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| Environmental Standard Operating Procedure | | | |
| Originating Office: MCAS Miramar Environmental Management Department | Revision: Original | Prepared By: Environmental Management Department | Approved By: William Moog |
| File Name: CPR-ESOP | Effective Date: 06 Aug 07 | Document Owner: EMD | |

Title: Capacitor Replacement

1.0 PURPOSE

The purpose of this Environmental Standard Operating Procedure (ESOP) is to provide environmental guidelines for performing capacitor replacement activities.

2.0 APPLICATION

This guidance applies to those individuals who perform capacitor replacement activities onboard Marine Corps Air Station (MCAS) Miramar.

3.0 REFERENCES

- 29 CFR (Code of Federal Regulations)
- 22 CCR 66265 (California Code of Regulations)
- MCO P4790.2C (Marine Corps Order)
- MCO P5090.2A (USMC Environmental Compliance and Protection Manual)
- MCO P5100.8F
- NAVMC 5100.8 (Navy-Marine Corps Directive)
- OHSS/SPCC

4.0 PROCEDURE

4.1 Discussion:

Daily operations onboard MCAS Miramar require the routine replacement of capacitors within the electronic assembly of aircraft control, communication, weather, radar and navigation equipment. Capacitors contain lead and other potentially hazardous materials that must be managed properly to avoid impacts to human health and the environment. During the repair process special care should be taken to protect the hands and eyes as capacitor fluid is acidic.

All hazardous materials must be stored in appropriate, approved containers. Units are equipped with approved containers as necessary. Units should contact the Environmental Management Department (EMD) for replacement of or to request additional containers.

4.2 Operational Controls:

The following procedures apply:

1. Ensure that Material Safety Data Sheets (MSDS) for all materials associated with this practice are available and current.
2. Ensure required training records and certifications are current and available for inspection for all unit personnel.
3. Maintain turnover folder information for this practice.
4. Wear appropriate protective personal equipment (PPE) such as eye protection, face shields, and gloves as needed.
5. Maintain fire extinguishers nearby in designated locations known to all personnel.
6. Use a localized ventilation system to draw any lead fumes away from breathing zone.
7. Conduct periodic maintenance on equipment as recommended by manufacturer, and document all aircraft control equipment parts replacement activities.
8. Document weekly inspections of storage areas.
9. Store all usable hazardous materials (lead, flux, isopropyl alcohol cleaner) in the hazardous materials (HAZMAT) locker.
10. Collect and store all hazardous waste in approved containers authorized for the use intended. Use only containers equipped with lids. Check containers for deterioration and structural integrity.
11. Properly label all containers completely and legibly, identifying the contents of the container.
12. Ensure that warning signs (e.g., Lead Hazard) are clearly visible and legible from a distance of 25 feet in any direction.
13. If there are any specific situations or other concerns not addressed by this procedure, contact the EMD.

4.3 Documentation and Record Keeping:

The following records must be maintained:

1. MSDSs for all materials associated with this practice.
2. Training records.
3. Hazardous materials inventory (must match Authorized Usage List).
4. Scheduled maintenance log book (electronic format).

4.4 Training:

All personnel must be trained in this ESOP, to include the following, as applicable:

1. Hazard Communication (HazCom) Training.
2. Miniature Electronic Component Repair certification.
3. Planned Maintenance training (on line).
4. On-the-job training.

4.5 Emergency Preparedness and Response Procedures:

Refer to Marine Corps Order (MCO) P5090.2A, Subject: Oil/Hazardous Substance Spills (OHSS) and Spill Prevention Containment and Countermeasures (SPCC) for MCAS Miramar.

4.6 Inspection and Corrective Action:

The Environmental Compliance Coordinator (ECC) shall perform or designate personnel to perform inspections. The ECC shall ensure deficiencies noted during the inspections are corrected immediately. Actions taken to correct each deficiency shall be recorded on the inspection sheet.

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| Capacitor Replacement – Inspection Checklist | |
| Date: | Time: |
| Installation: | Work Center: |
| Inspector’s Name: | Signature: |

| Inspection Items | Yes | No | Comments |
|---|-----|----|----------|
| 1. Are MSDSs for all materials associated with this practice current and available? <i>(29 CFR 1910, MCO P5100.8F)</i> | | | |
| 2. Are required current training records and certifications maintained for all personnel? <i>(MCO P5090.2A)</i> | | | |
| 3. Is turnover folder information maintained for this practice? <i>(MCO P4790.2C)</i> | | | |
| 4. Are required current training records and certifications | | | |

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| maintained for all personnel? <i>(MCO P5090.2A)</i> | | | |
| 5. Is appropriate PPE worn as needed? <i>(29 CFR 1910, MCO P5100.8F)</i> | | | |
| 6. Are fire extinguishers maintained nearby in designated locations known to all shop personnel? <i>(29 CFR 1910, MCO P5100.8F)</i> | | | |
| 8. Is a localized ventilation system used to draw any lead fumes away from the breathing zone? <i>(29 CFR 1910, MCO P5090.2A)</i> | | | |
| 9. Is periodic maintenance conducted on equipment as recommended by manufacturer and all aircraft parts replacement activities documented? <i>(MCO P5090.2A)</i> | | | |
| 10. Are weekly inspections of storage areas documented? <i>(29 CFR 1910, MCO P5090.2A)</i> | | | |
| 11. Are all usable hazardous materials stored in the HAZMAT locker? <i>(29 CFR 1910, MCO P5090.2A)</i> | | | |
| 12. Is all hazardous waste collected and stored in approved containers, equipped with lids and authorized for the use intended? Are containers checked for deterioration and structural integrity? <i>(40 CFR 262, MCO P5090.2A)</i> | | | |
| 13. Are all containers properly labeled completely and legibly, identifying the contents of the container? <i>(40 CFR 262, MCO P5090.2A)</i> | | | |
| 14. Are warning signs (e.g., Lead Hazard) clearly visible and legible from a distance of 25 feet in any direction? <i>(22 CCR 265, MCO P5090.2A)</i> | | | |

ADDITIONAL COMMENTS:

CORRECTIVE ACTION TAKEN:

Environmental Compliance Coordinator

Name: _____

Signature: _____

Date: _____