

Hazardous Electrical Work Approval

Level of Qualified Electrical Worker	Job Briefing and Documentation Requirements	Mode of work (0, 1) Note 1.	Review (R)/Approval (A) Required	Independent Observer (Additional Qualified Person) Requirements for Field Observations (Y/N). Note 2.
Level 1 QEW <ul style="list-style-type: none"> • 60 Hz AC: <ul style="list-style-type: none"> ○ < 230 volts; transformer < 125 kVA (or no arc flash hazard) • DC and Batteries: <ul style="list-style-type: none"> ○ ≥ 100 volts and available short circuit current ≤ 500 amps • Capacitors: <ul style="list-style-type: none"> ○ ≤ 400 volts and < 10,000 J • Sub-RF and RF: <ul style="list-style-type: none"> ○ ≤ 250 volts and ≤ 500 amps 	<ul style="list-style-type: none"> • Verbal Job Briefing including scope of the work and review of LO/TO (No written documentation required) 	Mode 0	<ul style="list-style-type: none"> • QEW 1 or 2 (R) • Line Supervisor or Foremen (Verbal Approval) (A) 	<ul style="list-style-type: none"> • NO, Not Required
	<ul style="list-style-type: none"> • ANL Mode 1 Electrical Work Job Briefing Form • Procedure for all complex LO/TO 	Mode 1	<ul style="list-style-type: none"> • ESH Coordinator (R) • Electrical SME (R) • Line Supervisor, Group Leader or Foreman (A) 	<ul style="list-style-type: none"> • YES (Worker and independent observer) • Complete Electrical Safety Field Observation Checklist
Level 2 QEW <ul style="list-style-type: none"> • 60 Hz AC: <ul style="list-style-type: none"> ○ ≤ 600 volts ○ > 600 volts that is of facility (not utility) type • DC and Batteries: Any • Capacitors: Any • Sub-RF and RF: Any 	<ul style="list-style-type: none"> • Verbal Job Briefing including scope of the work and review of LO/TO (No written documentation required) 	Mode 0	<ul style="list-style-type: none"> • QEW 2 (R) • Line Supervisor or Foremen (Verbal Approval) (A) 	<ul style="list-style-type: none"> • NO, Not Required
	<ul style="list-style-type: none"> • ANL Mode 1 Electrical Work Job Briefing Form • Procedure for all complex LO/TO 	Mode 1	<ul style="list-style-type: none"> • ESH Coordinator (R) • Electrical SME (R) • Line Supervisor, Group Leader or Foreman (R) • Department Manager or Line Manager (A) 	<ul style="list-style-type: none"> • YES (Two-person and independent observer) • Complete Electrical Safety Field Observation Checklist
Level 3 QEW Utility Systems type 60 Hz AC electrical equipment > 600 volts	<ul style="list-style-type: none"> • Verbal Job Briefing including scope of the work and review of LO/TO (No written documentation required) 	Mode 0	<ul style="list-style-type: none"> • QEW 3 (R) • Line Supervisor or Foremen (Verbal Approval) (A) 	<ul style="list-style-type: none"> • NO, Not Required
	<ul style="list-style-type: none"> • ANL Mode 1 Electrical Work Job Briefing Form • Switching Orders 	Mode 1	<ul style="list-style-type: none"> • ESH Coordinator (R) • Electrical SME (R) • Line Supervisor, Group Leader or Foreman (R) • Department Manager or Line Manager (A) 	<ul style="list-style-type: none"> • YES (Two-person and independent observer) • Complete Electrical Safety Field Observation Checklist

Mode 0 – Equipment or wiring has already been placed in the electrically safe work condition.

Mode 1 – The work is to place the equipment or wiring in the de-energized electrically safe work condition including zero voltage verification (ZVV).

- Note 1: Cord and plug equipment may be placed in the electrically safe work condition (Mode 0) by unplugging and controlling the sole plug so it cannot be plugged in, as long as there is no stored hazardous energy inside the unit and the cord and plug is the only source of hazardous energy to the unit. **THIS DOES NOT REQUIRE AN ANL Mode 1 Electrical Work Job Briefing Form.**
- Note 2: The Independent Observer must have completed Electrical Safety Observer training and should be a QEW outside of the group that planned the work. If this is not feasible, the line manager must approve the observer. The observer must be qualified to the appropriate level per LMS-POL-69 and is an addition to the number of workers required by the applicable LMS Procedure for the work.
- Note 3: When two persons are required review the applicable LMS Procedure to determine if the person is required to be a safety watch or an additional person. Electrical LMS Policies and Procedures are listed below for reference.

Argonne [ESH-9.1](#), *Electrical Safety Program – General Electrical Safety*

Argonne [ESH-9.2](#), *Electrical Safety Program – Electrical Worker Safety*

Argonne [ESH-9.3](#), *Electrical Safety Program – Electrical Systems and Equipment*

Argonne [ESH-7.1](#), *Lockout/Tagout Program*

Argonne [LMS-PROC-185](#), *Simple Lockout/Tagout*

Argonne [LMS-PROC-208](#), *Determining Work Controls for Electrical Work on Batteries*

Argonne [LMS-PROC-230](#), *Determining Work Controls for Electrical Work on 60 Hz AC*

Argonne [LMS-PROC-248](#), *Determining Work Controls for Electrical Work on DC*

Argonne [LMS-PROC-249](#), *Determining Work Controls for Electrical Work on Capacitors*

Argonne [LMS-PROC-250](#), *Determining Work Controls for Electrical Work on AC Other Than 60 Hz*

Argonne [LMS-PROC-253](#), *Testing, Procuring, and Using Voltage-Rated Gloves*

Argonne [LMS-PROC-287](#), *Performing an Electrical Arc Flash Risk Assessment*

Argonne [LMS-PROC-294](#), *Performing Electrical Work Involving Shared Neutrals*

Argonne [LMS-PROC-321](#), *Performing an Electrical Shock Risk Assessment*