**Berkeley Lab Facilities QEW Job Safety Plan**

<table>
<thead>
<tr>
<th>Date of JSP</th>
<th>Person in Charge (PIC)</th>
<th>Planner</th>
</tr>
</thead>
</table>

**Work Order**

- Scope of work provides enough detail to adequately describe all tasks. Y / N.
- Scope of work on work order falls within approved activity in WPC and all workers are trained & authorized. Y / N.
- Work Order includes LOTO information: Y / N or N/A.
- Work Order includes Voltage information and Shock Risk Assessment (SRA): Y / N or N/A.
- Work Order includes Arc Flash information and Arc Flash Risk Assessment (AFRA): Y / N or N/A.
- Equipment contains hazardous capacitors (100V and 10J) and Work Order includes Capacitor bus voltage, Capacitor total stored energy in Joules and the Capacitor Discharge wait time: Y / N or N/A.

Use Long Form when any of the above questions are answered No and the Work Order doesn’t provide adequate information.

<table>
<thead>
<tr>
<th>QEW Level: ______</th>
<th>Hazard Class: ______</th>
<th>Voltage: _____ AC/DC</th>
<th>IE: _____ cal/cm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode: 0 / 1 / 2 / 3</td>
<td>□ Standby*</td>
<td>□ Safety Watch**</td>
<td>Switching: Haz / Non-Haz</td>
</tr>
</tbody>
</table>

**Electrical Safe Work Plan or Energized Electrical Work Permit**

- **Electrical Safe Work Plan**
  - Method of Procedure (MOP)
  - Switching Tag
  - Other written procedure
  - N/A

- **EEWP - Energized Electrical Work Permit** *Required for Mode 3 work.*
  - □ Approved EEWP for Mode 3
  - □ N/A

- EEWP#: ______

**Control of Work Area**

- Minimum Approach Boundary: ______ inches
- Will barricade tape be used? ....................... Y / N
- Notice
- Caution (for additional hazards other than electrical)
- Warning
- Danger
- Will an Attendant be used? ....................... Y / N

**Job Safety Plan Approval**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person In Charge (PIC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor, Work/Activity Lead, or Division Approver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Safety Officer (ESO)</td>
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</tbody>
</table>

LBNL Facilities JSP Use with Work Order  Page 1 of 3  Oct 2019
Use Long Form when Hazard ID, Risk Assessment & Work Controls have NOT previously been approved or Work Order has incomplete information

<table>
<thead>
<tr>
<th>Equipment Conditions</th>
<th>Environmental Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meets conditions for normal operation: Y / N</td>
<td></td>
</tr>
<tr>
<td>Properly installed</td>
<td></td>
</tr>
<tr>
<td>Properly maintained</td>
<td></td>
</tr>
<tr>
<td>All doors and covers closed and fully latched</td>
<td></td>
</tr>
<tr>
<td>No signs of impending failure</td>
<td></td>
</tr>
<tr>
<td>Not labeled as Overdutied Equipment</td>
<td></td>
</tr>
</tbody>
</table>

Working Clearance: _______ inches per NEC

- Condition 1
- Condition 2
- Condition 3

Does the environment present additional hazards that should be addressed? Y / N

- Insufficient lighting
- Wet location
- Confined space
- Insufficient/cramped/awkward space
- Heavy traffic
- Fall hazard
- Lookalike equipment
- Noisy environment

**ERROR PRECURSORS**

*Instructions:*

1. Select any and all error precursors from LIST A.

**List A: Possible Error Precursors**

**Task Demands:**
when specific mental, physical, or team requirements to perform a task either exceed the capabilities or challenge the limitations of the individual assigned to the task.

- Time pressure (in a hurry)
- High workload (memory requirements)
- Simultaneous or multiple tasks
- Repetitive actions or monotony (risk of complacency)
- Critical steps or irreversible acts
- Lack or unclear standards
- Other (specify) _____________________________
- N/A

**Work Environment:**
when general influences of the workplace, organizational, and cultural conditions affect individual performance.

- Distractions/interruptions
- Changes/departures from routine
- Confusing displays or controls or Look-alike equipment
- Workarounds/out of service instrumentation
- Obscure electrical supplies or configurations
- Unexpected equipment conditions
- Personality conflicts
- Other (specify) _____________________________
- N/A

**Individual Capabilities:**
when an individual's unique mental, physical, and emotional characteristics do not match the demands of the specific task.

- Unfamiliar with, or first time performing task
- Lack of knowledge
- New technique not used before
- Imprecise communication habits
- Lack of proficiency or experience
- Other (specify) _____________________________
- N/A; workers have shown proficiency for task & procedures
Use Long Form when Hazard ID, Risk Assessment & Work Controls have NOT previously been approved or Work Order has incomplete information

<table>
<thead>
<tr>
<th>Human Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>when traits, dispositions, and limitations common to all persons are more</td>
</tr>
<tr>
<td>likely to cause mistakes in adverse environments. Consider whether there</td>
</tr>
<tr>
<td>would be significant adverse impact if additional controls are not</td>
</tr>
<tr>
<td>implemented. (Circle those that apply in current situation).</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1. Stress (limits attention)</td>
</tr>
<tr>
<td>2. Assumptions</td>
</tr>
<tr>
<td>3. Mind-set</td>
</tr>
<tr>
<td>4. Mental shortcuts (biases)</td>
</tr>
<tr>
<td>5. Habit patterns</td>
</tr>
<tr>
<td>6. Complacency/overconfidence</td>
</tr>
<tr>
<td>7. Inaccurate risk perception</td>
</tr>
<tr>
<td>8. Limited short-term memory</td>
</tr>
</tbody>
</table>

ERROR PRECURSORS

**List B: Possible Controls**

1. **Reduce overall risk upfront.**
   - Identify ways to avoid reliance on PPE and move up the hierarchy of controls.

2. **Develop and adhere to a written Electrical Safe Work Plan.**
   - Step-by-step procedure read, outcome understood.
   - Circle the task to be performed, check off each task as it is completed.
   - Assign person to manage the procedure.

3. **Self-check with verbalization.**
   - Stop, Think, Act, Review (STAR).
   - Verbalize intent before, during, and after each task.

4. **Establish clear communications.**
   - Limit unnecessary chatter, move bystanders away.
   - Shutdown/slow down noise-producing machinery.
   - Use three-way communication methods: verbal repeat back of all procedure steps before execution, and verbal confirmation that each step is complete.
   - Use of the phonetic alphabet for clarity.

5. **Stop when unsure.**
   - Verify initial conditions prior to starting a procedure, and final conditions at the end.
   - Establish hold points to verify conditions.
   - Stop and obtain further direction when unable to follow a procedure or process step or if something unexpected occurs.
   - Maintain a questioning attitude.

6. **Flagging and Blocking.**
   - Identify (flag) equipment and controls that will be operated or opened.
   - Prevent access (block) to equipment and controls that should not be operated or opened.