SOC	QUALITY PLAN SYSTEM LEVEL PROCEDURE ISO 9001:2008 SOC NEVADA LLC	DOCUMENT NO. QP.EMS.HG.0006
TITLE	MECHANICAL INTEGRITY PROCEDURE FOR THE CO_2 FIRE SUPPRESSION SYSTEM AND THE MERCURY STORAGE AND TRANSFER PROGRAM TO COMPLY WITH THE NDEP CAPP	REV. 8 PAGE 1 OF 13

APPROVAL SIGNATURES		
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REVIEWED & APPROVED BY: BOYNTON.JASON.D.1228903430 Digitally signed by BOYNTON.JASON.D.1228903430 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=DLA, cn=BOYNTON.JASON.D.1228903430 Date: 2015.03.13 10:25:41 -04'00'	JASON BOYNTON, DEFENSE LOGISTICS AGENCY PROGRAM MANAGER	DATE
REVIEWED & APPROVED BY:	GARY AMUNSON, DLA HAWTHORNE SITE SUPERVISOR	DATE 3/11/15
REVIEWED & APPROVED BY:	CHUCK KING, HWAD GOVERNMENT ENVIRONMENTAL	DATE 3/12/15
[ ] INITIAL RELEASE	[ ] REVIEW, NO REVISION REQUIRED	[ ] REVIEW - REVISION REQUIRED (SEE HISTORY BELOW)

REVISION HISTORY

REV	CHANGE DESCRIPTION	AUTHOR	DATE
8	Change description Crosswalk Between NDEP CAPP Review Comments (dated 2014-12-09, 2015-01-30 and 2015-02-26) and Mercury Storage and Transfer Program Document Contents March 10, 2015	Burton Packard and Renee Rodriguez	03/2015
7	Reformatted document to comply with the QMS standard 9001. Changed wording document throughout to state Mercury Storage and Transfer Program. Added DLA personnel responsibilities of the CAPP Training Program procedure. Added administrative changes to the signature block. **Documents are available on the G-drive: G:/Intranet/Environmental/environmental_programs/CAPP**	Robert Mathias, SOC FES/ Renee Little BOP's Secretary	09/2014
6	Deleted reference to: Elemental Mercury Receipt and Storage (SOP-DZHC-0000-M-010) and SOC Logistics – Storage Planning and Storage Crew	Yvonne Downs, Env/ Rob Mathias FES/ Cheri Bryant, Security/ Teresa McNally, Traffic/ Suzy Berry, QA	03/21/13

5	Deleted "Chief" from Responsibilities FES title-Added Approval Signatures to this document. Added the following to the Approval Signatures, "By reviewing and approving this procedure, the approver understands and will comply with the state procedure. Your signature is proof that training has been provided. The approver also understands that he/she may withhold their signature if he/she has questions about the content and may contact SOC Environmental Services to resolve questions." MOC #0051 Meeting held 05-25-11/Added Biz Mgmt Office Dir, Storage Planner, Contract Admin Manager, Safety Office Mgr, & M&L Dir to signature lines and updated personnel titles. Updated personnel titles. Deleted "TMX" from Procedures Evaluated #9, "Oxygen analyzers (TMX)" Commander would like HWAD Representative to sign documents.	Yvonne Downs, SOC Env / Rob Mathias, SOC FES/ Cheri Bryant, SOC Security/ Melissa Waggoner, SOC QA/ Jason Cardenas, SOC HR/ Nancy Rutherford, SOC HR/ Wayne Larson, SOC Safety/ Julie Moss, SOC Maintenance/ Mark Jackson, SOC Eng/ Leanne Cornell, SOC HR/ Suzy Berry, SOC QA/ Via email – Teresa McNally, SOC Traffic Herman Millsap, DLA Tom Erickson, PMSG Dir	06/14/11
4	Name change from DZHC to SOC. Added Performance Management Support Group Director to signature line. Added Performance Management Support Group Director to Preventive Maintenance Tier 2 Procedures. Changed Base Operations to Installation Site Support Services in the signature line and under Management Plan and Document Control.	Yvonne Downs, Env Svcs	01/19/11
3	Added the following to Maintenance Procedure and References, "CO_2 Line Breaking Procedure for the Mercury Storage Warehouse QP.BOP.001"/Added the following to the Preventive Maintenance Tier 2 Procedure: The criteria for selecting the most conservative of manufacturers recommendations will be through a team consisting of Manager, Engineering Services; Manager, Safety Office; Director, Base Operations; Manager, Environmental Services; Director, Quality Assurance; Fire & Emergency Services. The criteria for this team will be: safety of operating personnel; integrity of the system that the part is being considered as replacement in kind; ease of replacement; frequency of replacement / vendor history; installation of the part by Depot personnel or manufacturer; warranty (parts and/or labor); and procurement and delivery of the part. These individuals will evaluate and establish the criteria for selecting the most conservative recommendations from vendors or manufacturers based on	Yvonne Downs, Env Svcs	08/09/10

	their combined education and experience. The recommendation will be documented by MOC and provided to the Director, Base Operations for implementation.		

REFERENCE DOCUMENTS	
DOCUMENT NUMBER	**DOCUMENT TITLE**
MSSP-28	One-Metric Ton Container Specifications
May 6th &7th 2014 (CD records in MMTS library)	Trip Report Tooele Army Depot/ Inspection MSSP Containers/ CD Records in MMTS Library
QP.EMS.HG0005	Mercury Storage Site Inspection

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

1. PURPOSE

The purpose of the Mechanical Integrity Procedure is to ensure that critical process equipment associated with the Mercury Storage and Transfer Program is designed, installed, maintained, and operated correctly. This procedure serves to verify that operations and maintenance activities follow generally accepted sound engineering practices for the purpose of minimizing the risk of unintentionally releasing carbon dioxide (CO_2) or elemental mercury (Hg).

The Nevada Division of Environmental Protection (NDEP) Chemical Accident Prevention Program (CAPP) regulations require compliance with the Nevada Administrative Code (NAC) 459.95421 (below). The Mechanical Integrity procedure involves identifying, inspecting, and testing the equipment and instrumentation in the mercury storage process; documenting and tracking maintenance procedures and training maintenance personnel; establishing criteria for acceptable test results; documenting test and inspection results; and documenting manufacturers' information for equipment and instrumentation.

2. ACRONYMS AND DEFINITIONS

- **CAPP** - Chemical Accident Prevention Program
- **CO_2** - Carbon dioxide
- **FES** – Fire & Emergency Services
- **Hg** – Mercury
- **HWAD** – Hawthorne Army Depot
- **ISO** - International Organization for Standardization
- **JSA** - Job Safety Analysis
- **MOC** - Management of Change
- **NAC** - Nevada Administrative Code
- **NDEP** - Nevada Division of Environmental Protection
- **NRS** - Nevada Revised Statutes
- **PHA** - Process Hazard Analysis

2. ACRONYMS AND DEFINITIONS (CONTINUED)

- **PM** - Preventive Maintenance
- **PSI** - Process Safety Information
- **PSSR** – Pre-Startup Safety Review
- **SOC** – SOC Nevada LLC
- **SP** - Standard Procedure
- **Tier 1** – Administrative level documents (plans or procedures) that outline programmatic requirements and/or are the guide to meeting specific requirements of a CAPP element or an administrative requirement.
- **Tier 2** – Operational level procedures or plans that provide instructions to a department, division or specific staff to do the work to implement a Tier 1 document.
- **DLA**- Defense Logistics Agency
- **MMTS**- Mobile Mercury Transfer Station

3. REGULATORY REQUIREMENTS

This procedure is designed to meet the criteria of NDEP's CAPP. Specifically, the SOC Nevada LLC (SOC) Mercury Storage and Transfer Program must comply with:

NAC 459.95421 Procedures for maintenance of equipment. (Nevada Revised Statutes (NRS) 459.3818, 459.3833)

1. The owner or operator of a facility with a process subject to CAPP shall:
   (a) Establish and implement written procedures to ensure the ongoing integrity of the equipment listed in subsection 2;
   (b) Provide each employee who is involved in maintaining the ongoing integrity of the equipment listed in subsection 2 with:
      (1) An overview of the process that uses the equipment and the potential hazards of the process;
      (2) Training in the procedures that are applicable to the job tasks of the employee to ensure that the employee can perform the job tasks in a safe manner; and
      (3) Training in the program for the management of changes developed and implemented pursuant to NAC 459.95423, including instruction on how to recognize activities that are not replacement in kind;
   (c) Perform inspections and tests on process equipment listed in subsection 2;
   (d) Ensure that the procedures for inspection and testing follow recognized and generally accepted good engineering practices;
   (e) Ensure that the inspections and tests of the equipment are performed:
      (1) In the frequency required by good engineering practices and consistent with any applicable recommendations from the manufacturer of the equipment; or
      (2) More frequently if determined to be necessary by previous experience in operating the equipment;
   (f) Document each inspection and test that has been performed on the equipment, including, without limitation, documentation of:
      (1) The date of the inspection or test;
      (2) The name of the person who performed the inspection or test;
      (3) The serial number or other identifier of the equipment on which the inspection or test was performed;
      (4) A description of the inspection or test performed; and
      (5) The results of the inspection or test;

3. REGULATORY REQUIREMENTS (CONTINUED)

(g) Correct any deficiencies in the equipment that are outside the acceptable limits which are described by the process safety information developed pursuant to NAC 459.95412 before using the equipment again;
(h) In the construction of new processes and equipment, ensure that the equipment, as fabricated, is suitable for the process for which it will be used;
(i) Perform appropriate checks and inspections to ensure that equipment is installed properly and consistent with design specifications and instructions from the manufacturer; and
(j) Ensure that maintenance materials, spare parts and equipment are suitable for the process for which they will be used.

2. This section applies to:
(a) Pressure vessels and storage tanks;
(b) Piping systems, including, without limitation, piping components such as valves;
(c) Relief and vent systems and devices;
(d) Emergency shutdown systems;
(e) Controls, including, without limitation, monitoring devices and sensors, alarms and interlocks; and
(f) Rotating equipment.

4. RESPONSIBILITIES

SOC Environmental Services Manager and DLA Strategic Materials Safety Manager
Have overall responsibility for the technical administration and requirements for the development, implementation, and integration of the Mechanical Integrity Procedure and reviews all referenced Tier 2 procedures implementing CAPP requirements for Mechanical Integrity to ensure that CAPP requirements are met.

SOC Fire and Emergency Services (FES)
Has responsibility for management of the Hg monitoring and emergency response to include the testing, inspection, and maintenance of the low pressure CO_2 fire suppression systems in the Hg storage warehouses, maintenance of the mercury vapor monitoring instrumentation, and specifying safe work practices for fire (emergency response) personnel in accordance with internal procedures and per this procedure, including Lockout/Tagout procedures and maintenance personnel.

SOC Equipment Maintenance, Electric Shop Supervisor
Has responsibility for the refrigeration and relief valve components of the CO_2 systems and forklifts, ensuring that maintenance programs are in place, and that maintenance is performed in accordance with internal procedures and per this procedure.

DLA Strategic Materials MMTS Facility Manager
Have day-today responsibilities to ensure that operations and maintenance in the MMTS are conducted according to the requirements of the Mechanical Integrity Procedure.

SOC Engineering, Facilities, and Planning Manager
Has responsibility for providing engineering technical support to the Fire Chief and Equipment Manager.

4. RESPONSIBILITIES (CONTINUED)

SOC Maintenance & Utilities Manager
Is responsible for the maintenance of buildings (mercury storage warehouses) and utility systems (electrical lighting) and ensuring that maintenance is performed in accordance with internal procedures and per this procedure.

SOC Maintenance Planning and Housing Supervisor
Is responsible for the MAXIMO Database, the computer system that initiates requests for preventive maintenance, inspections and tests; documents the results of those activities, initiates work orders when maintenance is needed; and tracks the completion of work orders.

SOC General Manager and HWAD Commander
Have administrative responsibility for the development, implementation, and integration of the Mechanical Integrity Procedure.

5. MAINTENANCE PROCEDURES

Procedures for maintenance activities on each of the following process components are in place at HWAD. All maintenance procedures follow generally accepted sound engineering practices. The latest version of this procedure, the associated operating procedures (Tier 2) and supporting procedures are available on the SOC G-drive (**G:\Intranet\Environmental\CAPP**). DLA Strategic Materials MMTS workers may access the current version of this document on the *"IAmTheKey"* website. The latest version of an operating procedure shall be used for all maintenance activities on the following CAPP-regulated equipment:

- CO_2 Storage Tanks - Testing, Inspection & Maintenance of CO_2 Fire Suppression System 110 Hg Storage (DPD.IOP.FES.0015); Base Operations Start Up/ Shut Down and CO_2 Tank Fill/ Refill Procedure (QP.BOP.EMD.1301)
- CO_2 Piping - DPD.IOP.FES.0015
- CO_2 Line Breaking Procedure for the Mercury Storage Warehouse QP.BOP.001
- CO_2 Valves - DPD.IOP.FES.0015
- Relief valve systems and devices - DPD.IOP.FES.0015; Lockout/Tagout Procedure (SOC.OHS.SP.0002, Chapter 21) – supporting procedure; MAXIMO; QP.BOP.EMD.1301; Refrigeration and Maintenance Plan (BOP.IOP.EMB.1300)
- CO_2 Emergency shutdown systems - 110 Hg Storage Buildings with CO_2 Suppression Response & Activation of System (DPD.IOP.FES.0017); DPD.IOP.FES.0015; QP.BOP.EMD.1301
- Instrumentation - DPD.IOP.FES.0015; Electrician Maintenance Plan (BOP.IOP.EMB.1302); DPD.IOP.FES.0017
- Controls/Key Switches - DPD.IOP.FES.0015; Electronics Technician Mercury Storage (BOP.IOP.EMB.1303)
- Mercury vapor monitoring devices – Mercury Monitoring & Response Internal Operating Procedure (DPD.IOP.FES.0019)
- Oxygen analyzers (TMX), MAXIMO (DPD.IOP.FES.0017)
- Heat, smoke and infrared detectors - DPD.IOP.FES.0015
- Alarm systems/Interlocks - DPD.IOP.FES.0015; BOP.IOP.EMB.1303

5. MAINTENANCE PROCEDURES (CONTINUED)

- Refrigeration units/compressors/other rotating equipment, CO_2 pressure control switch, unit pressure gauge/visual - Refrigeration and Maintenance Plan (BOP.IOP.EMB.1300)
- Drum/pallet, ventilation and building containment systems: Inspection of Mercury Storage Sites.
- Mercury Vapor Monitoring System (2014 - MMTS -14).
- Inspection Testing and Maintenance (2014 - MMTS -15).
- Data Acquisition and Inventory Management (2014 - MMTS- 13).
- Equipment Calibration (2014 – MMTS - 17).
- Diesel Generator Operations. Startup, Shutdown, Refueling and Periodic Maintenance (2014 – MMTS - 24).
- Handling System Startup, Shutdown, Filter Replacement (2014 – MMTS - 25).
- Mercury Storage Site Inspection – QP.EMS.HG.0005.

Safe work practices, such as the HWAD Lockout/Tagout supporting procedure, apply to electrical/mechanical equipment identified above.

All CAPP Tier 2 maintenance procedures shall ensure that the inspections and tests of the above equipment are performed:

(1) In the frequency required by sound engineering practices and consistent with any applicable recommendations from the manufacturer of the equipment; or

(2) More frequently if determined to be necessary by previous experience in operating the equipment.

Tier 2 maintenance procedures will require documentation of each inspection and test that has been performed on the equipment (MAXIMO). The following records will be maintained for CAPP-mandated inspections/testing/maintenance activities for a minimum of three 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; and
- The results of the inspection or test.

Each piece of equipment used in the Mercury Storage Program has been reviewed by one or more of the following SOC Organizations: Engineering Services, Equipment Management, Quality Assurance, FES, Safety Office, Facilities and Utilities, and/or Environmental Services.

6. PREVENTIVE MAINTENANCE TIER 2 PROCEDURES

The HWAD preventive maintenance (PM) schedule has been developed for the equipment, piping, and instruments supporting the Mercury Storage and Transfer Program. Frequency of maintenance is based on the most conservative of manufacturer and vendor recommendations, best engineering practices, and facility experience at HWAD. DLA Strategic Materials inspections, tests, and preventive maintenance are conducted at weekly, monthly,

6. PREVENTIVE MAINTENANCE TIER 2 PROCEDURES (CONTINUED)

or annual intervals. The frequency for required inspections, tests, or preventive maintenance is defined in each Tier 2 procedure.

The criteria for selecting the most conservative of manufacturers recommendations will be through a team consisting of DLA Strategic Materials Safety Manager; Manager, Engineering Services; Manager, Safety Office; Director, Base Operations; Manager, Environmental Services; Fire Chief. The criteria for this team will be: safety of operating personnel; integrity of the system that the part is being considered as replacement in kind; ease of replacement; frequency of replacement / vendor history; installation of the part by Depot personnel or manufacturer; warranty (parts and/or labor); and procurement and delivery of the part. These individuals will evaluate and establish the criteria for selecting the most conservative recommendations from vendors or manufacturers based on their combined education and experience. The recommendation will be documented by MOC and provided to the Director, BOP, DLA Safety Manager, Safety, Health, Environmental and Quality Assurance for implementation. This process is subject to PSI and/or PHA review if necessary.

1. Micro 1 EV Panels (CO_2 system) - DPD.IOP.FES.0015 and MAXIMO
2. Refrigeration Unit (CO_2 system) - BOP.IOP.EMB.1300 and MAXIMO for Relief Systems
3. CO_2 Fire Suppression System - DPD.IOP.FES.0015 and MAXIMO
4. Warehouse (Building) Structural and Visual Grounding - Electronics Technician Mercury Storage (BOP.IOP.EMB.1303), Inspection of Mercury Storage Sites (SOP.QP.QAD.0002) and MAXIMO
5. Warehouse (Building) Grounding (Physical) – Electrician Maintenance Plan (BOP.IOP.EMB.1302) and MAXIMO
6. Building Electrical System – BOP.IOP.EMB.1302, and results are documented in MAXIMO
7. CO_2 Valves - DPD.IOP.FES.0015, BOP.IOP.EMB.1302 and MAXIMO
8. CO_2 Relief Valves - DPD.IOP.FES.0015, MAXIMO, QP.BOP.EMD.1301, BOP.IOP.EMB.1300, Lockout/Tagout (SOC.OHS.SP.0002, Chapter 21) – supporting procedure
9. Instrumentation -
   - Hg vapor monitors (Lumex, Jerome), DPD.IOP.FES.0019, MAXIMO
   - Oxygen analyzers DPD.IOP.FES.0017, MAXIMO
10. Alarm systems/Interlocks – DPD.IOP.FES.0015, BOP.IOP.EMB.1303 and MAXIMO
11. Building Natural Ventilation – MAXIMO, SOC.QP.QAD.0002
12. Drum/pallet and building containment systems: SOC.QP.QAD.0002

6. PREVENTIVE MAINTENANCE TIER 2 PROCEDURES (CONTINUED)

13. Fork lift operability – MAXIMO
14. Electrician Maintenance Plan – BOP.IOP.EMB.1302
15. Electronics Technician Mercury Storage – BOP.IOP.EMB.1303
16. MMTS -1-27 Operating procedures and Executive Summary

7. HWAD SYSTEM FOR SCHEDULING AND TRACKING MAINTENANCE ACTIVITIES

MAXIMO is the system used to schedule, document inspections, and track nearly all maintenance of mercury related equipment and systems. MAXIMO is described in 'MAXIMO Computerized Maintenance Management System, Sequential Work Order Management Plan for Mercury Storage Facilities, MMTS, and Equipment.' MAXIMO, however, is not used to schedule or document inspections conducted under SOC.QP.QAD.0002. Inspections under SOC.QP.QAD.0002 are scheduled, documented and tracked on paper under the control of the DLA Strategic Materials Facility Manager or designee. If deficiencies are found during those inspections, those deficiencies are entered and tracked in MAXIMO.

PM dates and items are submitted to the Trouble Call Desk for entry into the log book for the MAXIMO computer system, which automatically produces Work Orders to the appropriate Division/Office to trigger inspections, tests, or repairs/maintenance. Maintenance or service personnel respond to the Work Order and perform the requested service. Personnel document the results of the inspection, test or maintenance action, and this information is entered into the MAXIMO database.

If there is a problem in the process, employees will call the Trouble Desk (x7098), which prepares a follow-on Work Order, and/or they will contact their Supervisor. If a Work Order has been issued, the Work Order is maintained in MAXIMO until the Work Order is closed. Each inspection and test that is performed is documented electronically in MAXIMO or in hard copy.

Deficiencies posing immediate threat to safety, health, or the environment, as identified in the Tier 2 procedure, are corrected immediately. Otherwise, deficiencies are evaluated and prioritized by the Division Manager and corrected accordingly.

8. MECHANICAL INTEGRITY TRAINING PROGRAM

Training is required for all DLA Strategic Materials and SOC personnel who participate in the Mechanical Integrity Procedure:

- SOC Fire and Emergency Services
- SOC Engineering, Facility, and Planning
- SOC Equipment Management Division
- SOC Facilities and Utilities – Facilities Maintenance, Electric Shop
- SOC Base Operations – MAXIMO

8. MECHANICAL INTEGRITY TRAINING PROGRAM (CONTINUED)

- SOC Contract Administration and Purchasing
- SOC Security
- SOC Environmental Services
- SOC Human Resources – Training
- DLA Strategic Materials Mercury Storage and Transfer Program personnel

Training to support the Mechanical Integrity Procedure is included in the Training Plan for the HWAD Mercury Storage and Transfer Program. Training is provided by in-house and/or offsite professionals, in weekly meetings, in one-on-one meetings, hands on walkthrough verification training (on the job), through web-based training modules or via self-study (required readings). Training for Tier 2 procedures is typically implemented via self-study (required reading of the procedure). Retraining is implemented whenever there is a modification to the Mercury Storage and Transfer Program as required by the Management of Change (MOC) Procedure. Refresher training is provided at least every three years or more often if deemed necessary to ensure conformance with mechanical integrity requirements. Formal training, including refresher training, is documented via the Human Resources Training Database and/or at the organizational level. Refer to the "Mercury Training Plan" SOC.QP.EMS.HG.0002 for further details.

Personnel receive the following specific training for the Mechanical Integrity Procedure:

1. An overview of the Mercury Storage and Transfer Program, Management of Change, and CO_2 system processes and the potential hazards associated with these processes. This training is provided to everyone participating in the Mercury Storage and Transfer Program to include but not be limited to MMTS Operations (DLA Strategic Materials), FES, Engineering Services, Equipment Maintenance, Electronics Shop, and Security.
2. Procedures related to the job tasks to ensure that employees can perform the job tasks in a safe manner. Employees review the Standard Procedures (SP) at least every three years or any time there is a modification made under the MOC SP. When they sign this SP or a statement saying that they have reviewed the SP, it means they have received training; they understood the training, they have personally completed the Job Safety Analyses (JSAs) for their job functions; and they follow the safe work practices for their jobs.
3. Training is provided to those who work on all mechanical/control systems for the Mercury Storage and Transfer Program and CO_2 fire suppression systems, including the Micro1 EV; CO_2 tanks and refrigeration systems; monitoring equipment (Lumex, Jerome, oxygen); fork trucks; fire detectors – smoke, flame, and infrared; motion detectors; alarms; building electrical/grounding, and building/Hg containment systems.

Examples of training include: Alarms, Standard Procedures, Inspection of Mercury Storage Sites, Monitoring for Mercury Vapor, Mechanics of the Systems, Evacuation, Entrance, Testing, PPE, MSDS, Vendor Specifications, and Environmental Protection.

9. QUALITY ASSURANCE/ QUALITY CONTROL PROCEDURES AND PRACTICES

For any changes, including new equipment, instruments and controls, the replacement part and/or new component(s) are checked to ensure that they are consistent with the system design and suitable with the process. This check is managed in two parts:

9. QUALITY ASSURANCE/ QUALITY CONTROL PROCEDURES AND PRACTICES (CONTINUED)

1. Document the fact that the following program procedures have been consulted and followed to determine suitability of new equipment, instruments and controls, the replacement part and/or new component(s): Process Safety Information (QP.EMS.HG0002), Process Hazard Analysis (QP.EMS.HG0003), Management of Change (QP.EMS.HG0007), and Pre-Startup Safety Review (QP.EMS.HG0008).

2. A methodology similar to that applied to making changes to the PM constitutes the 2nd action to be employed by the program to track and ensure the suitability of replacement part(s) and/or new component(s) within the MMTS. This methodology requires that technical reviews are executed and documented by a team made up from the following groups: DLA Strategic Materials, Engineering Services, Safety Office, Base Operations, Environmental Services and Fire and Emergency Services. The criteria for this team are safety of operating personnel, integrity of the system that the part is being considered as replacement in kind, ease of replacement, consistency with system design / P&IDs, frequency of replacement / vendor history, installation of the part by Depot personnel or manufacturer personnel, procurement and delivery of the part. The conclusions and recommendations reached by the team will be documented using Management of Change and provided to the DLA Strategic Materials Mercury Program Manager, the Director of Base Operations, Safety Office, Human Resources (Training), and Environmental Services Manager for implementation. Prior to implementation of the conclusions and recommendations, a consultation will be conducted with all Mercury Storage and Transfer Program personnel regarding the conclusions and recommendations and all feedback will be considered and documented. Operating procedures and maintenance documentation will be updated following consultation will all Mercury Storage and Transfer Program personnel. All Mercury Storage and Transfer Program personnel will be trained on the changes. A Pre-Startup Safety Review (PSSR) will be conducted; the Environmental Services Manager and the DLA Strategic Materials Mercury Program Manager are responsible for conducting the PSSR.

10. MANAGEMENT PLAN AND DOCUMENT CONTROL

SOC Environmental Services is responsible for the technical development, implementation and integration of this SP. The following SOC organizations will participate in the development, implementation and integration of this SP and its contents and ensure their respective procedures address the requirements of this Mechanical Integrity Procedure for CAPP-regulated equipment/control systems:

- DLA Strategic Materials
- SOC Fire and Emergency Services
- SOC Engineering, Facilities, and Planning Services
- SOC Equipment Maintenance, Electric Shop
- SOC Maintenance and Utilities
- SOC Base Operations
- SOC Contract Administration and Purchasing
- SOC Security
- SOC Environmental Services
- SOC Human Resources – Training

10. MANAGEMENT PLAN AND DOCUMENT CONTROL (CONTINUED)

This procedure and its contents shall be reviewed at least annually and whenever a change has been incorporated. The review will be documented in the signature area located near the end of this document.

The SOC Environmental Services Manager or designee will review/validate the PSI and PHA prior to any mechanical changes. The NDEP Provided MOC / PSSR Flowchart will be followed (see link in References below).

This document follows the ISO 14001 Control of Documents Standard Procedure and the Standard Operating Procedure Program.

The changes making up the latest revision are documented in the revision history section. Consistent with QP.EMS.HG0004, this document will have the latest revision number noted in the appropriate block.

11. MECHANICAL INTEGRITY PROCEDURE IMPLEMENTATION

1. This procedure and the associated Tier 2 maintenance procedures are available to the affected SOC/ DLA Strategic Materials personnel via the F-drive (**F:\Intranet\Environmental\CAPP).**
2. Signatures on the SPs indicate training of personnel is documented and will document the trainee's understanding.
3. Scheduled maintenance activities can be verified by checking the Log Book at the Trouble Desk or in MAXIMO.
4. Deficiencies are tracked through the Trouble Desk.
5. The MOC, PSSR, and Work Orders are all documented in accordance with ISO 9001 or 14001 Operational Control and Document Control Standard Procedures, as applicable to the specific problem being corrected.
6. Internal audits are conducted at a minimum of every three years under the ISO 14001 Internal Audit SP and the CAPP Compliance Audit Program to assure compliance. The DLA Strategic Materials also will audit the Mercury Storage and Transfer Program and CO_2 fire suppression systems.
7. 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; and
   - The results of the inspection or test.

12. REFERENCES

- NDEP Provided MOC / PSSR Flowchart
- Standard Operating Procedure Program
- CAPP Training Plan for the Mercury Storage and Transfer Program
- MMTS Operating Procedures-2014 MMTS 1- 27 and Executive Summary
- Purchasing Manual (QP.SOC.PCH.0001)
- Electronics Technician Mercury Storage (BOP.IOP.EMB.1303)

12. REFERENCES (CONTINUED)

- Electrician Maintenance Plan (BOP.IOP.EMB.1302)
- Mercury Monitoring & Response Internal Operating Procedure (DPD.IOP.FES.0019)
- Testing, Inspection & Maintenance of CO_2 Fire Suppression System 110 Hg Storage (DPD.IOP.FES.0015)
- Lockout/Tagout Procedure (SOC.OHS.SP.0002, Chapter 21)
- Refrigeration and Maintenance Plan (BOP.IOP.EMB.1300)
- Base Operations Start Up/ Shut Down and CO_2 Tank Fill/ Refill Procedure (QP.BOP.EMD.1301)
- 110 Hg Storage Buildings with CO_2 Suppression Response & Activation of System (DPD.IOP.FES.0017)
- Inspection of Mercury Storage Sites (SOP.QP.QAD.0002)
- Supplemental Process Hazard Analysis for the Receipt and Storage of Mercury at HWAD, Tetra Tech, Inc, Reno, NV, June 2009.
- HWAD MAXIMO System for tracking preventive maintenance schedule and calibration
  ISO 14001 and ISO 9001 Control of Standard Procedures and Documents (**G:\Intranet\Environmental\ CAPP from Intranet**)
  ISO 14001 Corrective and Preventive Action Standard Procedure (**G:\Intranet\Environmental\ CAPP from Intranet**) ISO 14001 Internal Audit SP (**G:\Intranet\Environmental\CAPP from Intranet**)
- CAPP Compliance Audit Program
- Process Safety Information Procedure and supporting documents
- Process Hazard Analysis Procedure and supporting documents
- Pre-Startup Safety Review Procedure
- Management of Change Standard Procedure and supporting checklist
- Carbon Dioxide Line Breaking Procedure for the Mercury Storage Warehouses BOP.IOP.CAP.0001
- MOC Checklist.doc format
- Process Hazard Analysis for MMTS Rev 1 MSSP-43
- Process Safety Information for MMTS Rev 1 MSSP-41