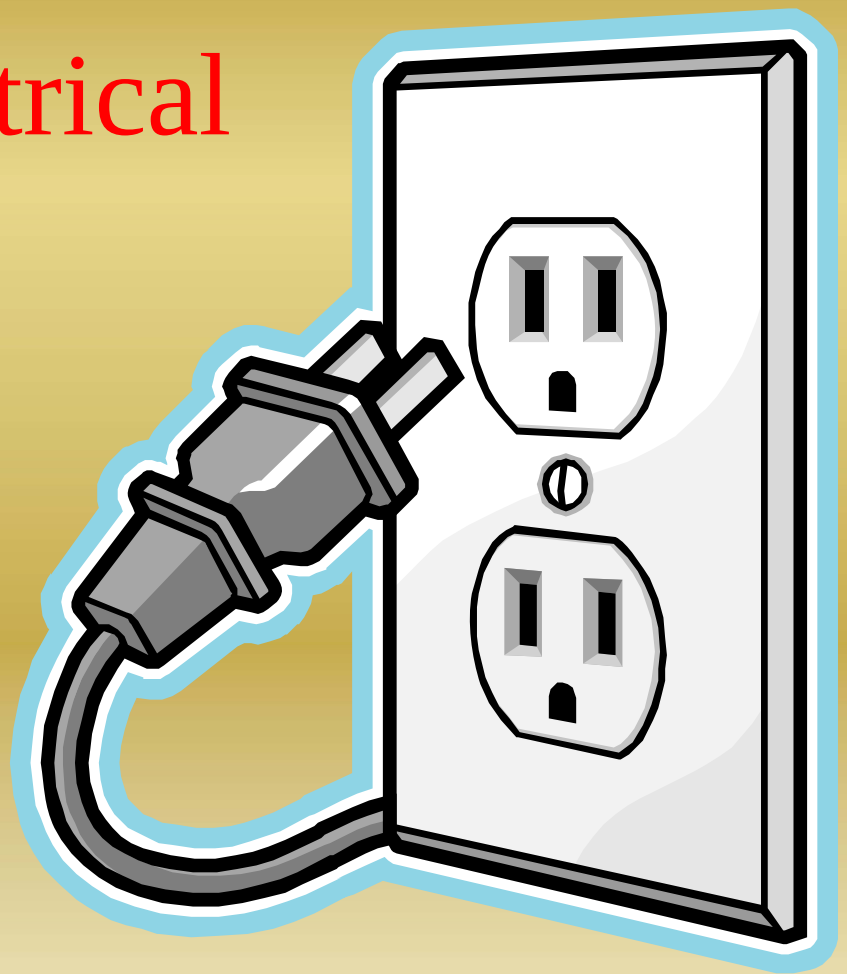
2008 EM 385-1-1 SIGNIFICANT CHANGES to SECTION 11 Electrical



Section 11

- 11.A.01 “Qualified Person, Electrical” – Q
  - c. Electrical work shall be performed by Qualified Personnel with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and/or Local Licenses or Certifications that a Master or Journeyman Electrician may hold, depending on work being performed, and should be identified in the appropriate AHA.
    - (1) USACE and/or other government electricians having attained Journeyman Level qualification via completion of USACE/Government -sponsored electrical training programs are considered to be in compliance with this requirement.
    - (2) For all work, Journeyman/Apprentice ratio shall be in accordance with State, Local and Host Nation requirements applicable to where work is being performed.

Section 11 (cont'd)

- 11.A.02.c. Energized work may never be performed without prior authorization. If determined that equipment must be worked in energized condition, energized work permit shall be submitted to GDA for acceptance. > ***See NFPA 70E.*** Permits must be prepared in advance and include, as a minimum: … (1) - (8)
- 11.A.05 QP responsible for determining number of workers required to perform the job safely and shall identify work hazards and controls in corresponding AHA. Work must be performed with a sufficient number of workers to provide a safe working environment.

Section 11 (cont'd)

- 11.A.12 AHA and written work procedures must be prepared for unusual or complicated work activities or any activity identified by the Qualified Person.
- 11.B ARC FLASH – NEW subsection as opposed to being few requirements lost in Section 11: B.01 – 08 requires analysis to determine approach distance, risk category & PPE requirements; PPE; AF-rated clothing; signage, labeling;

Section 11 (cont'd)

- 11.B (old) becomes 11.C – different subsection paragraph numbers
- 11.C.02.c: Disconnects; per new OSHA electrical standard, requires "Disconnecting means to be capable of accepting a lock and of being locked in the open position."
- 11.D.05.d Added Exception: In industrial facilities only; AEGCP may be used when outlets GFCI can't/shouldn't be.

Section 11 (cont'd)

- 11.D.05.g: GFCI's may be sensitive to some equipment (concrete vibrators, etc) or unavailable for the voltage and current rating. Then AEGCP…
- 11.E.04 (old 11.D.04.) Wet locations: added new "a". USACE personnel and contractors are prohibited from placing electric sump pumps into USACE project bodies of water (lakes, etc.) to support periodic maintenance and/or construction activities. These pumps are not designed to be submersed in locations where people could be present in the water (i.e., recreating, swimming, wading, etc.) and doing so can create an electrical hazard that could result in serious injury or electrocution.

Section 11 (cont'd)

- 11.F Operations Adjacent to Overhead Lines: Table 11-1, Minimum Clearances; changed a little using standard measurements (instead of 9.8 ft, it's now 10 ft). Voltage classifications changed a little.
- 11.G .03 Battery storage and handling - 3 new additions:
- d. Use only insulated tools in the battery area to prevent accidental shorting across battery connections;
- e. PPE shall be used as prescribed in 11.G.06 and Section 5.
- f. For lead acid batteries, bicarbonate of soda to neutralize any acid spillage (1 lb/gal (0.1 kg/L)of water) shall be provided for flushing and neutralizing spilled electrolyte and for fire protection.

Section 11 (cont'd)

- 11.G.05 Exit from battery area shall remain unobstructed.

- 11.G.06 PPE. The following shall be available and used for the safe handling of the battery and protection of personnel
  - a. Safety glasses with side shields and faceshields or goggles;
  - b. Acid-resistant rubber gloves;
  - c. Protective rubber aprons and safety shoes;
  - d. Lifting devices of adequate capacity, when required.

Section 11 (cont'd)

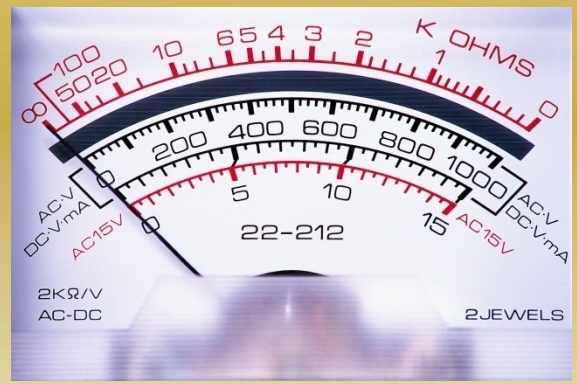
- Table 11-2: revised to correspond with changes in OSHA electrical standard on hazardous classifications vs. zones.
- Table 11-3: revised to reflect current NESC table;

- 11.I.07.a De-energized conductors and equipment that are to be grounded shall be tested or visually checked by meters or indicators.
- b. Requirements as detailed in NEC and NESC for placing and removing protective grounds shall be followed.

Section 11 (cont'd)

- Appendix D: Assured Equipment Grounding Conductor Program (AEGCP)
  - Added requirements to make AEGCP available to GDA, identified components; who shall enforce; further testing and recordkeeping requirements (parallel OSHA Standard and for clarity)

QUESTIONS?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2008 EM 385-1-1 SIGNIFICANT CHANGES to SECTION 12 Control of Hazardous Energy

Section 12

- 12.A.01 This Section shall apply to contractor-managed Hazardous Energy Control Programs (HECP) only, as well as all requirements of 1910.147, ANSI Z244.1, and ANSI A10.44. When a site is controlled by a contractor and USACE employees are affected by contractor-managed HECP (e.g., QA's on construction sites, etc.), they shall comply with the contractor's HECP.

- 12.A.02 USACE-owned/operated facilities that involved hazardous energy shall comply with ER 385-1-31, the applicable regional HECP and any local supplements.

Section 12 (cont'd)

- 12.A.04 _Systems with energy isolating devices that are capable of being locked out shall be locked out.
- 12.A.07.
  - a. Employees shall be trained and tested prior to working on Corps' Facilities where the Corps' HECP is in use to ensure that they are knowledgeable of the procedures. Contractors shall ensure that all of their employees and sub-contractors are knowledgeable of their HECPs.

Section 12 (cont'd)

- 12.A.11 Locks and Tags
  - b. Locks must always be used when the clearance involves equipment that is accessible by the public.
- 12.C.01 Periodic Inspections
  - No more daily inspections documentation; just periodic inspection documentation
- 12.E.05 Personal Protective Grounds.
  - a. Protective grounds shall be identified and accounted for in some manner, as identified in the Contractor's HECP and procedures.

QUESTIONS?

SECTION 13

Hand and Power tools


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13. H POWER-DRIVEN NAILERS AND STAPLERS

- 13.H.01 This section applies to hand-held electric, combustion or pneumatically driven nailers, staplers, and other similar equipment (heretofore referred to as “nailers” in this section) which operate by ejecting a fastener into the material to be fastened when a trigger, lever, or other manual device is actuated. This does not apply to common spring-loaded “staple guns”.

13. H POWER-DRIVEN NAILERS AND STAPLERS

- 13.H.02 Nailers shall have a safety device on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface. The contact trip device or trigger shall not be secured in an “on” position.

13. H POWER-DRIVEN NAILERS AND STAPLERS

- 13.H.03 Nailers shall be operated in a way to minimize the danger to others and the operator from ricochets, air-firing, and firing through materials being fastened.

13. H POWER-DRIVEN NAILERS AND STAPLERS

- a. Except when used for attaching sheet goods (sheathing, sub-flooring, plywood, etc.) or roofing products, nailers shall be operated with a sequential trigger system that requires the surface contact trip device to be depressed before the firing trigger can be activated and that limits ejection to one nail per trigger pull before resetting.

13. H POWER-DRIVEN NAILERS AND STAPLERS

- b. When used for sheet goods and roofing materials, nailers may be operated in the contact trip mode (bump or bounce-nailing) only as allowed by the manufacturer. This mode may only be used when the operator has secure footing, such as on a work platform, floor or deck, and shall not be used when the operator is on a ladder, beam, or similar situations where the operator's balance and/ or reach may be unstable.

US Army Corps of Engineers ®

SECTION 14

- Clarifies when Material Movement Over Personnel is Allowed

- References Section 6 for Requirements of Storing of Hazardous Materials

EM 385-1-1
Section 15 Rigging

BACKGROUND

- Started process in 2006
- Team consisted of USACE, Navy, Trade Groups (AGC), and members of ASME Committee

PRIMARY GOALS

- Place all Rigging related requirements in Section 15
- Review and Incorporate ASME B30.26 series requirements, as applicable.
- Review and incorporate OSHA standards, as applicable (1910, 1926 primarily)
- Improve flow and sequence of 15

Section 15.A General

- 15.A General.
- 15.A.01 – Inspection and Use.
  - Deleted 15.A.08. “The practice of multiple-lift rigging (Christmas tree lifting) is prohibited.”
  - Created 15.C, titled…Multiple Lift Rigging

Section 15.B Training

- No changes to the Training Requirements identified in this section.
  - Roles and Responsibilities
  - Site Preparation
  - Outrigger Deployment
  - Safe Operating Procedures
  - Environmental Hazards
- All as per the 2003 version of the manual.

Section 15.C Multiple Lift Rigging

- 15.C.01 – The components of the multiple lift rigging shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point. This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specification with a 5:1 safety factor for all components.

Section 15.C Multiple Lift Rigging – cont'd.

- 15.C.02. All employees engaged in the multiple lift shall be trained in these procedures. As part of the critical lift plan, qualified operator and rigger certification is required.
- 15.C.03. Multiple lift rigging, when prohibited by the crane manufacturer, shall not be permitted.
- 15.C.04. A multiple lift is considered a critical lift and requires a critical lift plan.

Section 15.C Multiple Lift Rigging – cont'd.

- 15.C.05. Multiple lifts shall only be performed if the following criteria is met:
  - Multiple lift rigging assemblies are used,
  - A maximum of five members are hoisted per lift,
  - Only beams and similar structural members are lifted,
  - The total load is not exceeded,
  - The multiple lift rigging assembly shall be rigged members attached at their center of gravity and maintained reasonably level.

Section 15.C Multiple Lift Rigging – cont'd.

- 15.C.05. Multiple lifts shall only be performed if the following criteria is met- continued…
  - Rigged from the top down and rigged at least 7-feet apart (2.1m)

Section 15.D Wire Rope

- 15.D Wire Rope. No changes to this section. The pictures have been improved for your viewing pleasure (we hope)…

Section 15.E, F, & G

- 15.E Chain. For all questions related to chains, see Dave Stanton! Otherwise..no changes here.
- 15.F Fiber Rope (natural and synthetic). No changes
- 15.G Slings. Moved figure 15-4 into the body of this section.

Section 15.H, Personal Fall Protection Systems

- Equipment must meet ANSI/ASSE Z359.1-2007
  - Existing snaphooks and carabiners meeting ANSI Z359.1-1992 (R1999) may be used for 2 years after date of publication of new EM 385-1-1.
- Full body harnesses meeting ANSI A10.14 shall not be used.

Section 15.H Rigging Hardware

- Table 15-2 Safe Working Loads for Shackles…moved to its proper location within this section.

End of Section 15

QUESTIONS?