Authored By: Mike Zupon	**Blanchard Refining Company LLC** **Galveston Bay Refinery**	Doc No.: RSW-000064-GB Rev No: 0
Doc Custodian: Safety Supervisor	**EL-5 Assured Equipment Grounding Conductor Program**	Refinery Safe Work Procedure
Approved By: E. R. Kaysen		
Date Approved: 11/17/2020	Next Review Date: 12/31/2025	Effective Date: 12/7/2020

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1.0 Purpose

The purpose of this document is to establish guidelines for the Written Assured Equipment Grounding Conductor Program at the Galveston Bay Refinery. Requirements for an assured equipment grounding program can be found in ***Article 590.6(B)(2)*** of the 2011 edition of the National Electrical Code (**NFPA 70**) and OSHA 29 CFR ***1910.304***.

2.0 Scope

The Scope of this document applies to the following covered cords and equipment (1910.304(b)(3)(ii)(C)):

2.1 480V cord sets and portable cord and plug connected equipment, owned, rented or lease by MPC; and

2.2 Any other cord sets and portable cord and plug connected equipment greater than 125-volt, single phase, 15-, 20-, or 30-ampere that are not protected by a Ground Fault Circuit Interrupter (GFCI), owned, rented or leased by MPC.

3.0 Procedure

3.1 Safety Procedures

3.1.1 Inspections and tests shall be performed in accordance with all applicable MPC Corporate safety procedures and the following standards as a minimum:

3.1.1.1 Occupational Safety and Health Act (OSHA)

3.1.1.2 National Fire Protection Association (NFPA) – NFPA 70E

3.1.1.3 National Electric Code (NEC)

3.1.1.4 Manufacturers' Instructions and Recommendations, and

3.1.1.5 MPC Site Specific Safety Rules

3.2 Roles & Responsibilities

3.2.1 The MPC Electrical Infrastructure Group (EIG) Foreman or his designee and the Bay Plant Instrument & Electrical (I&E) Foreman or his designee shall be responsible for the implementation and execution of the Assured Equipment Grounding Conductor Program (AEGCP) in the East/West Plant and Bay Plant, respectively.

3.2.2 Only qualified personnel who have been trained will be permitted to perform the inspection & testing of assets along with issuance of covered cord sets and equipment.

3.2.3 A current list of the personnel trained to perform duties of the Assured Equipment Grounding Conductor Program will be kept by the MPC Electrical Infrastructure Group (EIG) Foreman and Electrical (I&E) Foreman in the East/West Plant and Bay Plant, respectively.

3.3 Identification, Tracking and Issuance of Electrical Equipment Included in the Assured Grounding Program

3.3.1 All cord sets and equipment included in the assured equipment grounding conductor program shall be identified with a unique Equipment ID number, which is clearly legible on the cord set or equipment.

3.3.1.1 The Tag shall be made of a non-conductive material and secured to the outside of the cable with cable ties. The tag shall be affixed on the cabling in a way that will not damage or compromise the cables outer jacket or insulation.

3.3.1.2 The Identifier for Galveston Bay Refining will be GBR-#######.

3.3.1.3 Date of next inspection

3.3.2 All cord sets and equipment included in the Assured Equipment Grounding Conductor Program will be entered in the Mobil Asset Tracking Database. The following information must be included:

3.3.2.1 Equipment ID Number

3.3.2.2 Equipment Description

3.3.2.3 Location of cord set or equipment

3.3.2.4 Company using cord set or equipment

3.3.2.5 Due date of cord set or equipment for next required test

3.3.3 Upon issuance of cord sets or equipment, the following will be recorded in the Mobil Asset Tracking Database: An Issue ticket will be recorded as well on cabling or equipment that has been issued.

3.3.3.1 Equipment ID Number

3.3.3.2 Name of MPC or Contractor employee checking out the equipment/cord sets

3.3.3.3 MPC or Contractor name

3.3.3.4 Supervisors Name

3.3.3.5 Location where the cord set or equipment is expected to be put in service (e.g., process unit, shop, fab area, etc.)

3.3.3.6 Date of issuance

3.3.3.7 Work Order Number for job equipment is to be used for.

3.3.3.8 Legible signature of MPC or Contractor Employee. (By signing for the cord set or equipment, the MPC or Contract Employee acknowledges that they understand their responsibility to ensure the equipment is returned when the job is completed or prior to the due date listed on the cord tag.)

3.4 Storage of Electrical Equipment Included in the Assured Grounding Program

3.4.1 All cord sets or equipment, when not in use, will be stored in the appropriate lock up bays located at the Assured Grounding Workshop at East/West Plant and breezeway job boxes at Bay Plant.

3.4.1.1 The Assured Grounding Workshop is located on the North end of the CMB next to the HEO Rigging Loft.

3.4.1.2 The breezeway job boxes are located between the I&E Shop and Machine Shop at Bay Plant.

3.4.2 Assets stored in the “Available for issue” bay must have been inspected and tested within the last 3 months and tagged appropriately.

3.4.3 Assets stored in the “Not Available for Issue” bay will not be available for issue until they have been inspected, tested and tagged by a qualified AEGCP Technician.

3.4.4 Access to the stored Assured Equipment Grounding Conductor Program Assets is limited only to qualified MPC I&E personnel and Maintenance Supervision.

3.4.5 All check out and return of cord sets and equipment will occur at the Assured Grounding Workshop at East/West Plant and breezeway job boxes at Bay Plant.

3.4.6 During normal business hours when the Assured Grounding Workshop at East/West

Plant is staffed, those that require temporary power assets must be escorted into the Assured Equipment Grounding Storage bays by qualified personnel on duty.

3.4.7 During off shift times the off shift and weekend coverage foreman will manage access into the Assured Equipment Grounding Storage bays at East/West Plant for issuance or check in of assets.

3.4.8 Cord sets and equipment that are part of the Assured Equipment Grounding Conductor Program will be stored at the Assured Grounding Workshop at East/West Plant and breezeway job boxes at Bay Plant unless otherwise noted in the Mobil Asset database per 3.3.2.

3.5 Inspection and Testing Requirements for Electrical Equipment Included in the Assured Grounding Program

3.5.1 All required tests shall be performed when the following occurs:

3.5.1.1 Before first use on site.

3.5.1.2 When there is evidence of damage.

3.5.1.3 Before equipment is returned to service following any repairs.

3.5.1.4 At intervals not exceeding 3 months, or

3.5.1.5 If the cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

3.5.1.6 Covered equipment that is “Not available for immediate use” and stored in the “Not available for immediate use” secured bay is not required to be inspected/tested every three months. If the covered equipment residing in the “Not available for immediate use” storage needs to be used, Inspection/testing shall be conducted prior to issuance by trained qualified personnel.

3.5.2 The following inspection and tests shall be performed by a "qualified person" on all cord sets and equipment included in the assured equipment grounding conductor program.

3.5.2.1 A visual inspection of the cord or equipment shall be made with emphasis on condition of cord insulation, the condition of the cord and the prongs on the male attachment plug.

3.5.2.2 Any break, cut or crack which extends through the outer insulation jacket shall render the cord unfit for use and it shall be discarded or repaired before being placed in service. Wrapping with tape is not considered adequate to repair such defective cords.

3.5.2.3 Damaged or defective attachment plugs shall be replaced before performing any test for continuity of the grounding conductor.

3.5.2.4 All equipment grounding conductors shall be tested for continuity and shall be electrically continuous. This test shall be performed with an Ohmmeter, and resistance checked between cord ends or cord end and equipment. The maximum resistance shall be determined by the size and length of wire or cable. For standard 60 amp or 100 amp cords sets 100 feet or less, the resistance shall be 2 ohms or less.

3.5.2.5 With the continuity tester attached, the cord shall be flexed near the points of entry into the attachment plug and/or receptacle, into the case or frame of the tool or equipment at the point of attachment, and at any other point of suspected damage while the continuity test is being observed for any intermittent operation.

3.5.2.6 Resistance shall be checked between all terminals with a 500 volt Megohmmeter and the minimum resistance shall be 100 meg-ohms between any two terminals.

3.6 Return of Electrical Equipment Included in the Assured Grounding Program

3.6.1 All returned cord sets and equipment will occur at the Assured Grounding Workshop at East/West Plant and breezeway job boxes at Bay Plant.

3.6.2 The Mobil Asset Tracking Database will be updated to reflect the return of the equipment and the return personnel will receive a copy of the updated ticket to reflect return date.

3.6.3 Returned equipment cannot be re-issued until it has been inspected, tested and re-tagged. Any damage that is affecting or could affect the equipment's integrity must be repaired before the equipment is stored in the "Available for issue" bay.

3.7 Document Retention

3.7.1 The issue tickets and Inspection and Testing logs shall be maintained for a period of five years before being discarded.

3.7.2 The tracking database will be backed up on an IT Server and will be continually updated to reflect the status of the equipment in the assured equipment grounding conductor program.

4.0 Definitions

None

5.0 References

5.1 RSP-1162 MPC Electrical Safe Work Practices

5.2 NFPA 70 National Fire Protection Association National Electrical Code

5.3 NFPA 70E Standard for Electrical Safety in the Workplace

5.4 OSHA 29 CFR 1910.304 Wiring Design and Protection

6.0 Attachments

None

7.0 Revision History

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
0	Original Issue. Consolidated site procedure replacing GBR-HESS-ME-05 and RMP-1160-P0044-TC under MOC 83575.	M. L. Zupon	E. R. Kaysen	11/18/2020	12/7/2020