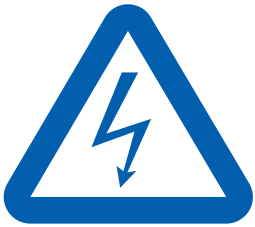
MARATHON®

JOB SAFETY ANALYSIS NOTEBOOK



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A JSA is intended to define the scope of work, identify and enable personnel to analyze the hazards, aid in the development and implementaion of hazard mitigations, which in turn allows personnel to perform work safely within the established controls. Read and answer the critical safety questions below, document the date, scope, hazards, and mitigations. After workers have signed the JSA, work can begin.

STOP and LOOK For Potential Hazards:

Has a JJSV been conducted?
Are the tools correct for the job?
Has other work in the area been evaluated?
Has the work area been properly barricaded?
Have the environmental factors been considered?
Has the work area been evaluated for fall hazards?
Is the procedure/checklist accurate and complete?
Has the work area been evaluated for burn hazards?
Is the equipment properly prepared and energy isolated?
Has exposure to pressurized gas or liquid been evaluated?
Have electric shock and arc flash hazards been evaluated?
Is the PPE identified on the safe work permit appropriate?
Has the work area been evaluated for line-of-fire hazards?

*If “NO” is answered to any of these questions,
STOP and reassess the job*

Job Safety Analysis

Date: _____

Job Scope: _____

Job Location: _____

Work Order Number: _____

ANALYZE Potential Hazards:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Hazard MITIGATION:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Employee Signatures

_____ _____

_____ _____

_____ _____

ARC				SHOCK			
Incident Energy:			cal / cm²	Shock Hazard:			volt
Arc Flash Boundary:			ft / in	Limited Approach:			ft / in
Working Distance:			ft / in	Restricted Approach:			ft / in
Condition:	good	poor		Condition:	good	poor	
Likelihood:	probable	improbable		Likelihood:	probable	improbable	
Severity:	low	moderate	high	Severity:	low	moderate	high unacceptable

Notes

ARC FLASH/BLAST RISK ASSESSMENT				
Task Complexity		Simple	Moderate	Complex
Incident Energy		Severity of Harm		
	1.2 - 12 cal / cm^2	Low	Moderate	Moderate
	> 12 - 40 cal / cm^2	Low	Moderate	Moderate
	> 40 cal / cm^2	Low	High	High

Arc Flash / Blast Likelihood	
Equipment is in good physical condition.	Improbable
Equipment is in poor physical condition.	Possible

Likelihood	**Severity of Harm**		
	Low	Moderate	High
Improbable Possible	Low	Moderate	High

Severity	**ARC FLASH/BLAST RISK EVALUATION**
Low	Risk acceptable further mitigation is discretionary. Wear Arc Flash PPE based on incident energy level and Appendix D in RSP-1162. Utilize remote racking equipment if available.
Moderate	Risk acceptable. Wear Arc Flash PPE based on incident energy level and Appendix D in RSP-1162. Utilize remote racking equipment if available.
High	Incident energy levels > 40 cal / cm^2 require remote racking or engineering controls. Diagnostic testing to be performed de-energized in an electrically safe work condition.

SHOCK RISK ASSESSMENT					
		Severity of Harm			
Task Complexity		Simple	Moderate	Complex	Within Restricted Approach
Hazard Level	50V to 150V	Low	Moderate	Moderate	High
	151 to 750V	Low	Moderate	Moderate	High
	751V to 15KV	Low	Moderate	Moderate	High
	>15KV	Low	Moderate	Un-acceptable	Unacceptable

Shock Likelihood	
The source of harm is adequately guarded to avoid contact.	Improbable
The source of harm is not adequately guarded to avoid contact.	Possible

Likelihood	Severity of Harm			
	Low	Moderate	High	Unacceptable
Improbable	Low	Low	Low	Low
Possible	Low	Moderate	High	Unacceptable

Severity	Shock Risk Evaluation
Low	Risk acceptable. Refer to Appendix B in RSP-162 for work within the limited approach boundary.
Moderate	Risk acceptable. Refer to Appendix B in RSP-162 for work within the limited approach boundary.
High	Guard if feasable. If guarding is infeasible, an Energized Electrical Work Permit is required.
Unacceptable	This work will be performed de-energized in an electrically safe work condition and under LOTO.

Task Complexity Guide

Task	Complexity		
	Simple	Moderate	Complex
Racking LV & MV circuit breaker			X
Diagnostic voltage testing - contact			X
Diagnostic voltage testing - non-contact		X	
Racking MV motor starter		X	
Operating MV disconnect switch		X	
Work within limited approach boundary		X	
Operating LV molded case CB & disconnects	X		
Other Task - specify task and task complexity on JSA			

Energized Part to Employee (distance in feet - inches)			
Voltage Phase -to- Phase	Limited Approach Boundary		Restricted Approach Boundary
	Exposed Moveable Conductor	Exposed Fixed Circuit Part	Standard Inadvertent Movement
50V - 150V	10′ - 0″	3′ - 6″	Avoid Contact
151V - 750V	10′ - 0″	3′ - 6″	1′ - 0″
751V - 15KV	10′ - 0″	5′ - 0″	2′ - 2″

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