NC Job Risk Assessment

Name(s) of Risk Team Members: L. Davis, D. Elling, R. Sabatini, W. Han	**Point Value → Parameter ↓**	**1**	**2**	**3**	**4**	**5**
	Frequency (B)	**≤once/year**	**≤once/month**	**≤once/week**	**≤once/shift**	**>once/shift**
Job Title: Thermal Synthesis, oven and furnace operation **Job Number or Job Identifier: NC-JRA-002**	**Severity (C)**	**First Aid Only**	**Medical Treatment**	**Lost Time**	**Partial Disability**	**Death or Permanent Disability**
Job Description: Work with ovens, furnaces, reactors, dryers, and other thermal equipment.	**Likelihood (D)**	**Extremely Unlikely**	**Unlikely**	**Possible**	**Probable**	**Multiple**
Training and Procedure List (Optional): As per ESR and SAF's						
Approved By: R. Sabatini Rev. #: **1**						
Stressors (if applicable, please list all):		**Reason for Revision (if applicable):** Required review			**Comments:**	

			Before Additional Controls							After Additional Controls						
Job Step / Task	**Hazard**	**Control(s)**	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**Control(s) Added to Reduce Risk**	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**% Risk Reduction**
Use of hazardous chemicals, as samples in equipment or in cleaning	Exposure to vapors, mists, fumes, or liquids. See Working with Chemicals NC-JRA-003	Vented equipment used for highly toxic gases; PPE (safety glasses, gloves, etc.)	N	1	5	2	3	30								

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Use of compressed gas cylinders for sample flow or as a reaction gas.	See "Compressed Gas Work" NC-JRA-004	General compressed gas work, PPE	Y	1	3	2	3	18								
Use of pressure devices	Uncontrolled release of pressure	Pressure vessel design and certification, shielding, training, ESH Committee Review	N	1	4	2	2	16								
Operating ovens, furnaces, and other thermal equipment, RF, microwave, propane fueled	Burns from contact & RF	Work area conditions, design, insulation, tools and tongs, PPE: aprons, safety glasses, and gloves.	N	1	4	2	3	24								
	Electrical shock from faulty equipment	Tier 1 Inspection of equipment; equipment design, disconnect power when servicing, insulation, tools and tongs, PPE: aprons, safety glasses, and gloves. EEI inspections	N	1	4	3	2	24								
	Reflex "jerk" injury from burn or shock	Equipment design, insulation, tools and tongs, PPE: aprons, safety glasses, and gloves.	N	1	4	2	2	16								
Attaching or modifying wiring, thermocouples,	Burns from contact	Equipment cooled prior to work, gloves, insulation, PPE	N	1	1	3	2	6								

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sensors or control circuits to furnaces	Electrical shock	Disconnecting power prior to servicing; training, insulation, tools and tongs, PPE: safety glasses, gloves.	N	1	1	3	2	6								
	Reflex "jerk" injury from burn or shock	Equipment design, insulation, tools and tongs, PPE: aprons, safety glasses, gloves.	N	1	1	2	2	4								
Use of an un-shielded heat source, torch, fuel-gas system for soldering, welding or other operation	Burns from contact	Work area conditions, burning permits design, insulation, tools and tongs, PPE: aprons, safety glasses, gloves.	N	1	3	3	2	18								
	Fire due to ignition of surrounding materials or clothing	Area inspections and preparation, Tier 1, training, fire retardant clothing, fire watch	N	1	3	2	2	12								
Removing samples or equipment that has been heated	Release of hazardous chemicals	Vented equipment used for highly toxic gases; PPE.	N	1	5	2	2	20								
	Burns, Breaking of the equipment by rapid pressure or temperature change	Insulation, allowing item to cool prior to handling; tools and tongs, PPE: aprons, safety glasses, gloves.	N	1	5	2	2	20								
Further Description of Controls Added to Reduce Risk:																

***Risk:**	**0 to 20 Negligible**	**21 to 40 Acceptable**	**41 to 60 Moderate**	**61 to 80 Substantial**	**81 or greater Intolerable**