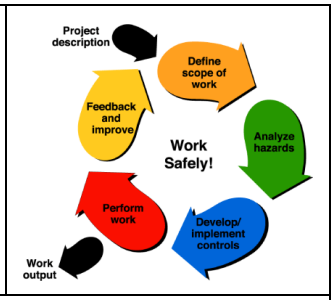
Berkeley Lab
QEW
Job Safety Plan



Date of JSP		**Person in Charge (PIC)**	
		Planner	

Scope of Work

Describe the overall scope of work to be performed. List basic sequence of tasks for the job from start to finish. Complete a Task Risk Assessment worksheet for each task.

Indicate overall/highest job classification as applicable:

QEW Level: _____	**Hazard Class: _____**	**Voltage: _____ AC/DC**	**IE: _____ cal/cm^2**
Mode: 0 / 1 / 2 / 3	☐ **Standby**	☐ **Safety Watch**	**Switching: Haz / Non-Haz**

Work Control Documents

WPC Activity Authorizing the Work

- ☐ Scope of work falls within an approved activity in WPC.
- ☐ All workers' training is up to date in the Activity.
- ☐ Workers are authorized by Activity Lead.

Activity #: _____

Control of Hazardous Energy Method

- ☐ Exclusive control of plug
- ☐ Cord & Plug LOTO
- ☐ Simple LOTO
- ☐ Complex LOTO
- ☐ Complex LOTO with RI
- ☐ N/A (Mode 2 or 3 only)

LP#: _____

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#: _____

Job Safety Plan Approval

Position	Name	Signature	Date
Planner			
Person In Charge (PIC)			
Supervisor, Work Lead or Activity Lead			
Electrical Safety Officer (ESO)			

TASK RISK ASSESSMENT WORKSHEET: TASK # ___

Describe the specific task, then perform the Risk Assessment, selecting appropriate PPE and work controls for this task.

Voltage: _____ AC/DC	**IE: _____ cal/cm²**	**(E) Hazard Class: _____**	**QEW Level: _____**
(F) Mode: 0 / 1 / 2 / 3	☐ **Standby**	☐ **Safety Watch**	**(K) Switching: Haz / Non-Haz**

(C) Shock Risk Assessment (SRA)

Is there an exposure to live parts? …… Y / N

If yes, continue the SRA.

Highest voltage: _____ V AC/DC/Other

Shock Approach Boundaries: (H)

- Limited Approach Boundary (LAB): _____ in
- Restricted Approach Boundary (RAB): _____ in

Will the hands enter the RAB? …… Y / N

If yes, voltage gloves are required.

Voltage glove class: 00 / 0 / 1 / 2 / 3 / 4 (G)

Will any other part of the body enter the RAB? …… Y / N

If yes, insulating sheeting is required.

(B) Arc Flash Risk Assessment (AFRA)

Does the task create an increased risk of an arc flash hazard? …… Y / N

If yes, continue the AFRA.

Incident energy: _____ cal/cm²

Working distance: _____ inches

Arc flash boundary: _____ inches

Arc Flash PPE Level: 1 / 2 / 3 / 4 (L)

Is there a 2-second rule?
Is the upstream OCPD maintained?

Incident Energy Reduction Measures:

- ☐ None
- ☐ Maintenance mode switch
- ☐ Temporary breaker setting changes
- ☐ Greater standoff distance

UNDER REDUCED PARAMETERS:

Incident energy: _____ cal/cm²

Working distance: _____ inches

Arc flash boundary: _____ inches

Capacitor Stored Energy

Does the equipment contain hazardous capacitors? … Y / N

Capacitors are hazardous if more than 100V and more than 10 Joules.

Capacitor bus voltage: _____ V AC/DC

Capacitor total stored energy: _____ Joules

Discharge wait time: _____ minutes

Control of Work Area

Greater of LAB and AFB: _____ inches

Will barricade tape be used? …… Y / N

(F)

- ☐ Notice
- ☐ Caution
- ☐ Warning.
- ☐ Danger

Attendant: Y / N

Equipment Conditions	Environmental Conditions
Meets conditions for normal operation: Y / N (J) If No, Reason?_____ Working Clearance: _____ inches ☐ Condition 1: No Live or Grounded Parts ☐ Condition 2: Live or Grounded Parts ☐ Condition 3: Electrical Equipment	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

Volts to Ground	Cond. 1	Cond. 2	Cond. 3
0-150 V	3 ft	3 ft	3 ft
151-600 V	3 ft	3.5 ft	4 ft

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
- ☐ Critical steps or irreversible acts
- ☐ Interpretation requirements
- ☐ Unclear goals, roles, or responsibilities
- ☐ Lack of or unclear standards

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
- ☐ Workarounds/out of service instrumentation
- ☐ Obscure electrical supplies or configurations
- ☐ Unexpected equipment conditions
- ☐ Lack of alternative indication
- ☐ Personality conflicts

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 (faulty mental model)
- ☐ New technique not used before
- ☐ Imprecise communication habits
- ☐ Lack of proficiency or experience
- ☐ Indistinct problem-solving skills
- ☐ Unsafe attitudes for critical task
- ☐ Inappropriate values

Human Nature:
when traits, dispositions, and limitations common to all persons incline an individual to err under unfavorable conditions.

- ☐ Stress (limits attention)
- ☐ Habit patterns
- ☐ Assumptions
- ☐ Complacency/overconfidence
- ☐ Mind-set
- ☐ Inaccurate risk perception
- ☐ Mental shortcuts (biases)
- ☐ Limited short-term memory

ERROR PRECURSORS	
2. *Using the numbers in brackets [..], identify and circle controls in LIST B that would help control or prevent the error precursors that you have identified*	**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.

Emergency Response Plan	
Nearest landline location……...	_____
Sufficient cell phone signal……...	Y / N
Clear exit path…….....	Y / N
AED nearby? …….....	Y / N Location: _____
Fire extinguisher nearby? ……	Y / N Location: _____
Contact release method available and tested	Rescue Hook / Voltage Gloves / Other _____
Second person identified, trained and briefed?.....	Y / N

Job Briefing

PIC Conducts the Job Briefing. Cover all the contents of the Job Safety Plan.

Identify any new equipment conditions, environmental conditions, or error precursors.

PIC:

Name	Signature	Date/Time

Second Person:

Name	Signature	Date/Time

Other Participants:

Name	Signature	Date/Time

Instructions for completing the QEW Job Safety Plan

1. A Job Safety Plan (JSP) must be completed for every job that includes a exposure to an electrical hazard. The JSP must be completed by a QEW of the level appropriate for the exposure. In general, either the PIC or a designated QEW Planner may prepare the JSP.
2. The JSP cover sheet includes a summary scope of work, summary risk assessment, identifies related work control documents, and documents the approvals necessary for the JSP.
3. The scope of work should describe the overall scope, and list out specific tasks in a sequence (task #1, task #2, etc.)
4. A risk assessment is performed for each task using the Task Risk Assessment Worksheet. Use as many TRAW sheets as there are tasks. To determine whether a set of subtasks can be included in one TRAW, consider whether the hazards and controls will be the same.
5. After completing the TRAWs for each task, identify any Error Precursors for the overall job, and select appropriate controls to minimize the probability or severity of a human error during the performance of the work.