

HOUSE RULES FOR OUTSIDE CONTRACTORS

EVEREADY BATTERY COMPANY, INC.

MARYVILLE, MISSOURI

Revised – 02/03/2011

HOUSE RULES FOR OUTSIDE CONTRACTORS

Supplemental Maryville Plant Rules

These Rules and Guidelines explain the rules Contractors must follow to safeguard themselves and EBC employees. Contractor personnel must know and follow these rules. If these rules are unclear to the Contractor, the Contractor must seek clarification from EBC Plant Representative.

- 1.0 General Safety and Health
 - 1.1 Emergency Eye Wash/Shower Safety
- 2.0 Security
- 3.0 Interruption and Use of Plant Services
- 4.0 Work in EBC-Occupied areas
- 5.0 Welding Procedures
- 6.0 Miscellaneous
- 7.0 Parking Facilities
- 8.0 Compressed Air Usage
- 9.0 Electrical Safety
- 10.0 Concrete Work
- 11.0 Hazardous Work Permit Procedures
- 12.0 Usage of Shop Equipment
- 13.0 Confined Space
- 14.0 Hazardous Energy Control (LOTO) Program
- 15.0 Work Procedures to cut Anode Tube for disposal

1.0 **SAFETY AND HEALTH**

The Contractor must take all necessary precautions to protect its own employees, subcontractor employees, and EBC employees and facilities from hazards arising from contract work or in connection with EBC's operations or substances located at or near the construction site.

Before contract work begins, the Contractor must review all applicable safety and health regulations, requirements and hazards. Contractor must notify EBC of how these regulations, requirements, and hazards will be communicated to and enforced among its employees and subcontractors. The Contractor must review the applicable safety and health regulations, requirements and programs with its employees and must make sure that its subcontractors have reviewed the same information with their employees.

The Contractor must include the provisions for these Rules and Guidelines in all subcontracts related to the contract work. Although these provisions are included in the subcontracts, it is the Contractor's obligation to make sure that all work complies with these provisions.

The Contractors shall be subject to inspection and review as to workmanship, construction procedures, safety, and progress by Eveready Battery Co., Inc.'s employees and/or representatives.

The Contractor shall maintain its own safety and health program. However, EBC representatives may make recommendations to assure the protection of EBC employees.

1.1 **Emergency Eye Wash/Shower Safety**

Eye Wash Procedures:

CHEMICAL IN EYE

1. It may be necessary for someone to hold the person's eye or eyes open for them while they are being flushed. Assistance should be given to the person whenever possible.
2. The eyes should be flushed with tepid water for approximately 20 minutes. The longer they can be flushed with water, the better. This is the most critical step in preventing serious injury.
3. After the eyes have been flushed for approximately 20 minutes, the individual should be taken to the doctor/emergency room.

THERMAL BURN TO EYE (welder burn, etc.)

1. Flush the eye for approximately 5-10 minutes.
2. Cover the eye with eye patch.

3. Take the individual to the hospital or to a doctor.

CONTACT LENS WEARERS

Flush as stated above.

*****As with any injury, anyone who suffers an eye injury, no matter how small, should report it immediately to Human Resources and your Supervisor.***

CAUTION: If you get KOH or Anode on your hands or arms, rinse thoroughly in the sink with water. If you get it on yourself and clothing (including footwear), use the emergency shower units for 20 minutes. You should remove your clothes and shoes while under the shower.

In the event that KOH (potassium hydroxide) comes in contact with a colleague's skin, the following procedure should be followed. Go to the nearest emergency shower, eyewash station or sink and flush the contaminated area of the body with large amounts of water for 20 minutes (the longer, the better). If clothing has been contaminated, the colleague should flush the affected area.

After flushing the area in water, contact your supervisor and ECR or EBC colleague immediately.

2.0 SECURITY

- 2.1 Contractor badges will be issued by EBC after the contract employee has read and signed the "Contractor Safety Compliance Program" and "House Rules for Outside Contractors". The on-site foreman must bring new employees to the Human Resources department to receive a badge. The foreman is also responsible to return badges to the Human Resources department when an employee leaves the facility upon completion of their work. During July shutdown the badges will be handed out at the contractor's entrance at the North side of the facility.
- 2.2 Each Contractor must prepare a daily list of its employees and those of its subcontractors who will work on the job site. EBC's representative may request a copy of this list.
- 2.3 EBC and the Contractor must agree on the Contractor's regular working hours. EBC must know and approve of overtime work on weekends or the 2nd or 3rd shifts. Typical work hours are between 7:00am and 3:30pm on Monday through Friday. A separate list of employees working outside of regular hours must be submitted. If weekend work will occur, Contractor must check in with security guard. Security can be reached by pressing the security button located outside the East employee entrance.
- 2.4 It is unacceptable to prop open plant doors. Contractors must not let anyone without a badge enter and should question anyone without a badge in their work area.

3.0 INTERRUPTION AND USE OF PLANT SERVICES

- 3.1 Production operations require plant services such as steam, compressed air, water, heating, air conditioning, electricity, etc., which cannot be interrupted during plant working hours. Therefore, tie-ins must be scheduled and completed during holidays, weekends, or other non-working times. Service interruptions must be planned well in advance and approved by EBC's representative.
- 3.2 Sprinklers, hydrants, or fire fighting systems should only be cut off when absolutely necessary. The Contractor must coordinate cut-offs with EBC well in advance so the EBC's insurance company and local fire department can be alerted.
- 3.3 EBC's representative must approve the location and manner of temporary tie-ins to potable water systems for general use during construction. Tie-in to sprinkler systems/hydrants is not permitted.
- 3.4 EBC permits temporary tie-in to existing electrical systems for incidental construction use such as temporary lighting, temporary offices, hand tools, and construction equipment requiring 1 h.p. or less. Power supplies for larger equipment, such as welders, air compressors, hoists, etc., must be supplied by the Contractor. EBC's representative must approve the location and manner of temporary tie-ins. Work must comply with the National Electrical Code.
- 3.5 EBC does not permit temporary tie-ins to any building service systems other than potable water and electricity as mentioned above.

- 3.6 The Contractor must store flammable liquids at a safe distance from buildings, identify contents, and obtain approval from the EBC Environmental Coordinator. Liquid storage areas must be diked or otherwise confined to control leaks or accidental spills.
- 3.7 No operation of gasoline or diesel engines is permitted in EBC-occupied areas without specific written approval. Propane forklifts may be used only areas approved by EBC and must comply with a carbon monoxide level of 25 PPM or less.

4.0 WORK IN EBC-OCCUPIED AREAS

- 4.1 When work must be done in areas adjacent to EBC-occupied areas, the Contractor should erect suitable and acceptable temporary partitions, barricades, etc., to protect EBC's equipment, materials, furniture, and employees from noise, dust, fumes, etc.
- 4.2 If convenient, EBC may agree to vacate an area for an agreed period of time. To prevent damage from dirt, water, falling objects, etc., the Contractor must cover and protect any equipment, furniture, materials, etc., which cannot be conveniently and temporarily relocated. The Contractor must erect barricades and signs warning EBC employees not to enter the work area.
- 4.3 Absolutely no overhead work is permitted in EBC-occupied areas over EBC employees. With prior EBC approval, the Contractor should schedule this work on weekends, holidays, or other non-production periods. Areas under the work must be barricaded.
- 4.4 EBC will review with Contractor the following workplace rules which apply to EBC-occupied areas:
 - 6 Exposure to chemicals
 - 7 Contact with chemicals
 - 8 Protective measures
 - 9 Shower, eyewash use and locations
 - 10 Emergency telephone number(s)The Contractor must instruct employees on rules applicable to contract work and enforce them.
- 4.5 The Contractor and employees are not permitted to use plant facilities and equipment including:
 - 1. Cafeteria
 - 2. Locker rooms
 - 3. Tools and machine shop equipment unless approved by the Maintenance or Engineering managers.
 - 4. Ladders, scaffolds, etc.
 - 5. Fork truck and other material handling equipment
 - 6. Janitorial equipment
 - 7. Trucks and autos
 - 8. Trash compactors, containers, incinerators, etc.
 - 9. Compressed air systems
- 4.6 Contractors should abide by "5S" procedures for all areas that are being occupied.

5.0 WELDING PROCEDURES

- 5.1 The welding or metal cutting area must be well ventilated. However, strong drafts directed at the welding work should be prevented.
- 5.2 Never support welding or cutting work on compressed air cylinders or containers.
- 5.3 Never weld or cut in the vicinity of flammable gasses or vapors.
- 5.4 Never weld a container/drum which held flammable solutions unless it's been thoroughly steam cleaned.
- 6.10 Never use pure oxygen to ventilate a welding area.
- 5.6 Never weld closed containers, vessels, tanks, or other hollow parts. Before heating, drill a hole in any suspiciously light part made of metal or other materials. A hollow part with no vent hole can explode.
- 5.7 Never weld on a concrete surface. Heated concrete can spall, fly and injure the welder.
- 5.8 Guard all mechanical transmission parts such as gears, shafts, and couplings which are exposed to welding heat.
- 5.9 When welding in confined spaces, such as manholes, take precautions to assure a safe exit. Station an attendant immediately outside the work area to assist as needed. Always leave oxygen and acetylene welding tanks outside of the confined space. Review with EBC representative before starting

confined space work to ensure compliance to EBC confined space program.

- 5.10 To prevent movement, securely block any heavy portable welding equipment mounted on wheels. The portable unit must have a charged fire extinguisher mounted to the frame.
- 5.11 Provide portable fireproof welding curtains to avoid eye injury to personnel in the area.
- 5.12 Remove flammable materials from the area and protect those that cannot be removed.

6.0 MISCELLANEOUS RULES AND GUIDELINES

- 6.1 The Contractor, at its own expense, must appropriately shelter and secure materials remaining outside during the performance of the work to prevent any release or discharge to the environment.

Weatherproof, temporary protection and/or enclosures constructed of plywood or material approved by owner are required where walls/floors/roof or sections of walls/floors/roof have been removed, disturbed, penetrated or are under construction.

All drains/vents/mechanical openings exposed to the weather shall be temporarily capped until permanent caps are installed and new structure is weather-tight.
- 6.2 During dust generating operations, such as saw cutting, concrete breakout, cleanup, etc., Contractor must keep dust to a minimum by use water, vacuum, etc.
- 6.3 No cameras, firearms, or portable radios are permitted on EBC property.
- 6.4 Work platforms or scaffolds must have substantial guard rails (ropes or chains are not acceptable) and toe boards.
- 6.5 Straight ladders must have safety toes and be attended or secured with tie-off ropes. Metal ladders are not permitted on EBC property.
- 6.6 Power lifts and hi-jackers must have and use outriggers, if required by OSHA or manufacturer recommendations for the heights being used.
- 6.7 Publicity - The Contractor may not release information about the work for publication or advertising purposes either before or after completion without prior consent of EBC.
- 6.8 The Contractor's employees must be at least 18 years of age, and skilled and/or certified to operate any equipment used to do the contract work.
- 6.9 No Contractor or contract employee may work on a piece of energized, moving, or normally guarded/interlocked equipment with safety devices or procedures compromised. No electrical or mechanical interlock may be bypassed to permit work on an energized piece of equipment unless authorized by the Contractor and EBC's Facility Manager.
- 6.10 Contractors will not gain admittance to plant property without current copies of Workmen's Compensation and bodily Liability Insurance certificates in effect. These must be submitted to the Purchasing department. Any confined space workers must have confined space training certificates on file with purchasing and the contractor must have a rescue group in place for confined space work.
- 6.11 File 300 Log must be provided before contracts for work are signed.
- 6.12 In the event Contractor operations generate noise exposure levels of 85 decibels or higher, the Contractor shall provide barricades and post "Hearing Protection Required" signs provided by EBC. Noise level measurements will be made by EBC.
- 6.13 All eating on Eveready Battery Co., Inc.'s premises (lunch, breaks) shall be confined to an area designated by Plant Engineer. Eating areas DO NOT include cafeterias, Shipping and Receiving, Production areas, or offices.
- 6.14 Contractors shall participate in severe weather and fire drills if they should occur while working at this facility.
- 6.15 MSDS sheets are located in the following places for information about the chemicals used in the Maryville plant: Dispensary and at each Communication center located in production areas such as Molding, Raw Cell, Parts, etc.
- 6.16 The floor tile and/or adhesive gluing the tile to the floor contains asbestos material. Special training is required to work with the floor tile. No holes are to be drilled in the tile, and the tile is not to be chipped

or removed without prior EBC approval.

- 6.17 All overhead work shall be handled as follows:
- a) Electric lifts can be used if space is available.
 - b) If space is limited, use a mechanical hy-jacker or ladder.
 - c) If limited space requires standing on electric lift or hy-jacker rails, use a ladder.
 - d) If access is so limited as to require climbing over pipes or ducts, the job must be reviewed with the Plant Engineer and proper safety harness must be worn.
 - e) When performing work in areas where bridge cranes are used (Shop, Batch Room, Anode Room), the crane will be locked out. This is to prevent making contact with crane electrification bars and the possibility of being hit by the crane.
 - f) Great care should be taken to make sure that no tools or clamping devices are left unsecured in overhead situations.
- 6.18 Contractors must comply with all OSHA policies for forklift safety when operating on EBC property. Contractor provided forklifts must be retrofitted with a seatbelt.
- 6.19 The forklifts must comply with [29CFR 1910.178](#), in addition the trucks must comply with a carbon monoxide level of 25 PPM or less.
- 6.20 Contractor performing any concrete work must comply with the Energizer Cleaning of Concrete Handling Equipment Policy.
- 6.21 Contractors are permitted to take drinks only (no food), into approved plant production and office areas, and only in approved EBC containers. Approved EBC containers must have tight fitting Snap-on or screw-on lids and be made of a durable strong material (Non-glass/non-breakable). i.e. Travel mugs/containers that fit the criteria listed above would be suitable and permitted. Water bottles with seal-tight lids would be permitted.

7.0 PARKING FACILITIES

- 7.1 The North plant entrance/exit shall be used for all contractors' automobiles for entrance/exit to and from plant property, with parking on the north side of the facility. [See attachment.](#)
- 7.2 Contractors shall be parked so that unloading areas, doorways, auto traffic lanes and aisles are not obstructed.
- 7.3 Entrance to the building proper is permitted through the North overhead and passage door or doors designated by plant engineer.

8.0 COMPRESSED AIR USAGE

Contractors will be required to supply own compressed air system for air hammers and air operated equipment. Gas operated compressors must be placed outside the plant because of fumes.

9.0 ELECTRICAL SAFETY

9.1 Electrical Hazards

1. GENERAL PERSONAL REQUIREMENTS:

Alertness:

Employees shall be instructed to be alert at all times when they are working near live parts within the Limited Approach Boundary of energized electrical conductors or circuit parts or where other electrical hazards exist. Employees are not permitted to work within the Limited Approach Boundary on energized electrical conductors or circuit parts or where other electrical hazards exist while their

alertness is recognizably impaired due to illness, fatigue, or other reasons.

Conductive Articles Being Worn:

Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or unrestrained metal frame glasses) shall not be worn where they present an electrical contact hazard with energized electrical conductors and circuit parts, unless such articles are rendered nonconductive by covering, wrapping, or other insulating means.

Clothing Not Permitted:

Clothing made from flammable synthetic materials that melt at temperatures below 315°C (690°F) such as acetate, acrylic, nylon, polyester, polyethylene, polypropylene, and spandex, either alone or in blends shall not be used.

Eye Protection:

Employees shall wear protective equipment for the eyes to prevent injury from electric arcs, flashes, or from flying objects resulting from an electrical explosion.

Face Protection:

Employees shall always wear eye protection under face shields or hoods.

Foot Protection:

Employees shall wear electrical hazard or EH rated shoes. They shall maintain this footwear clean and free of any known defects.

Housekeeping:

Employees shall maintain all tools and clothing in a clean and dirt free manner.

2. GENERAL WORK REQUIREMENTS:

- Attendants:** If signs and barricades do not provide sufficient warning and protection from electrical hazards, an attendant shall be stationed to warn and protect employees. An attendant shall remain in the area as long as there is a potential for employees to be exposed to the electrical hazards.
- Barricades:** Barricades shall be used in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas containing energized conductors or circuit parts or potential energized conductors or circuit parts. Conductive barricades shall not be used where it might cause an electrical hazard. The barricades shall be placed no closer than the Limited Approach Boundary.
- Blind Reaching:** Employees shall be instructed not to reach blindly into areas that might contain exposed electrical conductors and circuit parts or potential energized electrical conductors or circuit parts where an electrical hazard exists.
- Conductive Cleaning Materials:** Employees shall not use steel wool, metalized cloth, silicon carbide, water, aerosol cleaning fluids, or other electrically conductive cleaning materials inside the Limited Approach Boundary.
- Conductive Materials:** Conductive materials, tools, and equipment that are in contact with any part of an employee's body shall be handled in a manner that prevents accidental contact with energized electrical conductors or circuit parts. Such materials and equipment include, but are not limited to; long conductive objects such as ducts, pipes, tubes, conductive hose and rope, metal-lined rules and scales, steel tapes, pulling lines, metal scaffold parts, structural members and chains.
- Electrical Clearances:** Always assure that proper depth of working space is maintained and present when conducting voltage or amperage measurements on energized conductors or circuit parts.
- Hazardous Classified Locations:** Electrical maintenance conducted in Hazardous or Classified Locations must always ensure that the form of construction, installation, and other maintenance activities being conducted on the equipment uses materials that are suitable for the Hazardous or Classified Location and that the classification is not compromised. All electrical troubleshooting conducted in Hazardous or Classified locations must always adhere to the pertinent JSHA and the procedures required for the area to ensure that the electrical activity does not introduce any additional hazards in itself.

3. GENERAL WORK REQUIREMENTS:

Illumination:

Employees shall not enter spaces containing electrical hazards unless illumination is provided that enables the employees to perform the work safely. Where there is a lack of illumination or an obstruction precludes observation of the work to be performed, employees shall not perform any tasks within the Limited Approach Boundary of energized conductors or circuit parts where an electrical hazard exists.

Qualified Person:

One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved.

Portable Ladders:

Portable ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized electrical conductors or circuit parts where an electrical hazard exists. Metal or aluminum ladders are not permitted in EBM facilities.

Reclosing Circuits After Protective Device Operation:

After a circuit is de-energized by a circuit protective device, the circuit shall not be manually energized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual reclosing of circuit breakers or re-energizing circuits through replaced fuses is prohibited.

Routine Opening and Closing of Circuits:

Load rated switches, circuit breakers, or other devices specifically designed as disconnecting means shall be used for the opening, reversing, or closing of circuits under load conditions.

The routine operation for opening and closing circuits shall adhere to the following:

1. Always properly interrupt the load.
2. Always assume a safe position when energizing or de-energizing an electrical enclosure.
3. Always, keep head and torso turned away from the disconnect when energizing or de-energizing.
4. Maintain solid balance and footing.
5. Position your body such that you are not in front of any part of the enclosure or disconnect.
6. Energize or de-energize by moving away from the enclosure and the disconnect.
7. Stay clear of the electric Arc Blast Zone.

Safety Signs or Tags:

Safety signs, safety symbols or accident prevention tags shall be used where necessary to warn employees about electrical hazards that might endanger them.

4. ENERGIZED ELECTRICAL WORK REQUIREMENTS:

There are three types of electrical work that are permitted to be performed on energized electrical conductors and circuit parts by qualified personnel.

This work includes:

1. **Troubleshooting:** Work performed on energized electrical conductors and circuit parts to determine the cause and location of a problem. Work done under this heading must be performed only with suitable test instruments.
2. **Calibration:** Adjustments performed on electronic components with energized electrical conductors and circuit parts to cause a particular parameter to have a specified value or state.
3. **Repair Work:** Removing, installing modifying or repairing electrical components or wiring on energized electrical conductors or circuit parts. Conducting repair work of any type in an electrical enclosure with energized electrical conductors and circuit parts requires a Hazardous Work Permit.

The following electrical work procedures are to be followed when electrical work is performed on energized electrical conductors and circuit parts or in the immediate vicinity of energized electrical conductors and circuit parts:

1. Electrical troubleshooting work may be performed on energized electrical conductors and circuit parts provided that only approved test instruments are used to perform the task and the proper procedures and personal PPE are applied in the troubleshooting process.
2. Calibration work may be performed on energized electrical conductors and circuit parts provided that only approved test instruments are used to perform the task, there are documented procedures for the calibration, and personal PPE are applied in the calibration process.
3. **Repair work on energized electrical conductors or circuit parts of any kind is prohibited.**
 - a. Conducting repair work of any type in an electrical enclosure with energized electrical conductors and circuit parts requires a Hazardous Work Permit.

Energized Electrical Conductors and Circuit Parts Work = Electrical Hot (Energized) Work:

By definition, electrical "hot" or energized work is repair work on or in the immediate vicinity of energized electrical conductors or circuit parts. The immediate vicinity is defined as any energized electrical conductor or circuit part that is within the reach of the electrical worker when the work task is being performed. An electrical enclosure is considered "energized" if there are any energized electrical conductors or circuit parts inside the immediate enclosure. This includes the line-side of conductors if the enclosure has a main disconnect integral to the enclosure.

5. GENERAL TEST INSTRUMENTS AND EQUIPMENT:

Test Instruments:

1. Test instruments, equipment, and their accessories shall be rated for circuits and equipment to which they will be connected.
2. All voltage and current instruments shall have a minimum rating of CAT III.
3. Test instruments, equipment, and their accessories shall be designed for the environment to which they will be exposed and the manner in which they will be used.
4. Only qualified persons shall perform testing work on or near live parts operating at 50 volts up to 600 volts AC.
5. Test instruments and equipment and all associated test leads, cables, power cords, probes, and connectors shall be visually inspected for external defects and damage before each use. If there is a defect or evidence of damaged that might expose an employee to injury, the defective or damaged item shall be removed from service, and no employee shall use it until repairs and tests necessary to render the equipment safe have been made.

Solenoid Type Voltage Testers:

Use of solenoid type voltage testers that activate a spring-loaded solenoid plunger is prohibited. These testers will draw a small arc when contact is made with the measured surface.

Probe Exposure:

Only the minimum amount of test lead should be exposed on contact type instruments. This minimizes the chance of accidentally causing a short circuit if the test lead contacts more than one conductor at a time.

Proximity Voltage Testers:

The use of proximity type voltage testers are permitted for general diagnostics. Proximity type voltage testers are **not** permitted for establishing an electrically safe condition.

6. GENERAL ELECTRICAL PPE:

Employees working in areas where there are electrical hazards shall use protective equipment that is designed and constructed for the specific part of the body to be protected and for the work to be performed. When an employee is working within the flash protection boundary he/she shall wear protective clothing and other personal protective equipment in accordance with the Flash Hazard Analysis or the listed Hazard Risk Category Classifications.

Body Protection:	Employees shall wear clothing resistant to flash flame wherever there is a possible exposure to an electric arc flash.
Coverage:	All parts of the body inside the Arc-Flash Protection Boundary shall be protected. Shirt sleeves shall be fastened at the wrists and shirts shall be closed at the neck.
Fit:	Tight-fitting clothing shall be avoided. Loose fitting clothing provides additional thermal insulation due to air spaces. FR apparel shall fit properly such that it does not interfere with the work task.
Hand Protection:	<p>Employees shall wear rubber insulating gloves with leather protectors where there is a danger of hand and arm injury from electric shock and burns due to contact with live parts. Gloves made from layers of flame resistant material provide the highest level of hand protection. Heavy-duty leather gloves also provide good protection. Where voltage-rated gloves are used, leather protectors shall be worn over the rubber gloves. The leather protectors also provide good arc-flash protection for the hands.</p> <ul style="list-style-type: none">• Rubber gloves with leather protectors are required to be worn for all voltage measurements and current measurements where the voltage is greater than 50 volts• Leather protectors shall be worn where required for arc flash protection and anytime the hands are inside the Arc Flash Protection Boundary.

7. MINIMUM REQUIRED ELECTRICAL PPE:

The minimum electrical PPE that is required for voltage testing, troubleshooting and calibration on energized electrical systems shall be identified as the EBM Minimum Risk Classification:

Footwear:	Electrical Hazard rated work shoes meeting ANSI Z41 PT91 EH
Insulated Gloves:	Class 00 Rubber Gloves rated at 500 VAC. (Canada: Class 0 Rubber Gloves rated at 600 VAC)
Leather Protectors:	Leather gloves for wearing over the rubber insulated gloves
Eye Protection:	Safety Glasses with side shields meeting ANSI Z87.1
Shirt:	Arc-rated long sleeve with a minimum arc rating of 4
Pants:	Arc-rated long pants with a minimum arc rating of 4
Underwear:	100% cotton
Glove Bag:	Storage bag for protection of rubber gloves and leather protectors
Volt Meter:	Electrically rated for CAT III
Hearing Protection:	Ear canal inserts

NOTES:

1. Clothing made from flammable synthetic materials that melt at temperatures below 315°C (690°F) such as acetate, acrylic, nylon, polyester, polyethylene, polypropylene, and spandex, either alone or in blends shall not be used or worn.
2. Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or unrestrained metal frame

glasses) shall not be worn where they present an electrical contact hazard with energized electrical conductors and circuit parts, unless such articles are rendered nonconductive by covering, wrapping, or other insulating means.

3. Coveralls with a minimum arc-rating of 4 can be worn in lieu of arc-rated pants and shirt provided all other clothing is 100% cotton.

**EBM MINIMUM RISK CLASSIFICATION
ARC-FLASH WARNING LABEL**



NOTES:

1. Denotes EBM Minimum Risk Classification electrical PPE is required
2. Denotes calculated incident energy is less than 1.2 cal/cm²
3. Equates to a Hazard Risk Category 0 in NFPA 70E

EBM Risk Category 1 Classification

EXAMPLE EBM RISK CATEGORY 1 ARC-FLASH WARNING LABEL



NOTES:

1. Denotes calculated incident energy is greater than 1.2 cal/cm² but less than 4 cal/cm².

PPE Required:

1. Arc-rated shirt and pants with a minimum arc rating of 4 required.
2. Coverall with a minimum arc-rating of 4 can be worn in lieu of arc-rated pants and shirt provided all other clothing is 100% cotton.
3. Underwear of 100% cotton is required.
4. Ear canal inserts hearing protection is required.
5. Safety glasses with side shields eye protection per ANSI Z87 is required.
6. A hard hat per ANSI standard Z89.1 class B with a face shield at a minimum arc rating of 4 is required.
7. Class 00 Rubber gloves with leather protectors is required.
8. Electrical hazard rated shoes per ANSI standard ANSI Z41 PT91 EH

The EBM Risk Category 1 Classification equates to the Hazard Risk Category 1 Classification listed in NFPA 70E. The following potential work conducted on facility premises wiring systems is considered an EBM Category 1 classification as follows:

Panelboards rated 240 V and below:

- Work on energized electrical conductors and circuit parts, including voltage testing
- Removal of bolted covers to expose bare energized electrical conductors and parts

It is **PROHIBITED** to conduct the following tasks unless an Electrically Safe Work Condition is

established:

- Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the panelboard
- Remove/install circuit breakers or fused switches

Panelboards or Switchboards rated >240 V and up to 600 V with molded case or insulated case circuit breakers:

- Perform infrared thermography and other non-contact inspections outside the Restricted Approach Boundary
- Circuit breaker or fused switch operation with covers off

600V Class Motor Control Centers (MCCs):

- Perform infrared thermography and other non-contact inspections outside the Restricted Approach Boundary
- Circuit breaker or fused switch or starter operation with enclosure doors open
- Opening hinged covers (to expose bare energized electrical conductors or circuit parts)

600V Class Switchgear with power circuit breakers or fused switches:

- Circuit breaker or fused switch operation with enclosure doors open

Other 600V Class (277 V through 600 V) Equipment:

Lighting or small power transformers (600 V, maximum)

- Opening hinged covers (to expose bare, energized electrical conductors or circuit parts)
- Cable trough or tray cover removal or installation
- Miscellaneous equipment cover removal or installation

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

EBM Risk Category 2 Classification

EXAMPLE EBM RISK CATEGORY 2 ARC-FLASH WARNING LABEL



NOTES:

1. Denotes calculated incident energy is greater than 4 cal/cm² but less than 8 cal/cm².

PPE Required:

1. Arc-rated shirt and pants with a minimum arc rating of 8 required.
2. Coverall with a minimum arc-rating of 8 can be worn in lieu of arc-rated pants and shirt provided all other clothing is 100% cotton.
3. Underwear of 100% cotton is required.
4. Ear canal inserts hearing protection is required.
5. Safety glasses with side shields eye protection per ANSI Z87 is required.
6. A hard hat per ANSI standard Z89.1 class B with face shield at a minimum arc rating of 8, with wrap-around guarding to protect not only the face, but also the forehead, ears and neck along with a balaclava is required or an arc-flash hood is required.
7. Class 00 Rubber gloves with leather protectors is required.
8. Heavy-duty EH rated leather shoes are required.

The EBM Risk Category 2 Classification equates to the Hazard Risk Category 2 and 2* Classifications listed in NFPA 70E. The following potential work, conducted on facility premises wiring systems, is considered an EBM Risk Category 2 classification as follows:

Panelboards or Switchboards rated >240 V and up to 600 V with molded case or insulated case circuit breakers:

- Work on energized electrical conductors and circuit parts, including voltage testing
- Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the panelboard or switchboard

600V Class Motor Control Centers (MCCs):

- Work on energized electrical conductors and circuit parts, including voltage testing
- Work on control circuits with energized electrical conductors and circuit parts >120 V exposed
- Application of safety grounds after voltage test
- Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the panelboard or switchboard

600V Class Switchgear with power circuit breakers or fused switches:

- Perform infrared thermography and other non-contact inspections outside the Restricted Approach Boundary
- Work on energized electrical conductors and parts, including voltage testing
- Work on control circuits with energized electrical conductors and circuit parts >120 V exposed
- Application of safety grounds after voltage test
- Opening of hinged covers (to expose bare, energized electrical conductors and circuit parts

Other 600V Class (277 V through 600V) Equipment:

Lighting or small power transformers (600 V, maximum)

- Removal of bolted covers (to expose bare, energized electrical conductors or circuit parts)
- Work on energized electrical conductors and circuit parts including voltage testing
- Application of safety grounds after voltage test*
- Work on energized electrical conductors and circuit parts, including voltage testing*

It is **PROHIBITED** to conduct the following tasks unless an Electrically Safe Work Condition is

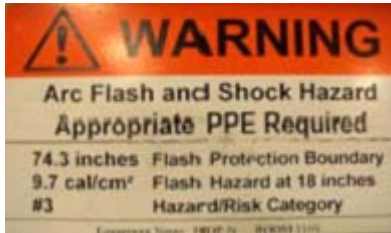
established:

- Revenue meters (kW-hour, at primary voltage and current) insertion or removal
- Insertion or removal of plug-in devices into or from busways

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

EBM Risk Category 3 Classification

EXAMPLE EBM RISK CATEGORY 3 ARC-FLASH WARNING LABEL



NOTES:

1. Denotes calculated incident energy is greater than 8 cal/cm² but less than 25 cal/cm².

PPE Required:

1. Arc-rated pants and shirt or coverall provided all undergarment clothing is 100% cotton and an arc flash suit selected so that the total PPE has a minimum arc-rating of 25 is required.
2. Underwear of 100% cotton is required.
3. Ear canal inserts hearing protection is required.
4. Safety glasses with side shields eye protection per ANSI Z87 is required.
5. A hard hat per ANSI standard Z89.1 class B as required dependent of arc-flash hood.
6. An arc-flash hood with a minimum arc-rating or 25 is required.
7. Class 00 Rubber gloves with leather protectors is required.
8. Heavy-duty EH rated leather shoes are required.

The EBM Risk Category 3 Classification equates to the Hazard Risk Category 3 Classification listed in NFPA 70E.

Presently, there are no Hazard Risk Category 3 classifications listed in NFPA 70E that are pertinent to facility premises wiring systems at EBM.

However, there are EBM Risk Category 3 Classifications throughout facilities and they are marked accordingly with their incident energy based on the arc-flash hazard analysis.

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

EBM Risk Category 4 Classification

EXAMPLE EBM RISK CATEGORY 4 ARC-FLASH WARNING LABEL



NOTES:

1. Denotes calculated incident energy is greater than 25 cal/cm² but less than 40 cal/cm².

PPE Required:

1. Arc-rated pants and shirt or coverall provided all undergarment clothing is 100% cotton and an arc flash suit selected so that the total PPE has a minimum arc-rating of 40 is required.
2. Underwear of 100% cotton is required.
3. Ear canal inserts hearing protection is required.
4. Safety glasses with side shields eye protection per ANSI Z87 is required.
5. A hard hat per ANSI standard Z89.1 class B as required dependent on arc-flash hood.
6. An arc-flash suit hood with balaclava or double-layered switching hood is required with a minimum arc-rating of 40 is required.
7. Class 00 Rubber gloves with leather protectors is required.
8. Heavy-duty leather shoes are required.

The EBM Risk Category 4 Classification equates to the Hazard Risk Category 4 Classification listed in NFPA 70E. The following potential work, conducted on facility premises wiring systems, is considered an EBM Risk Category 4 classification as follows:

600V Class Motor Control Centers (MCCs):

- Removal of bolted covers (to expose bare, energized conductors and circuit parts)

It is **PROHIBITED** to conduct the following tasks unless an Electrically Safe Work Condition is established:

- Insertion or removal individual starter "buckets from MCC

600V Class Switchgear with power circuit breakers or fused switches:

- Insertion or removal (racking) of circuit breakers from cubicles, doors open or closed
- Removal of bolted covers (to expose bare, energized electrical conductors or circuit parts)

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

8. REFERENCE MATERIALS:

OSHA	Occupational Safety and Health Administration CFR 1910.331 - .335
NFPA 70	The National Electric Code 2008 Edition
NFPA 70E	The Standard for Electrical Safety Requirements for Employee Workplaces 2009 Edition
NFPA 79	The Electrical Standard for Industrial Machinery 2007 Edition
NFPA 70B	Recommended Practice for Electrical Equipment Maintenance 2006 Edition
ANSI Z87.1	Practice for Occupational and Educational Eye and Face Protection, 2003
ANSI Z89.1	Requirements for Protective Headwear for Industrial Workers, 2003
ASTM D 120,	Standard Specifications for Rubber Insulating Gloves, 2002a (2006)
ASTM F 479	Standard Specification for In-Service Care of Insulating Blankets 2006
ASTM F 496,	Standard Specifications for In-Service Care of Insulating Gloves and Sleeves, 2006
ASTM F 696,	Standard Specifications for In-Service Care of Insulating Gloves and Sleeves, 2006
ASTM F 819-08	Standard Terminology Relating to Electrical Protective Equipment for Workers
ASTM F 1236	Standard Guide for Visual Inspection of Electrical Protective Rubber Products, 2007
ASTM F 2178	Standard Test Method for Determining the Arc Rating and Standard Specifications for Face Protective Products 2006
ASTM F 2412	Standard Test Methods for Foot Protection, 2005
ASTM F 2413	Standard Specification for Performance Requirements for Foot Protection, 2005
ASTM F 1506	Standard Specifications for Protective Wearing Apparel for Use by Electrical Workers When Exposed to Momentary Electric Arc and Related Thermal Hazards, 2002a
IEEE	The Other Electrical Hazard: Electric Arc Blast Burns by Ralph H. Lee
IEEE	Predicting Incident Energy to Better Manage the Electric Arc Hazard on 600 V Power Distribution Systems Paper No. PCIC-98-36
NFPA	Electrical Safety in the Workplace by Ray a. Jones, P.E. and Jane G. Jones
McGraw Hill	Electrical Safety Handbook – Second Edition by John Cadick, P.E. Mary Capelli-ScgellPfeffer, M.D., M.P.A., and Dennis Neitzel, CPE

The contractors will be permitted to use 480 volt 3 phase and 110 volt single phase electrical power provided by the owner. Only 30 amp -480 volt- 3 phase - 4 wire outlets and 15 amp - 110 volt –single phase - 3 prong standard duplex outlets are available. Other type connections are the sole responsibility of the contractor. No 220 volt power is available. Any wiring changes made to contractors equipment (i.e. welders) in order to match Owner's available wiring (480/3 and 110/1) shall be checked with proper meter(s) devices prior to being placed in service. Drop cords will be furnished and placed by the contractors per the Owner's instructions. Such cords will be kept to a minimum. All wiring installation must meet NFPA 79-1994 Edition, NEC, and EBC Supplement to NFPA 79. All wiring installation practices will have to meet guidelines stated in "Eveready's Electrical Installation of Machine Controls".

9.2 **BUSS PLUGS ARE TO TURNED OFF OR TURNED ON BY MEANS OF THE "HOTSTICK" ONLY. THEY ARE NOT TO BE OPERATED BY HUMAN HAND WHILE THEY ARE ATTACHED TO A BUSS.**

INSTALLATION: NEW OR USED

1. Visual inspection of buss plug (foreign material, loose material).
2. Use megger on used buss plug to determine any shorts.
3. Check mechanical operation of buss plug.
4. Shut off buss.
5. Make visual inspection of buss opening.
6. Turn on buss plug by use of "hot stick" only.
7. Maintain adequate work clearance.

DECOMMISSIONING OF INSTALLED BUSS PLUG

1. Turn off buss plug with "hot stick" only.
2. Remove fuses.
3. Remove wire (if applicable).
4. Plug conduit holes (if conduit is removed).
5. Close access on buss if buss plug is removed.

REUSE OF BUSS PLUG ALREADY INSTALLED ON BUSS

1. Cycle switch with "hot stick"(Use only a "hot stick" to operate plug).
2. Visual inspection of buss plug with buss plug off (foreign material, loose material).
3. Clean buss plug (if necessary) with buss off.
4. Install fuses.

10.0 CONCRETE WORK

- 10.1 The following is the policy concerning the cleaning of concrete handling equipment on Energizer's property. This policy provides for Energizer to be in compliance with the Clean Water Act. Failure to comply with this policy could result in Energizer and/or the individual contractor being cited for noncompliance of the Clean Water Act.

This information will be sent to those contractors who have contracted or sub-contracted a job which specifies the need for concrete on-site.

- 10.2 We want to make every effort to eliminate this risk. Our expectations of any contractor or sub-contractor with regards to the cleaning of concrete handling equipment are as follows:
1. Concrete handling equipment that we will allow to be rinsed on our property consists of wheel barrows or carts used to transport concrete to a job site, the chutes used to transfer concrete from a concrete truck to a cart or job site, and any tools used to form the concrete.
 2. Any remaining concrete in a truck after the job is finished **will not** be dumped on any part of Energizer's property.
 3. The cleaning of concrete handling equipment during rain showers **will not be allowed** on Energizer property, unless dumping in a pre-approved diked area. (Exceptions to this rule can only be approved by the on-site Environmental Coordinator. This is to eliminate the potential for rain water to wash the concrete debris into a nearby drainage ditch, which eventually leads to the nearby river system).
 4. The cleaning of concrete handling equipment (reference Item #1) **will be allowed on dry days** and be limited to a specific area as shown on the attached drawing. This only allows the cleaning of equipment referenced in Item #1, not the remaining amount of concrete in a truck after the job is finished as referenced in item # 2. This location is to the north of the facility on the gravel access road. (Reference the attached Facility Layout Plan)
 5. If we are dealing with large amounts of concrete debris for example from a building expansion, the facility may designate an area other than what is shown on the drawing for the trucks to clean their chutes. This area will typically have a dike and the residual material will be removed at a later date. Prior arrangements will be made with the Environmental Coordinator and the Engineering Manager for this designated area.

11.0 HAZARDOUS WORK PERMIT PROCEDURES

- 11.1 Hazardous work permits are required for work in the following areas:

1. Any work on anode gel and KOH lines, pumps and components, including bulk KOH, raw cell, and anode rooms. The exceptions to this are cleaning plugged strainers in the hoppers, and changing out pumps on the anode or assembly machines.
 2. Work on Waste treatment systems including:
 - a. Sumps in anode room
 - b. Piping, pumps and tanks in waste treatment systems, including cleaning out of tanks, but not changing filters or acid barrels.
 3. Tank entry including waste water, and KOH.
 4. Major steam, hot water, or gas piping changes.
 5. Overhead and regular welding, cutting or grinding outside a designated welding booth area.
 6. Dust collector repair/bag replacement.
 7. Overhead work where fall protection is required and anchorage points need to be identified before work can be performed.
- 11.2 When doing work in any of the above areas, or any area you feel might require a permit, contact your supervisor/ECR/EBC personnel so that a work permit can be obtained.
- 11.3 This procedure is established to insure that you are able to complete the job in a safe manner.

12.0 USAGE OF SHOP EQUIPMENT

- 12.1 Energizer Equipment allowed to be used in conjunction with Loan Equipment Agreement and associated Safety Training – This is a Corporate Policy and will be restricted to a limited number of Contractor Users and must be pre-approved with the Engineering or Maintenance Mgr. **Please see EQUIPMENT LOAN AGREEMENT form on page 9. This form must be completed and approved by EBC prior to using shop equipment.**

Metal Shear
 16 Gauge Metal Brake
 10 Gauge Metal Brake
 Band Saw
 Cut-Off Saw
 Drill Presses
 Panel Saw
 Label Engraver
 Bench Grinders
 Table Saw

12.2 **Equipment Not Permitted For Use:**

Automobiles/Trucks
 Fork Trucks
 Scissor Lifts
 Portable Scaffolding
 Large Shop Equipment like: Lathes, Mills, Grinders, Fostick Drill Press, etc.
 Hydraulic Press
 Threaders

13.0 CONFINED SPACE

- 13.1 Outside contractors who will perform services in which confined space is involved on our premises will be required to adhere to 29 CFR, 1910.146.

- ◆ Contractor will be informed of any/all hazards and precautions associated with the Confined Space to be entered, and our experience with that space (documentation required).
- ◆ Maryville and the Contractor will coordinate entry operations if both contractor Colleagues and Maryville Colleagues are working in the same space.
- ◆ Contractor will supply their own equipment, entry permit system, attendants, rescue arrangements and make their own classification of the confined space.
- ◆ Contractor is to provide (Maryville is to obtain) a description of their entry permit system and any hazards confronted or created in the permit space through a debriefing or during the entry.

13.2 Whenever outside contractors are invited to our location to perform services which require entry into permit spaces, they will:

- a) Be informed of the specific hazards associated with the permit space(s) they will enter;
- b) Not be permitted to enter confined spaces if they are unfamiliar with the standard;
- c) Be required to comply with 29 CFR 1910.146 or the governments regulation
- d) Be required to supply their own equipment (i.e. PPE, testing equipment, ventilation equipment) that may be necessary to perform entry operations into permit spaces.
- e) Pre-entry review of the above information may be documented on the Hazardous Work or Confined Space Permit form.
- f) A debriefing session must take place following contractor's entry into a confined space. This may include keeping a copy of their confined space entry permit.

13.3 Confined Space Permit, Evaluation Form and list of Confined Spaces for Maryville are attached.

13.4 If a Contractor cannot provide a rescue service within their own company, then we expect you to provide a Rescue Certified service to be on-site during confined space entry. The **Northwest Homeland Security Response Team** from this region is available to provide rescue service. It is best to contact them several days in advance so they can provide the proper resources to be on-site during the work. **Contact Number 1-888-904-3914** (City of Maryville Public Safety **does not** have the equipment, nor is certified in Confined Space Rescue).

14.0 HAZARDOUS ENERGY CONTROL LOCKOUT/TAGOUT PROGRAM

14.1 See attached program information.

EQUIPMENT LOAN AGREEMENT

(Use of Equipment at Eveready Facility)

To: _____ (Company Name)
 _____ (Address)

 Date: _____

You have requested us to loan to (company name)(hereinafter "you"), as is and rent free, our _____, Serial No. _____ (the "Equipment"), for use by you in your performance of work at the Eveready Battery Company, Inc. , ("Eveready") facility located at _____ (the "Facility"). You represent that you are familiar with the operation of said Equipment as is to you under the following additional terms and conditions:

1. You will use the Equipment exclusively to perform work ordered by us under Purchase Order/Construction Maintenance Order/Contract No. _____ at the Facility, from _____(time) on _____(date) to _____(time) on _____(date).
2. You have designated _____(contractor employee) to operate the Equipment and will not allow anyone else to operate it. That employee is trained and capable of operating the designated equipment.
3. You have inspected the Equipment and determined that it is in safe operating condition.
4. You certify that the selected employee has reviewed the Job Safety and Health Analysis (JSHA). You agree that it fully describes the safe operating procedures for the Equipment and you further agree that the selected employee will operate the Equipment in compliance with the JSHA.
5. You will maintain the Equipment in good and safe operating condition while it is in your possession.
6. You will, upon request, immediately return the Equipment to Eveready in the same condition as it was in when you received it.
7. You will promptly advise Eveready should any defects arise in the Equipment.
8. You will be liable if the Equipment is lost, destroyed or damaged while it is in your possession.
9. You will be liable for any damage to Eveready property which arises out of or is in any way connected with your use of the Equipment.
10. You will release, indemnify and save harmless Eveready, and its employees and agents, from and against all claims, liabilities, for bodily injury, sickness and/or disease, including death resulting from such bodily injury, sickness and/or disease sustained by any person (including but not limited to employees of yours) where such injury, sickness, disease and/or death arose out of or was in any way connected with your use of the Equipment.
11. You have provided and will continue to provide all records requested by EBC.

In no event shall Eveready be liable for any special, incidental or consequential damages. IN NO EVENT SHALL ANY WARRANTIES INCLUDING THE WARRANTIES OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE, BE IMPLIED.

If you agree to the foregoing, please indicate your acceptance thereof by signing below.

EVEREADY BATTERY COMPANY, INC.

Agreed and accepted this _____
Day of _____, 20_____

By: _____
Title: _____

(company name)
By: _____
Title: _____

(REV 7/06)

15.0 WORK PROCEDURES TO CUT ANODE TUBE FOR DISPOSAL

Work Procedures	<u>Plant Codes</u> M	<u>Product Type</u>	<u>Internal Cycle Time</u> 0:00 min
	<u>Equipment/Category</u> AA Raw Cell		<u>External Cycle Time</u> 0:00 min
Cut Anode Tube into Shorter Sections for Disposal			

NOTES: Purpose of this procedure is to reduce the length of the anode tube, allowing for a more thorough cleaning of anode from the inside of the tube

Process Steps:

1. Take white barrel to the AA Raw Cell line

2. Cut the tube on the assembly machine side and cap
3. Pull tubing out and coil tube into the barrel
4. Take the barrel with the coiled tube into the Wash Pit in the Anode Room
5. Pull the coiled tube out of the barrel cutting it into 3 foot sections. Place the sections in the Wash Pit
6. After the entire tube is cut into sections, wash the tube out into the bucket to reclaim any anode from the inside of the tube
7. Wash the tube out again into the Wash Pit
8. Throw tube into the dumpster located in the new Anode Room side
9. Weigh the anode washed into the bucket
10. Dump the anode from the bucket in the Anode Waste Barrel
11. Weigh the bucket. Record the difference between the weight of the bucket with the Anode and the weight of the bucket without the Anode.
12. Clean the bucket, the white barrel and the Wash Pit
13. Task complete

Edition	Original	Rev a	Rev b	Rev c	Rev d	Rev e
Date	1/11/08					
Author	C Mallot					

E12508
Course Code

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CONCLUSION

At Eveready, safety is a critical and essential part of every job. As a contractor engaged to do business at our facility, Eveready expects that proper safety practices will be employed at all times. Any action, procedure, or occurrence which has the potential of exposing anyone on the premises to risk should be immediately corrected. While performing your duties, any unanticipated risks that become apparent should be reported immediately to the designated Eveready Battery Company representative so that immediate corrective action can be taken. Any variance from Eveready's rules and requirements must be secured in writing from the Facility Manager prior to when an exception occurs.