



**Internal Operating Procedure**  
ISO 9001:2015 SOC NEVADA LLC

DOCUMENT No.  
BOP.IOP.EMB.1303

REV. 9

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TITLE:

**ELECTRONICS TECHNICIAN MERCURY STORAGE**

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APPROVAL SIGNATURES		
PREPARED/REVIEWED BY <i>Christina Holloway</i>	CHRISTINA HOLLOWAY, DCA BASE OPERATIONS	DATE 3-12-19
APPROVED BY <i>T.E.</i>	TOM ERICKSON, MANAGER ENVIRONMENTAL SERVICES	DATE 3/4/19
APPROVED BY <i>Dale McNally</i>	DALE MCNALLY, SUPERVISOR EQUIPMENT MAINTENANCE	DATE 3/4/19
APPROVED BY <i>Steve Wilson</i>	STEVE WILSON, LEADER ELECTRIC SHOP	DATE 3/4/19
APPROVED BY <i>Ryan Keuhey</i>	RYAN KEUHEY, MANAGER FACILITIES MAINTENANCE	DATE 3/4/19
APPROVED BY <i>Earnest Wood</i>	EARNEST WOOD, DEPUTY DIRECTOR BASE OPERATIONS	DATE 3/18/19
APPROVED BY <i>Tyler Viani</i>	TYLER VIANI, ASSISTANT MANAGER INFRASTRUCTURE & GROUNDS	DATE 3/4/19
APPROVED BY <i>Theresa Vinson</i>	THERESA VINSON, DIRECTOR BUSINESS MANAGEMENT OFFICE	DATE 3/4/19
<input type="checkbox"/> INITIAL RELEASE <input type="checkbox"/> ANNUAL REVIEW, NO REVISION REQUIRED <input checked="" type="checkbox"/> ANNUAL REVIEW, REVISION REQUIRED (SEE HISTORY BELOW)		

REVISION HISTORY			
REV	CHANGE DESCRIPTION	AUTHOR	DATE
9	ANNUAL REVIEW: UPDATED SIGNATORY AUTHORITY TO REFLECT CURRENT REQUIRED SIGNATURES. CHANGED ELECTRICAL TO ELECTRONIC COMPONENTS IN PURPOSE 1.1	CHRISTINA HOLLOWAY	03/2019
8	ANNUAL REVIEW: UPDATED SIGNATORY AUTHORITY TO REFLECT CURRENT REQUIRED SIGNATURES. CHANGED DOCUMENT TO THE ISO9001:2015 FORMAT	CHRISTINA HOLLOWAY	03/2018
7	ANNUAL REVIEW, UPDATED SIGNATORY AUTHORITY TO REFLECT CURRENT REQUIRED SIGNATURES.	CHRISTINA HOLLOWAY	05/2017

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REFERENCE DOCUMENTS	
DOCUMENT NUMBER	DOCUMENT TITLE
CGA 6.7-1996	COMPRESSED GAS ASSOCIATION- SAFE HANDLING OF LIQUID CARBON DIOXIDE CONTAINERS THAT HAVE LOST PRESSURE
CHEMETRON/ CARDOX- FIRE SYSTEMS MANUALS	FIRE SYSTEM LOW PRESSURE CO <sub>2</sub> OPERATION & MAINTENANCE MANUALS
FES.IOP.FFO.0017	110 HG STORAGE WAREHOUSE WITH CO <sub>2</sub> FIRE SUPPRESSION RESPONSE & MANUAL ACTIVATION OF SYSTEM
ISS.IOP.EMB.1300	REFRIGERATION AND MAINTENANCE PLAN FOR MERCURY STORAGE
NFPA 12	STANDARD ON CARBON DIOXIDE EXTINGUISHING SYSTEMS
NFPA 72	NATIONAL FIRE ALARM CODE
QP.BOP.MUO.0001	LOCKOUT-TAGOUT PROCEDURES
QP.GMO.SAF.0003	SOC NEVADA LLC- SAFETY PROGRAM
SOC.QM.0001	SOC QUALITY MANUAL
SOC.QP.EMP.HG.0002	MERCURY TRAINING PLAN
SOC.MS.MP.0001	SOC Management PLAN – CONTROL OF DOCUMENTS
SOC. MS.MP.0002	SOC Management PLAN – CONTROL OF QUALITY RECORDS
SOC. MS.MP.0003	SOC Management PLAN – INTERNAL QUALITY AUDITS
SOC. MS.MP.0004	SOC Management PLAN – CONTROL OF NON-CONFORMING PRODUCTS
SOC. MS.MP.0005	SOC Management PLAN – CORRECTIVE/PREVENTATIVE ACTION

**DOCUMENTS REFERENCED IN THIS PROCEDURE ARE APPLICABLE TO THE EXTENT SPECIFIED HEREIN.**

### 1. PURPOSE

- 1.1. The purpose of this IOP is to establish mandatory requirements to ensure that all electronics technicians understand and follow the safe and proper procedures involved in checking electronic components for Mercury Storage.

### 2. SCOPE

- 2.1 This IOP applies to all maintenance personnel involved in electronics repair of fourteen Mercury warehouse storage buildings.

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**3. DEFINITIONS AND ACRONYMS**

- 3.1 **BOP**- Base Operations
- 3.2 **EEBD**- Emergency Escape Breathing Device
- 3.3 **IAW**- In accordance with
- 3.4 **GOC**- Guard Operation Center
- 3.5 **IOP**- Internal Operating Procedure

**4. FLOWCHART**

- 4.1 There is no flowchart associated with this procedure.

**5. RESPONSIBILITIES**

- 5.1 It is the responsibility of the electronics technicians to ensure that all alarm components are operating correctly and preventative maintenance as specified by Maximo is completed in a safe manner.
- 5.2 Maintenance personnel will have the work order at the site where work is being performed.
- 5.3 Prior to entering the warehouse, personnel will clean shoes/ boots on the warehouse cleaning mat to protect the Teranap flooring.
- 5.4 Before any maintenance is performed to the CO<sub>2</sub> System, the system must be brought to a zero energy state IAW QP.BOP.MUO.0001 titled Lockout- Tagout Procedures.
- 5.5 Should Maintenance be required on the interior of the warehouse, maintenance personnel will have EEBD attached to themselves and ensure all four (4) warehouse doors are open for emergency egress.

**6. PROCEDURE**

- 6.1 Contact Fire Department to enter building.
- 6.2 Notify GOC prior to entering area 110.
- 6.3 Perform Maximo EK 06\_Hg Job Plan.

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**6. PROCEDURE (CONTINUED)**

- 6.4 EK64 Monthly Job Plan.
- 6.5 EK65 Semi-Annual Job Plan.
- 6.6 EK66 Annual Job Plan.
- 6.7 EK 01 Visual, semi-annual visual grounding test Job Plan.
- 6.8 EK 02 Physical annual physical grounding test Job Plan.
- 6.9 Trouble Shooting Steps IAW Operators Equipment Manual.
- 6.10 Follow QP.BOP.MUO.0001 titled Lockout- Tagout Procedures.
- 6.11 Check voltage, amps, grounding and continuity on troubled area.
- 6.12 Repair affected equipment and/ or grounding.
- 6.13 Remove lock out/ tag out upon completing of work activities.
- 6.14 Notify GOC of that work has been completed.
- 6.15 Part Replacement and Quality Control.
- 6.16 Part replacement will occur as needed or required by operation maintenance procedures.
- 6.17 All parts removal/ replacement shall be performed IAW instructions cited in the vendor operations and maintenance manuals or best engineering practices.
- 6.18 Check shop parts storage for replacement part availability. If the part/ component is available, confirm part model number with review by the shop Supervisor. Once the part has been verified, then proceed with replacement.
- 6.19 If parts/ components are not available from shop supply, the part/ component will be ordered as follows:
  - 1. Replacement parts/ components shall be replacement in kind.
  - 2. If a replacement in kind part/ component in not available, the proposed replacement part/ component shall be subject to review by the Mechanical Integrity Team as described in QP.EMS.HG.0006 titled Mechanical Integrity Procedure to ensure that it is suitable for the process in which it will be used. The process shall be subject to QP.EMS.HG.0007 titled Management of Change, QP.EMS.HG0002 titled Process Safety Information, QP.EMS.HG.0008 titled Pre-Startup Safety Review and, if warranted, QP.EMS.HG.0003

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**6. PROCEDURE (CONTINUED)**

titled Process Hazard Analysis.

3. Check the part model number and compare it with the as-built drawing and the Maximo parts listing.
  4. Order the part/ component; ordering of the part/ component shall be in writing to the Maintenance Section.
  5. During the process of ordering the part/ component, a second check shall be performed against Maximo to endure accuracy of the part/ component.
  6. The Purchase Request will be submitted to Manager of Quality Control for analysis in the Government Industry Data Exchange Program (GIDEP) to ensure vendor acceptability prior to submission of the Purchase Request to the Purchasing Agent.
- 6.20 When the ordered part/ component is received, verify the correct part model number against the part order form. Shop Supervisor will also confirm the correct part model number has been received prior to use and replacement of the defective part/ component.
- 6.21 Any staff member discovering a nonconforming item or material (including suspect/ counterfeit items) notifies their manager to initiate resolution of that nonconformance. The manager notifies the Environmental Services Manager and the Quality Assurance Manager of the nonconformance. The nonconformance resolution process, overseen by the Quality Assurance Manager, provides for the identification, control, and resolution of problems associated with items, activities, or conditions that do not conform to requirements. The process also provides a means for preventing the inadvertent installation or use of nonconforming items, material or services.
- 6.22 Install the part/ component by ensuring all required lock out/ tag out requirements have been completed, or that the system(s) are at a zero energy state.
- 6.23 Install part/ component IAW manufacturer's instructions or recommendations.
- 6.24 After installation the shop Supervisor will verify the part/ component has been installed per manufacturer recommendation or specification. Both the operator and the supervisor shall sign the work order form verifying the correct part/ component was used and installed correctly. The work order form will be returned to the Maintenance, Planning & Housing Supervisor.
- 6.25 After verification that the part/ component has been installed correctly, the lock out/ tag out devices shall be removed and the system energized if required.
- 6.26 Verify replacement part is functional and operational IAW operational manual or best engineering practices.
- 6.27 Emergency Evacuation

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**6. PROCEDURE (CONTINUED)**

1. Pre-inspection of EEBD- Assure that the breathing device gauge is in the green zone, the mouthpiece cover is in place, no visual damage to the case or container is present, and that the EEBD is in good working condition. If these pre-inspection issues are unable to be verified, obtain a new breathing device by contacting the Fire Department to resolve the issue.
2. When the fire alarm system goes into pre-alarm (visual/ audio signal) or a hazardous condition exists, notify occupants by verbal communication to evacuate. Simply grab the EEBD at the regulator and pull the unit from the holster. The Velcro strap and mouthpiece cover will automatically release. Inhale the first breath and breathe normally while exiting the warehouse.

6.28 Emergency Evacuation Doors

1. All doors to the warehouse will be open when maintenance is being performed.
2. The two center doors of the warehouse are for emergency egress only and will not be used for routine operations or forklift use.

**7. METRICS**

7.1 There are no metrics required for this procedure.

**8. QUALITY RECORDS**

8.1 The following Quality Records shall be generated and managed in accordance with SOC.QP.QMS.0002

8.2 The following records will be maintained for CAPP-mandated inspections/ testing/ maintenance activities for a minimum of five years after the inspection/ test/ maintenance activity:

- The date of the inspection or test
- The name of the person who performed the inspection or test
- The serial number or other identifier of the equipment on which the inspection or test was performed.
- A description of the inspection or test performed.
- The results of the inspection or test



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QUALITY RECORDS			
RECORD REQUIRED	CUSTODIAN	RETENTION	DISPOSITION
Work Order (PM)	Maintenance Control & Planning	Life of Contract until further notice	Destroy
	Environmental Services		

## 9. FORMS

9.1 The following forms are applicable to this document.

APPLICABLE FORMS	
FORM NUMBER	TITLE
DZHC 167-E	Work Order (PM)

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### 10. ATTACHMENTS

#### 10.1 DZHC 167-E:Work Order- Preventative Maintenance

SOC WORK ORDER DETAIL									
WORK ORDER #:	100059		PRIORITY:		WORK TYPE:	PM	START DATE:	Jan 15, 2015 12:00 AM	
DESCRIPTION:	Mercury								
LONG DESCRIPTION:									
REPORT DATE:	Dec 15, 2014 10:19 AM			PHONE:		WORK STATUS:	CLOSE		
REPORTED BY:	SPANIERL			ON BEHALF OF:		GL ACCOUNT:	4E6-0715C1-2222-22		
ASSET:	52_MIC_EV	DESCRIPTION:	Micro EV Panel						
LOCATION:	110-052	DESCRIPTION:	MERCURY STORAGE FACILITY						
LOCATION DETAIL:	MERCURY					ASSIGNED TO:			
TAG #:		SUPERVISOR:	ELSUPER			LEAD CRAFT:	EK		
SERIAL #:		WARRANTY EXP:				CREW ID:	EL		
MODEL #:		MFG:							
EMPLOYEE SIGNATURE			SUPERVISOR SIGNATURE			DATE			
LABOR				PARTS / MATERIAL					
EMPL ID	HOURS	OT	DATES	PART #	DESCRIPTION	QTY	UNIT COST		
JOB PLAN:	EK64	DESCRIPTION:	MONTHLY MICRO EV PANEL ON MERCURY BLDGS			FREQ:	1	UNITS:	MONTHS
TASK	DESCRIPTION					POINT	READING	OBSERVATION	
10	CHECK STANDBY BATTERY SYSTEM; ANNOTATE VOLTAGE WITHIN NORMAL RANGE (28 VDC)						28.400		
20	PERFORM BATTERY TEST - PASS OR FAIL; ANNOTATE VOLTAGE ON LOAD						27.200		
30	PERFORM LAMP TEST; ENSURE ALL LED'S AND LAMPS ARE OPERATIONAL.								
40	CHECK DATA ON RELAYS.								
50	MULTIMETER USED - ID #								
DZHC 167-E									

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