solvent, reactive, oxidizer, toxic)
		Pressure (e.g. Hydraulic/pneumatic)
		Vacuum
		Mechanical (e.g. Capable of crushing, pinching, cutting, snagging, striking)
		Thermal - (e.g. high surface temp, hot liquid, steam)
		Thermal - Cryogenic
		Ionizing Radiation
		Non-ionizing Radiation
		Ultra-Violet
		Infrared
		RF/Microwave
		Laser
		Magnetic
		Stored (e.g. Flywheels, springs, differences in elevation, elevated parts that could drop, capacitors, batteries)

Hazardous Energies Control Point Listing: Identify Energy control procedures for every energy type identified above.

HAZARDOUS ENERGY TYPE	DANGER ZONE	ISOLATION POINT	POINT TO DISCONNECT/ DISSIPATE ANY STORED ENERGY	METHOD/LOCATION TO VERIFY NO RESIDUAL ENERGY EXISTS

- Document the highest arc flash PPE required for CEID installed on site as a reference.

Step 2:**Identify Energized Electrical Work Hazards:**

TASK DESCRIPTION	SOURCE/LOCATION	VOLTAGES PRESENT



Step 3:

Document Personal Protective Equipment (PPE): Perform a task-by-task assessment of activities:

- List tasks to be performed on a known and routine basis;
- Identify hazards employees will be exposed to in each task (use hazards identified in ECP table);
- Define PPE required to protect employees from hazards in addition to the controls defined in ECP.

TASK		POTENTIAL HAZARDS	PPE REQUIRED
1			
2			
3			

Step 4:

Document Chemical Hazards

List all chemical hazards. Include process chemicals, maintenance chemicals and any anticipated or known byproducts. Also, include chemicals that are used in closed loop systems (chillers, etc) and internal to tool.

Process Chemicals

CHEMICAL NAME & SYMBOL/ABBREV.	PROPERTIES	STATE	HAZARDS

PM Chemicals

CHEMICAL NAME & SYMBOL/ABBREV.	PROPERTIES	STATE	HAZARDS

Process Byproduct Hazards

BYPRODUCT DESCRIPTION	PROPERTIES	STATE	HAZARDS

Notes for step 4:

- List chemical as it is listed in the safety data sheet (SDS)
- Reference SDS and GHS standard to complete properties, state, and hazards sections



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Step 5:

Provided a summary of a Chemical Exposure Qualitative Risk Assessment:

Step 6:

Ergonomic Hazards:

List all parts over 10 lbs that are lifted manually or with a lifting device.

NAME OF PART TO BE MANUALLY HANDELED	PART WEIGHT (LBS)	FREQUENCY OF HANDLING (E.G. WEEKLY, MONTHLY, QUARTERLY, ETC)	IS LIFTING ASSIST SUPPLIED OR SPECIFIED? (E.G. HOIST, CRANE)	LIFTING DEVICE CAPACITY

- Does the supplier provide lifting devices, step stools, work platforms, or ladders with the equipment? If so, please list these items:

Perform Ergonomics Assessment

Based on the parts listed, complete a task-by-task analysis of ergonomic hazards.

TASK	HAZARDS	LOCATION	CONTROL

Step 7:

Identify and Evaluate Ionizing Radiation Hazards:

List all ionizing radiation hazards.

LOCATION OF SOURCE	MAX VOLTAGE (KVP)	TYPICAL VOLTAGE (KVP)	MAX CURRENT (MA)	TYPICAL CURRENT (MA)

- Has an Ionizing Radiation Device Inventory sheet been completed for each source? Yes ☐ No ☐

Step 8:

Identify and Evaluate Non-Ionizing Radiation Hazards

List all non-ionizing radiation hazards. Non-ionizing radiation includes the spectrum of ultraviolet (UV), visible light, infrared (IR), microwave (MW), radio frequency (RF), and extremely low frequency (ELF).

NON IONIZING RADIATION HAZARD	LOCATION OF SOURCE	FREQ / WAVE-LENGTH	MAX POWER / FIELD STRENGTH	NOMINAL POWER / FIELD STRENGTH



Step 9:

Complete Radiation Tables for PM Spec if applicable.

Specific radiation sources and hazards:

RADIATION SOURCE/TYPE	IONIZING/ NONIONIZING	HAZARD	CONTROLS

Radiation source leak check procedure:

SPECIFY REASON FOR LEAK CHECK	PROCEDURE	NOTE/RESULTS

Step 10:

Identify and Evaluate Laser Hazards:

LASER TYPE	LOCATION	OPERATING LASER CLASS	MAINTENANCE LASER CLASS	POWER/ ENERGY	WAVE- LENGTH

Note: The operating laser class refers to the laser product, while maintenance laser class refers to the laser source embedded in the tool.

- Does Open Beam Work need to be performed? Yes ☐ No ☐

Step 11:

Identify and Evaluate Noise Hazards Noise:

Identify all noise sources at or above 80 dB.

TYPE	SOUND LEVELS (dBA)	LOCATION

Step 12:

Identify and Evaluate Oxygen Deficient Environments:

Identify all "spaces" where inert gases/cryogenics are used and determine if there is oxygen depletion potential. Rooms, tool cabinets, or other enclosures around inert uses are considered inert use "spaces."

SPACE LOCATION



Step 13:

Identify and Evaluate Confined Space Hazards:

A space must meet all three of the following requirements to be considered a confined space. If the space meets these requirements a confined space assessment must be completed and documented.

1. A space is large enough and so configured that an employee can bodily enter and perform work.
2. The space has a limited or restricted means of egress.
3. The space is not designed for continuous human occupancy.

DESCRIPTION OF SPACE	NON-PERMIT REQUIRED	PERMIT REQUIRED	ALTERNATE ENTRY IS POSSIBLE

Step 14:

Identify Handling Systems and Lifting Devices:

Complete the following table for any hoist and/or crane systems that are used:

HOIST / CRANE MANUFACTURER	ID #	EXTERNAL / INTERNAL TO EQUIPMENT	TYPE (HOIST, CRANE, SLING, END EFFECTOR)	INSPECTION FREQUENCY (e.g. ANNUAL, MONTHLY)

Step 15:

Identify and Evaluate Working from Height Hazards:

Identify all work activities performed from a ladder or other work platform. Also identify any work performed at or above 4 feet.

LOCATION	ACTIVITY / TASK	LADDER / WORK PLATFORM REQUIRED	PERSONAL FALL PROTECTION SYSTEM REQUIRED



Step 16:

Identify and Evaluate Waste Hazards:

Identify type of wastes that may be generated as a result of the PM or Operations. Examples are: IPA and IPA wipes, contaminated debris, lead contaminated debris, arsenic contaminated debris, vacuumed material*, etc.

WASTE GENERATED	CHEMICAL CONTAMINATION	SAFE HANDLING PRACTICES	DISPOSAL LOCATION

* Vacuum use should be determined as House Vac, Nilfisk or Arsenic.

* The general house vacuum system must generate a non-hazardous waste. No liquids (solvents/corrosives) nor metal-bearing material (Ag, As, Ba, Ca, Cr, Hg, Pb, Se) shall be allowed in the house vacuum system.

Step 17:

Identify and Evaluate Decontamination Hazards

List parts that may be shipped for rebuild, off site parts clean, disposal on a routine basis.

Item #	Part Name or Intel Part #	Chemical Contamination	Existing Contamination byproducts)	Estimated Amount of (incl. Contamination Remaining*
1				
2				

Item #	Part Name or Intel Part #	Decon Process	Preparation for Transport