

## Construction Rigor Levels Screening Criteria

Contractors will ensure that work is conducted by qualified and trained workers. When applicable, activities will be conducted by workers who are: certified, registered or otherwise documented as qualified by their trade/profession, or are licensed to perform that activity by the appropriate government organization.

Job Safety Hazard Evaluations or Activity Hazard Analysis and permits such as confined space and radiological work further address Sandia-specific qualifications and training is required for high rigor activities.

Work control is built into numerous FMOC processes. For example: CSSP review, pre-job and other scheduled meetings, building permits, additional permits such as hot work and cutting welding and brazing, and code and safety inspection by FMOC staff.

Feed back on FMOC construction activities is provided to contractors by several means such as: immediate, on scene feedback by inspectors, quarterly meetings and the monthly newsletter.

Issue/Hazard	Rigor Level	
	Low	High
<b>ES&amp;H Issues</b>		
Radiological	<ul style="list-style-type: none"> <li>• Work in controlled areas and radioactive material areas</li> <li>• A non-routine activity that requires a RWP</li> </ul>	<ul style="list-style-type: none"> <li>• Radiological work requiring ALARA review</li> <li>• Work in High Contamination Area. High Radiological Area or Very High Radiation Area</li> </ul>
Non-ionizing radiation	<ul style="list-style-type: none"> <li>• Work with class IIIR or less lasers</li> </ul>	<ul style="list-style-type: none"> <li>• Potential exposure &gt;TLV</li> <li>• Work with class IIIb or IV lasers</li> </ul>
Confined space entries	<ul style="list-style-type: none"> <li>• Non-Permit Confined Space or</li> <li>• PRCS downgraded to not require permit</li> </ul>	<ul style="list-style-type: none"> <li>• Permit Required Confined Space (PRCS)</li> </ul>

Issue/Hazard	Rigor Level	
	Low	High
Noise	<ul style="list-style-type: none"> <li>Noise level &lt;85 dBA TWA not to exceed 103 dBA</li> </ul>	<ul style="list-style-type: none"> <li>Noise level &gt;85 dBA TWA or Noise level &gt; 103 dBA for any duration</li> </ul>
Unique PPE	<ul style="list-style-type: none"> <li>Paper/fiber dust mask, Air purifying respirator, and/or gloves matched to unique chemical hazards (i.e., other than neoprene)</li> </ul>	<ul style="list-style-type: none"> <li>Level A or B PPE</li> <li>Fire-retardant radiological clothing</li> </ul>
Excavation, digging, trenching, concrete coring, or wall/floor/ceiling penetration > ¾ in.	<ul style="list-style-type: none"> <li>Hand digging &lt; 12 in.</li> <li>Wall, floor, or ceiling penetration &lt; 2 in. where the worker can identify all potential hidden hazards.</li> </ul>	<ul style="list-style-type: none"> <li>Hand or motorized trenching, digging, or excavations &gt; 12 in.</li> <li>Wall, floor, or ceiling penetration &gt; 2 in.</li> <li>Any wall, floor, or ceiling penetration where a site investigation has cannot identify all potential hidden hazards.</li> </ul>

Issue/Hazard	Rigor Level	
	Low	High
Electrical Work	<ul style="list-style-type: none"> <li>• De-energized (discharged)</li> <li>• Trouble shooting circuits less than 50 V</li> <li>• Plug and cord electrical connection disconnected, no capacitors</li> <li>• Zero Energy Verification measurements (high likelihood of deenergized state)</li> <li>• Routine troubleshooting, including instrument readings,</li> <li>• Routine High Voltage switching (single source/operation)</li> </ul>	<ul style="list-style-type: none"> <li>• Routine High Voltage switching ( multi-source/operations))</li> <li>• Manipulation of energized circuit components &gt; 50 V</li> <li>• Non-Routine High voltage switching ( multi-source/operations)</li> </ul>
Control of Hazardous Energy (stored energy, hydraulic, thermal, pneumatic, mechanical, etc.)	<ul style="list-style-type: none"> <li>• Plug and cord electrical connection disconnected, no capacitors</li> <li>• Moving and hookup compressed gas cylinders</li> <li>• Capable of being easily isolated; no disassembly required</li> <li>• Single source LOTO meeting the eight criteria in ES&amp;H Manual 4C</li> </ul>	<ul style="list-style-type: none"> <li>• Breaking into system with uncharacterized content</li> </ul>

Issue/Hazard	Rigor Level	
	Low	High
Environmental Aspects/ Impacts	<ul style="list-style-type: none"> <li>• Will not affect or change a facility's physical (e.g., ground disturbance) or operations (e.g., adding new hazardous test materials) environment</li> <li>• Involves/ creates hazardous or mixed waste with approved waste disposal path</li> <li>• Using an approved/permitted air emission source</li> <li>• Creating or potential to create No Disposal Path waste</li> </ul>	<ul style="list-style-type: none"> <li>• Demolition work with potential legacy waste concerns</li> <li>• May affect or change a facility's physical or operations environment</li> <li>• Impacts land use</li> </ul>
Elevated work	<ul style="list-style-type: none"> <li>• Using ladder &gt; 4 feet above surface</li> <li>• Other work requiring fall protection gear, (i.e., harness, lanyard, etc.)</li> <li>• Man-lift, bucket truck, similar motorized lifts, with fall protection gear per procedure/qualification</li> </ul>	<ul style="list-style-type: none"> <li>• Work requiring a fall protection plan</li> <li>• Scaffold erection greater than 125'</li> </ul>

Issue/Hazard	Rigor Level	
	Low	High
Work with hazardous chemicals	<ul style="list-style-type: none"> <li>• Work with lead solder</li> <li>• Work with stable, confined beryllium</li> </ul>	<ul style="list-style-type: none"> <li>• Potential to exceed exposure limits including action level, 8-hour TWA, or Short Term Exposure Limit, Ceiling Limit, etc.</li> <li>• Work with any other Beryllium or other chemicals having substance specific OSHA or DOE standards</li> <li>• Isolating or breaking boundary for hazardous HVAC system</li> <li>• Work with toxic gases such as metal hydrides (e.g., arsine, diborane) and corrosives (e.g., hydrofluoric chlorine)</li> <li>• Work with flammable liquids near ignition sources.</li> <li>• Work with unbound engineered nanoparticles</li> <li>• Application of coatings or insulation containing sensitizers.</li> </ul>
Hoisting and Rigging; Heavy lifting;	<ul style="list-style-type: none"> <li>• Forklift work with trained personnel</li> <li>• Ordinary lift with trained/qualified personnel</li> </ul>	<ul style="list-style-type: none"> <li>• Critical lifts</li> </ul>

Issue/Hazard	Rigor Level	
	Low	High
Pressure/ Vacuum	<ul style="list-style-type: none"> <li>• Use of compressed air for operations such as painting, cleaning operations, maintaining tire pressure, etc.</li> <li>• Use of water systems for car wash operations, landscape applications, etc.</li> <li>• Hydraulic applications involving pressure such as re-fueling of vehicles, etc.</li> <li>• Gas cylinder handling and change-outs or routine cryogenic Dewar fill/use applications</li> <li>• Use of standard utilities such as compressed dry air, cooling water, “house” supplied gases (nitrogen), etc. connected to laboratory equipment</li> <li>• Involves installation/fabrication of a new or modification of an existing pressure/vacuum system</li> <li>• Involves installation of new equipment not previously used by the laboratory/facility that will be connected to standard utilities</li> </ul>	<ul style="list-style-type: none"> <li>• Work involving additional hazards (acute chemical hazards such as toxic or pyrophoric gases)</li> <li>• Work requiring additional PPE such as respiratory protection</li> </ul>
Moving Industrial Trucks and Equipment		<ul style="list-style-type: none"> <li>• Any work within &lt;10 ft of a overhead power line &gt; 50 kV, including equipment movement underneath</li> </ul>

Issue/Hazard	Rigor Level	
	Low	High
Heat/Cold Stress	<ul style="list-style-type: none"> <li>Heat/cold stress managed only by stay time and clothing</li> </ul>	<ul style="list-style-type: none"> <li>Extreme temperature conditions using special PPE/facilities</li> </ul>
Welding/thermal cutting/brazing	<ul style="list-style-type: none"> <li>Welding, cutting of mild steel</li> <li>Brazing of copper</li> </ul>	<ul style="list-style-type: none"> <li>Work on stainless steel or other metal coated with toxic materials such as lead or cadmium</li> <li>Work in close proximity to flammable or combustible materials</li> </ul>
Impact to pedestrian and vehicular traffic	<ul style="list-style-type: none"> <li>No effect on vehicular or pedestrian traffic.</li> <li>Barricades that limit access to work site but do not affect movement of pedestrians or vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>Long term projects within in 5' of vehicular traffic.</li> <li>Work requiring stoppage or rerouting of pedestrian or vehicular traffic.</li> </ul>
Silica Producing operations	<ul style="list-style-type: none"> <li>Manual sanding, grinding or breaking of silica-containing materials.</li> </ul>	<ul style="list-style-type: none"> <li>Motorized sanding, grinding or breaking of silica-containing materials,</li> </ul>
Asbestos abatement	<ul style="list-style-type: none"> <li>Small-scale, short duration tasks.</li> <li>Work defined as Class IV under 29 CFR 1026.1101</li> </ul>	<ul style="list-style-type: none"> <li>Asbestos work defined as Class I, II or III under 29 CFR 1026.1101</li> </ul>

Issue/Hazard	Rigor Level	
	Low	High
<b>Complexity and Coordination Issues</b>		
Uncertainty	<ul style="list-style-type: none"> <li>• Routine</li> <li>• New but similar to task completed previously</li> </ul>	<ul style="list-style-type: none"> <li>• Job entry required to quantify hazards (i.e., magnitude of hazard not fully known)</li> <li>• Accident recovery for damaged facilities</li> </ul>
Location	<ul style="list-style-type: none"> <li>• Normally assigned work area under direct authority of supervisor</li> <li>• Readily accessible area at SNL, including key-card areas for authorized personnel</li> <li>• Special access controls requires escorting of unauthorized SNL personnel</li> <li>• Remote, off-site work location</li> </ul>	<ul style="list-style-type: none"> <li>• Areas with restricted access due to special security or health concerns</li> </ul>