Chevron

human energy®

electrical safety awareness

For use by Remote Permitting Contractors at NA Retail and C&I Petroleum facilities

use of this awareness

This document is intended for use as an awareness tool only and is not intended to cover all potential risks, hazards, and conditions. This document is not a substitute for compliance with applicable laws, regulations, or Chevron standards. Each contractor is ultimately responsible for the safety of its employees and its compliance with applicable laws, regulations, and Chevron standards. Changing conditions, such as weather, location, terrain, equipment, processes, etc., may not be addressed here, but must be addressed by each contractor with its employees before work begins

energized electrical work

Training Objectives are to:

- Describe what constitutes Electrical Work and associated “Work On” or “Work Near” Electrical parts
- Describe Work Zones and Boundaries
- Describe Pre-Job Assessment for Energized Electrical work
- List conditions for Work Stoppage
- Outline what is Americas Products standard for electrically safe work condition
- Provide details on where additional information can be obtained.

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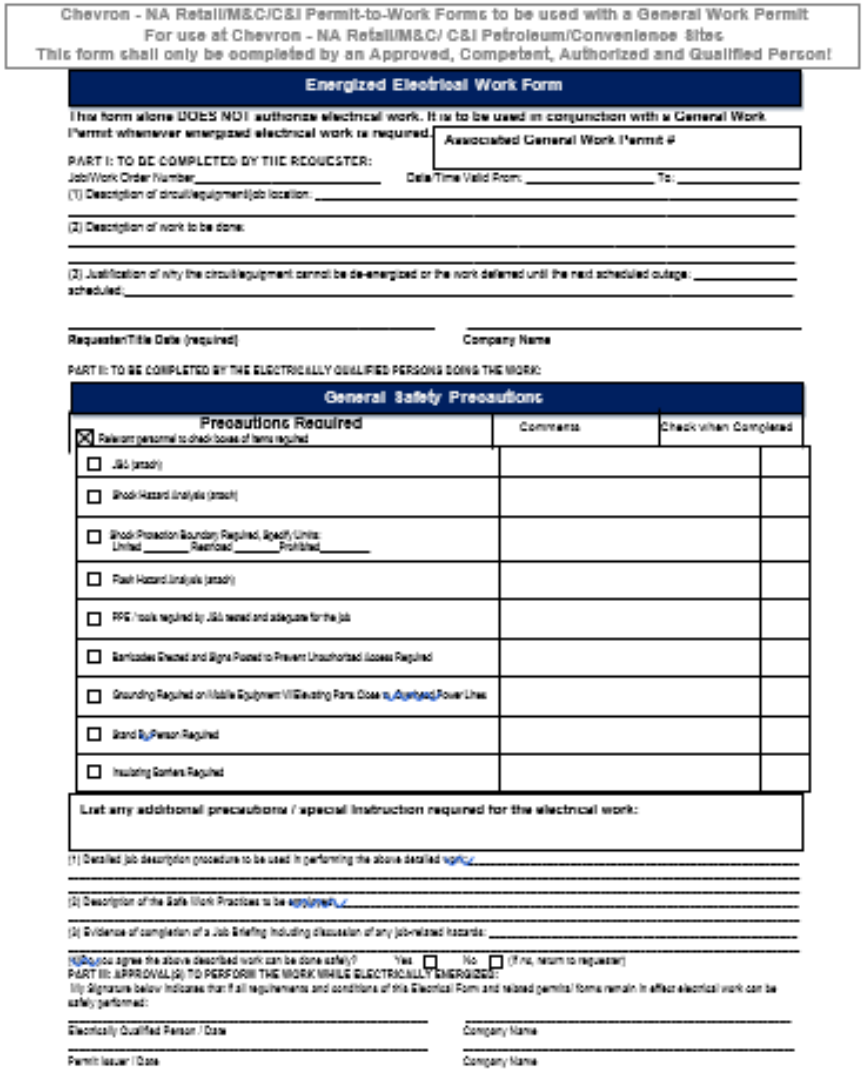
Electrical Work: Any task that involves working “on” or “near” any electrical system or equipment that is operating at a voltage of 50 volts or more and that has “exposed live parts”. This includes “work on” non-electrical equipment that is within 3.2 meters (10 feet) of equipment or lines operating at 50 volts or more and that have ***exposed live parts***

Working on (energized electrical equipment)**:** Performing activities that require contact with ***exposed live parts*** on electrical equipment, circuits or components either through the use of tools or by hand, regardless of whether or not personal protective equipment is being employed. (exemption : Electrical testing/ troubleshooting)

Working near (energized electrical equipment)**:** Performing any type of activity within the Limited Approach Boundary, 3.2 meters (10 feet) of ***energized exposed live parts or equipment***.

energized electrical work worm



Chevron - NA Retail/M&C/C&I Permit-to-Work Forms to be used with a General Work Permit
For use at Chevron - NA Retail/M&C/ C&I Petroleum/Convenience Sites
This form shall only be completed by an Approved, Competent, Authorized and Qualified Person!

Energized Electrical Work Form

This form alone DOES NOT authorize electrical work. It is to be used in conjunction with a General Work Permit whenever energized electrical work is required.

Associated General Work Permit #

PART I: TO BE COMPLETED BY THE REQUESTER:

Job/Work Order Number:_____ Date/Time Valid From: _____ To: _____

(1) Description of circuit/equipment/job location: _____

(2) Description of work to be done: _____

(3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage: _____

Requester/Title Date (required) Company Name

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK:

General Safety Precautions

Precautions Required ☒ Relevant personnel to check boxes of items applied	Comments	Check when Completed
☐ JSA (attach)		
☐ Shock Hazard Analysis (attach)		
☐ Shock Protection Boundary Applied, Approach Limits: Limited _____ Restricted _____ Prohibited _____		
☐ Flash Hazard Analysis (attach)		
☐ PPE / tools required by JSA tested and adequate for the job		
☐ Barricades Erected and Signs Posted to Prevent Unauthorized Access Required		
☐ Grounding Required on Mobile Equipment / Elevating Parts Close to Overhead Power Lines		
☐ Stand By Person Required		
☐ Insulating Barriers Required		

List any additional precautions / special instruction required for the electrical work:

(1) Detailed job description procedure to be used in performing the above detailed work: _____

(2) Description of the Safe Work Practices to be employed: _____

(3) Evidence of completion of a Job Briefing including discussion of any job-related hazards: _____

Do you agree the above described work can be done safely? Yes ☐ No ☐ (If no, return to requester)

PART III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

My Signature below indicates that if all requirements and conditions of this Electrical Form and related permits/ forms remain in effect electrical work can be safely performed:

Electrically Qualified Person / Date Company Name

Permit Issuer / Date Company Name

Version April, 2017 This form must be accompanied by a valid General Work Permit Page 1

- Any work performed inside the restricted approach boundary is considered high risk and the work must be managed with an Energized Electrical Work Form in addition to the General Work Permit. This does not include testing/troubleshooting.
- All permit to work requirements need to be met as well as the requirements in the Energized Electrical Work Form.
- The Manger for M&C must approve (in writing) any live electrical work. Contact your project manger to request.

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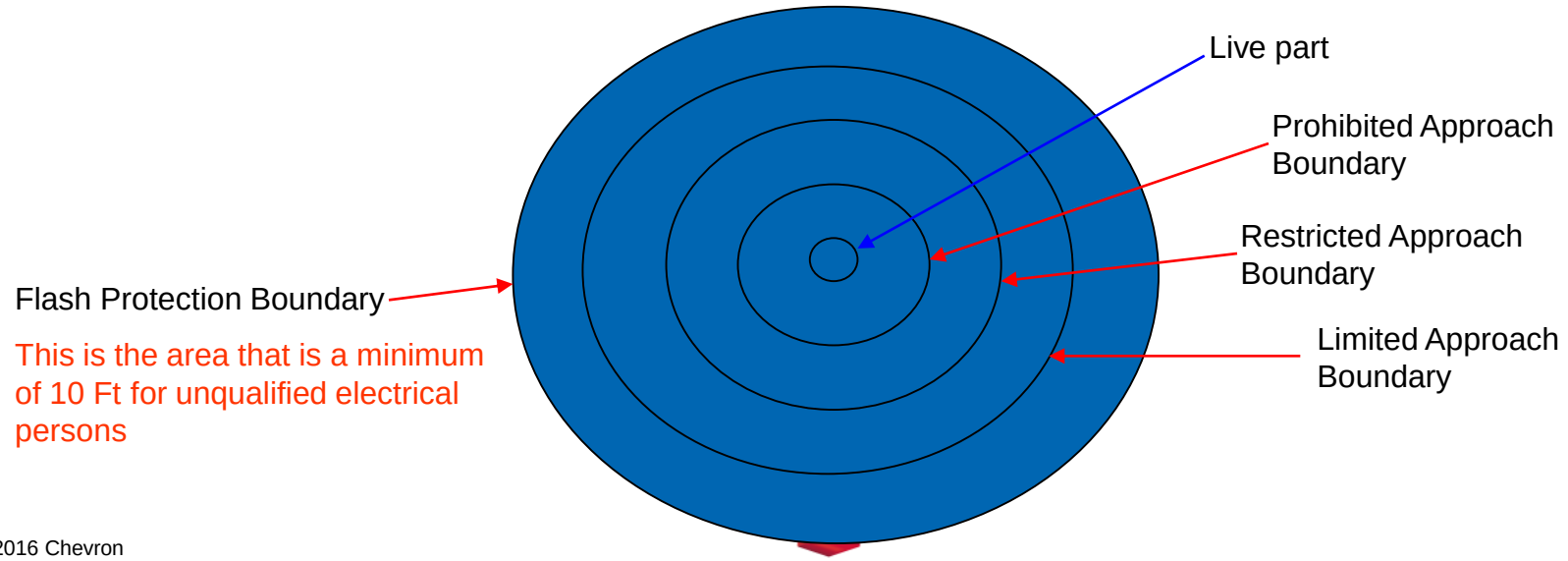
Work Zones & Boundaries

- The space to safeguard personnel. An area temporarily marked off with rope, tape or other barricading devices into which entry is prohibited for all persons except those authorized by the Person in Charge of the work zone.
- A work zone is established by the *Qualified Electrical Person*

Energized Electrical work

- Qualified Electrical Person to establish:
  - Flash Protection Boundary
  - Limited Approach Boundary
  - Restricted Approach Boundary
- Personal Protective Equipment identified by JSA/JLA based on the Shock and Hazard Analysis and voltage of equipment to be used.



Energized Electrical Work

Ten Foot Rule

- Any person that is **NOT** electrically **Qualified** or **Authorized** must maintain a minimum distance of **10 ft** from any exposed live part.
- As the distance between a person and the exposed live part decreases, the potential for an electrical accident increases.
- Closer distance also requires higher levels of training and PPE. Only Qualified Electrical Persons can work at or closer than the restricted approach boundary

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Pre- Job Risk Assessment

- The Energized Electrical Work must be evaluated by a Qualified Electrical Person or the Permit Issuer with assistance of a Qualified Electrical Person .

- The Energized Electrical Work Form is designed to identify the hazards involved, and determine the controls necessary to work safely, including identifying the PPE requirements.

- Energized Work needs to be planned because of the amount of information needed on the Form and the JSA.

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Conditions for Work Stoppage

- Stand By Person, when required, leaves post without a qualified replacement
- Change in scope of work, such as additional work not originally anticipated
- Unsafe conditions are found that were previously not known
- Serious safety concern raised by worker/Company representative
- Facility emergency alarms activated

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Downstream & Chemicals Rule

- The inherently safer, preferred practice at all Chevron owned and operated facilities is to place electrical equipment or systems (conductors and/or exposed parts) of 50 volts or more into an electrically safe work condition first:
  - De-energize / isolate
  - Lock & Tag
  - Test / Tried
  - Ground conductors when applicable

Note: Always consider electrical equipment *energized* if not put in an *"electrically safe work condition"*

energized electrical work

- **Electrical isolation:** Electrical Isolation can only be carried out by a competent and qualified electrician, except for the following two exceptions which may be carried out by appropriately trained personnel:

1. Electrical isolation on circuits operated at extra low voltages (extra low voltage: any voltage normally **not exceeding 50 volts A.C. or 120 volts D.C**.).
2. Tripping of circuit breakers on extra low or low voltage circuits (low voltage: any voltage **exceeding 50 volts A.C. or 120 volts D.C. but not exceeding 1000 volts A.C. or 1500 volts D.C**.).

Note: *Authorized Electrical Persons* can conduct isolation under these exceptions. However the testing step of isolation on systems/equipment above 50 volts with exposed parts (potentially energized) need be conducted by a *Qualified Person.*

Additional Information

- For additional details on Energized Electrical Work requirements refer to:
- Your local/regional operating procedures
- Safe Work Practice Standard for AP Energized Electrical Work **12.3.2.45**
- Your local OE/HES Specialist
- Your Regional Safety Specialist
- OSHA/Worsafe BC