|  |  |
| --- | --- |
| **Student Name:**  | **Student Signature:**  |
| **Advisor Name:**    | **Advisor Signature:**  |
| **Date Assigned:**  | **Practical Date Due:** |

**Completion of the record indicates the individual has shown requisite level of knowledge and skills to safely assess hazards, plan jobs, and work on systems utilizing the appropriate safety precautions.**

*Prerequisites are required prior to completion of all other tasks.*

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| **Prerequisite Training** |
| **Training** | **Instructor Signature** | **Date Completed** |
| EIC Safety Orientation |  |  |
| EIC Electrical and Arc Flash Safety Training |  |  |
| EIC LO Training |  |  |

*Level of knowledge Interviews are required to be conducted with a qualified electrical worker and approved qualifier. The qualifier’s signature is indication that the individual has demonstrated sufficient working level of knowledge on the topic to use in risk assessments, job planning, and maintenance/troubleshooting as well as understand the limitations of knowledge and skill.*

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|  **Risk Assessment and Job Planning Procedure - Level of Knowledge Interviews** |
| **Topic** | **Qualifier Signature** | **Date Completed** |
| **The Three Elements of the Risk Assessment Procedure*** Hazard Identification include human error factors
* Risk Assessment
* Implementing the hierarchy of risk control methods
	1. Elimination
	2. Substitution
	3. Engineering Controls
	4. Awareness
	5. Administrative Controls
	6. PPE
 |  |  |
| **Job Safety Planning and Pre-Job Briefing*** Review the Electrical Lab Project Assessment form and discuss the elements required for each block to include job safety planning and job briefing requirements l
* Required information in a Job Safety Plan
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| **Establishing an Electrically Safe Work Condition - Level of Knowledge Interviews** |
| **Topic** | **Qualifier Signature** | **Date Completed** |
| **Lockout Procedures – Elements of Control** Discuss elements of control listed in Article 120 of the NFPA 70E and applications to the facility. |  |  |
| **8 Step Process for Establishing and Verifying an ESWC*** Using manufacturer drawings, technical manuals, and test plan one-lines to determine all sources of power.
* Visually verify breakers and disconnects
* Releasing/blocking stored energy of any type.
* Applying lockouts per documented procedures
* Using test equipment to test conductors de-energized.
 |  |  |
| **Special Requirements and Procedures*** Induced Voltages and equipment grounding
* Equipment with capacitors
* Power Electronic equipment such UPS, VFD, etc.
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| **Instrumentation and Meters – Level of Knowledge / Hands On Training*****The various instruments and meters should be demonstrated and used as part of the interview when applicable and feasible*** |
| **Topic** | **Qualifier Signature** | **Date Completed** |
| Discuss various types of meters and their operation and limitations* Multi-meter, Voltmeter, Ammeter, Oscilloscope, etc.
* Voltmeter Categories (I,II,III,IV)
 |  |  |
| Pre/post use inspection and calibration.  |  |  |

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| **Shock Hazard - Level of Knowledge Interviews** |
| **Task** | **Qualifier Signature** | **Date Completed** |
| **Shock Risk Assessment** * How to conduct a shock risk assessment
* Implementing hierarchy of risk control to mitigate shock
 |  |  |
| **Energized Work with Restricted and Limited Approach Boundaries*** What qualifies as energized work. (establishing an ESWC, working in the vicinity or directly on conductors over 50V)
* Discuss how to determine the boundary distances
* Requirements for working in the Limited Approach Boundary
* Requirements for entering the Restricted Approach Boundary
 |  |  |
| **Shock Hazard Protective Equipment and Practices*** Objective of shock hazard protective equipment
* Assessing the shock hazards and selecting protective equipment and job practices
* Glove Selection and clothing/footwear requirements
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| **Arc Flash - Level of Knowledge Interviews** |
| **Topic** | **Qualifier****Signature** | **Date Completed** |
| **Arc Flash Risk Assessment*** Understanding and interpreting results of the arc flash risk assessment to estimate likelihood and severity
 |  |  |
| **Arc Flash Boundary*** Energy and risk at the arc flash boundary
* Establishing and controlling the boundary
 |  |  |
| **Arc Flash PPE Selection** * Reading and interpreting the danger and warning labels
* EIC PPE requirements for different energy levels
* Purpose of arc flash PPE and the function of each item
* Donning, doffing, and caring for arc flash PPE
 |  |  |
| **Laboratory Specifics - Level of Knowledge Interviews** |
| **Topic** | **Qualifier****Signature** | **Date Completed** |
| **Laboratory Equipment*** Location of R5-Panel and circuit breaker associated with lab
* Construction and operation of disconnect switches with associated outlets
 |  |  |
| **Laboratory Techniques*** Proper cabling and termination techniques
* Approach to test configurations changes and adjustments
* Using Insulated tools and insulating/shielding materials
* Test equipment vs voltage verification equipment
 |  |  |
| **Experiment Safety Design*** Overcurrent protection and grounding
* Incorporating appropriately rated cabling, fuses, circuit breakers, and other components/equipment into the design
* Identifying and guarding exposed conductors
 |  |  |

*The practical is the final assessment the individual can use their knowledge to safety plan a job and execute the job utilizing the necessary safety precautions to include proper use of PPE, meters, tools, etc.*

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| **Practical** |
| **Task** | **Qualifier****Signature** | **Date Completed** |
| Perform Job Safety Planning and risk assessment procedure |  |  |
| Conduct a Job Safety Briefing  |  |  |
| Establish an electrically safe work condition that requires the use of a lockout procedure |  |  |
| Check and don both shock and arc flash PPE |  |  |

**Revision History**

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| --- | --- | --- | --- | --- |
| Revision | Date | Summary of change | Author | Approver |
| A | 1/17/2020 | Initial issue | Nancy LaFlair | J. Curtiss Fox |
| B | 2/12/2021 | Aligned pre-requisite presentations | Jesse Leonard | Steering committee |