SOC	QUALITY PLAN SYSTEM LEVEL PROCEDURE ISO 9001:2008 SOC NEVADA LLC	DOCUMENT NO. QP.EMS.HG.0008
TITLE	PRE-STARTUP SAFETY REVIEW- PROCEDURE FOR MERCURY STORAGE AND TRANSFER PROGRAM TO COMPLY WITH NDEP- CAPP	REV. 11 PAGE 1 OF 81

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

APPROVAL SIGNATURES		
PREPARED/REVIEWED BY:	RENEE RODRIGUEZ, DCA BASE OPERATIONS	DATE 3/12/15
PREPARED/REVIEWED BY:	BURTON PACKARD, ASSISTANT MANAGER ENVIRONMENTAL	DATE 3/12/15
REVIEWED & APPROVED BY:	HUGH QUALLS, DIRECTOR BASE OPERATIONS	DATE 3/12/15
REVIEWED & APPROVED BY:	TOM ERICKSON, MANAGER ENVIRONMENTAL SERVICES	DATE 3/12/15
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 10:28:12 -04'00'	JASON BOYNTON, DEFENSE LOGISTICS AGENCY PROGRAM MANAGER	DATE
REVIEWED & APPROVED BY:	GARY AMUNSON, DLA HAWTHORNE SITE SUPERVISOR	DATE 3/12/15
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
11	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
10	Attachment black was added/ revision number	Renee Little	11/2014
9	Reformatted to comply with the QMS ISO 9001 standard. Removed receipt and changed to Mercury Storage and Transfer Program throughout document. Added Mobile Mercury Transfer System (MSSP- 43 Rev1) as a PHA addendum. Added new acronyms and definitions. CAPP documents for document control can be found and controlled on the SOC G- Drive: **G:\Intranet\Environmental\ CAPP**	Rob Mathias, SOC FES / Renee Little, BOPS Secretary	09/2014
8	Deleted reference to: Elemental Mercury Receipt and Storage SOP (DZHC-0000-M-010); Procedure SOC.QP.QAD.0003 Shipment and Receipt Inspection of Elemental Mercury	Yvonne Downs, SOC Env/ Rob Mathias, SOC FES/ Cheri Bryant, SOC Security/ Teresa McNally, SOC	03/21/13

THIS DOCUMENT WILL BE REVIEWED AT LEAST ANNUALLY TO ENSURE ITS SUITABILITY

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

		Teresa McNally, SOC Traffic/ Suzy Berry, SOC QA	
7	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/ Updated personnel titles/ Deleted ACO Env Svcs and HWAD CEA from signature line as the 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	06/20/11
6	Name change from DZHC to SOC. Added Performance Management Support Group Director to signature line and changed Base Operations to Installation Site Support Services to the signature line.	Yvonne Downs, Env Svcs	
5	Added, "Procedure QP.BOP.001 CO_2 Line Breaking Procedure for Mercury Storage Warehouse" to Reference Supporting Documents.	Yvonne Downs, Env Svcs/ Herman Millsap, DLA/ Sandra Carroll, Tetra Tech	09/23/10

REFERENCE DOCUMENTS	
DOCUMENT NUMBER	DOCUMENT TITLE
459.95425	Nevada Administrative Codes
459.3818	Nevada Revised Statutes
459.3833	Nevada Revised Statutes

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

1. PURPOSE

The purpose of the Pre-Startup Safety Review (PSSR) Procedure is to ensure the completeness, operability and safety of the Mercury Storage and Transfer Program. The PSSR Procedure will assure that appropriate safety, operating, maintenance and emergency procedures are in place, and will verify that process hazard analysis (PHA) and management of change (MOC) have been performed as required by the Chemical Accident Prevention Program (CAPP) regulations. The PSSR will be implemented prior to the initial startup of the storage operation and the initial startup of the transfer operation and thereafter if required by MOC.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

2. ACRONYMS

- **CAPP** - Chemical Accident Prevention Program
- **CO_2** - Carbon dioxide
- **FES** – Fire and Emergency Services
- **Hg** – Mercury
- **HWAD** – Hawthorne Army Depot
- **IOP** – Internal Operating Procedure
- **ISO** - International Standards Organization
- **MOC** - Management of Change
- **MSP** - Mercury Storage Program
- **NAC** - Nevada Administrative Code
- **NDEP** - Nevada Division of Environmental Protection
- **NRS** - Nevada Revised Statutes
- **O&M** - Operations & Maintenance
- **P&ID** - Piping and Instrumentation Diagram
- **QA** – Quality Assurance
- **QMP** – Quality Management Procedure
- **QP** – Quality Procedure
- **PHA** - Process Hazard Analysis
- **PM** - Preventive Maintenance
- **PSI** - Process Safety Information
- **PSSR** – Pre-Startup Safety Review
- **QC** – Quality Control
- **SOC** – SOC Nevada LLC
- **SOP** - Standard Operating Procedure, including Quality Procedures (QP), Internal Operating Procedures (IOP), Standard Procedures (SP), Quality Management Procedure (QMP), permits, letters of instruction SOPs and Safe Work Practices (SWP)
- **SP** - Standard Procedure
- **SWP** – Safe Work Practices
- **MMTS**- Mobile Mercury Transfer System

3. REGULATORY REQUIREMENTS

This procedure is required by the Nevada Division of Environmental Protection (NDEP) CAPP under Nevada Administrative Code (NAC) 459.95425. Specifically, the Mercury Storage Program must comply with:
NAC 459.95425 Pre-start-up safety review. (Nevada Revised Statutes (NRS) 459.3818, 459.3833**)**

1. The owner or operator of a facility with a process that is subject to CAPP shall perform a pre-start-up safety review for new facilities and for modified facilities when the modification is significant enough to require a change in the process safety information.

3. REGULATORY REQUIREMENTS (CONTINUED)

2. A pre-start-up safety review must confirm that before a highly hazardous substance or explosive is introduced into a process:
   (a) Construction and equipment is in accordance with design specifications;
   (b) Safety, operating, maintenance and emergency procedures are in place and are adequate;
   (c) For new or modified facilities, a process hazard analysis has been performed and recommendations have been resolved or implemented before start-up;
   (d) Modified facilities meet the requirements concerning the management of changes set forth in NAC 459.95423; and
   (e) Training of each employee involved in operating and maintaining the process has been completed.

4. RESPONSIBILITIES

All Safety, Environmental, Quality Assurance (QA), Fire and Emergency Services (FES), Operations and Maintenance (O&M) personnel of Hawthorne Army Depot (HWAD) and DLA Strategic Materials personnel who are assigned work for the Mercury Storage and Transfer Program are required to be familiar with the PSSR Procedure for the receipt and storage of mercury.

Employees will be responsible for participating in PSSRs when requested.

Each manager and worker is responsible to ensure that the document being followed is the current version. Check the revision history and current operating/review conditions; advise management if existing conditions do not accurately reflect document content. The changes making up the latest revision are documented in the revision history section. Tier 1 and 2 documents, including MMTS Operating Procedures, will have the latest revision number noted on the document in the appropriate block and will follow the EMS document control system to ensure information is current.

Each Tier 1 and all Tier 2 documents formatted in accordance with the SOC Quality Plan contain the following statement: It is the user's responsibility to ensure, prior to use, the revision of this document is the latest available. Check the master list, if unsure of document status, prior to use. Downloaded, printed or copied document, unless supplied and so indicated by a DCA as being a controlled document are uncontrolled. Each MMTS Operating Procedure contains the following statement: ***NOTE:*** *Hard copies of this document may not be the current version. Refer to the "IAmTheKey" to verify the current version.*

SOC Nevada LLC (SOC) General Manager and Commander HWAD are responsible for the overarching administration of this procedure.

SOC Environmental Services Manager and DLA Strategic Materials Safety Manager are responsible for the administrative implementation of the PSSR Procedure.

Training on the components of the Mercury Storage process and the CAPP is conducted and administered by SOC. Training on the maintenance and logistics-related activities for the MMTS is conducted and administered by SOC. Training on the operations of the MMTS is conducted by DLA Strategic Materials and administered by SOC. Comprehension is determined as described in the Mercury Training Plan (SOC.QP.EMP.HG.0002).

4. RESPONSIBILITIES (CONTINUED)

SOC Environmental Services Manager and DLA Strategic Materials Safety Manager or designee will review the PSSR checklist and determine if further action is required, and will sign-off on the Confirmation Section of the PSSR 'Summary of Deviations' checklist. SOC Environmental Services Manager and DLA Strategic Materials Safety Manager or designee will assign a PSSR Team Leader for each review.

The PSSR Team Leader will be responsible for the following tasks:

- Assemble the PSSR team and assign responsibilities to each team member ensuring adequate coverage of the defined scope.
- Establish a schedule and timeline for PSSR completion.
- Create, organize, and manage all the documents required for completing the PSSR, ensuring the latest Mercury Storage and Transfer Program documents are used in the review.
- Hold an organizational kick-off meeting with the PSSR team members prior to beginning the review to ensure that all team members are familiar with the scope of the PSSR process:
    - Walk through the PSSR checklist;
    - Assign responsibilities for each item on the checklist;
    - Identify the information that each member will need to provide on the items under review during the PSSR.
- Conduct the PSSR following the PSSR checklist.
- Ensure that all PSSR checklist items have been covered (see attachment).
- Ensure that the checklist is signed by the PSSR participants.
- Create the PSSR Summary of Deviations – a "punch list" of follow-up actions required to be completed, based on the PSSR findings.
- Follow-up on the completion of the Summary of Deviations – corrective actions on the punch list items, until all items are complete.

5. PROCEDURE FOR PRE-STARTUP SAFETY REVIEW

The steps developed for the PSSR Procedure are described below. A detailed, process-specific PSSR checklist is used to document the PSSR review. The initial PSSR review evaluates the process-specific element of the Mercury Storage and Transfer Program: either mercury storage in 110 Area buildings or mercury transfer from 3-liter flasks to 1-metric ton containers. Subsequent PSSR reviews for modifications to the Program will focus on changes based on Management of Change (MOC) documentation.

PSSR Preparation and Sequence
The first step of the PSSR is to gain a detailed understanding of the system and equipment under review. Team members will become familiar with the equipment in the process, the specifications to be followed, modes of operation, and process safety information. The PSSR Team Leader will initiate the checklist and work with the team members to determine which documents will be reviewed, and this review could include the following: See PSSR Checklist prepared for Mercury Storage Process.

- Design criteria and specifications
- Piping and instrumentation diagrams (P&IDs) and drawings

5. PROCEDURE FOR PRE-STARTUP SAFETY REVIEW (CONTINUED)

- Equipment and instrument lists
- Control logic
- Electrical drawings
- Vendor manuals and prints
- Purchase orders
- Construction contract
- Permits
- Specialty and device lists, including valves, orifices, etc.
- O&M manuals
- Operating procedures – SOPs, IOPs, SPs, QMP, permits, letters of instruction SOPs and SWPs
- Process hazard analysis (PHA)
- MOC documentation
- Training documentation
- PSSR checklist for Mercury Storage Process
- PSSR checklist for MMTS

Construction Verification
Construction verification includes a physical inspection of the Mercury Storage and Transfer Program to verify that equipment, materials, instrumentation, and construction practices have been installed and performed in accordance with the approved design, engineering, and specification criteria. The PSSR team will conduct internal inspections of construction documentation and quality control to verify that checklist items are complete.

The Walk Through – Internal Inspection
The PSSR Team will thoroughly inspect the mercury storage or MMTS facilities, equipment and processes, noting any deficiencies on the process-specific PSSR checklist. Photographic documentation may be included in recording and describing the deficiencies. The Team Leader will schedule and inform the PSSR team members when the walk through will be conducted. The PSSR Team will:

- Conduct the walk through of the new or modified process.
- Enter the description of identified deficiencies in the process-specific PSSR checklist by type of deficiency, including all information required to ensure clarity such as photographs, P&ID number, references to technical data, and specification standards.
- Identify who recorded each deficiency or item, as well as the date it was identified.
- Summarize all the findings in the PSSR Summary of Deviations spreadsheet.
- Hold a meeting with the SOC Environmental Services Manager, DLA Strategic Materials Facility Manager, SOC Engineering, Facilities & Planning Manager, SOC Fire Chief, SOC Safety Manager, DLA Strategic Materials Safety Manager, SOC QA Manager, SOC Storage Planning Supervisor, and ACO staff to decide on a plan of action for making revisions or corrections.

Internal Audit of Construction Documents
The PSSR Team will conduct an internal audit of project documentation to verify that installed equipment, materials, and instrumentation have been installed according to the design and specification requirements. The

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

5. PROCEDURE FOR PRE-STARTUP SAFETY REVIEW (CONTINUED)

team will review project documentation and record any discrepancies between the design, specification, and construction documents on the PSSR Summary of Deviations spreadsheet.

Guidelines for Conducting the Walk Through and Internal Audit
During the document reviews and walk through, the PSSR Team will take the applicable P&IDs, piping specifications, electrical diagrams, and equipment specifications for comparison with the actual system on-site.

Team members will then conduct a hand-over-hand inspection of the systems. The following are suggested review topics:

CO_2 Mechanical Systems

- Check installed equipment against the equipment list and P&IDs to ensure that installed equipment matches the specified equipment.
- If a contractor installed the equipment and materials, audit the contractor's quality control (QC) records to ensure that alignments, materials, and rotations were made according to the manufacturer on the engineer's requirements and recommendations.
- Verify that flanges, joints, gaskets, lock wires and fasteners were matched in size and made correctly.
- Verify that bolts are evenly spaced and torqued, and that there is a full thread engagement on the bolts.

CO_2 Piping

- Compare installed CO_2 piping with the P&IDs and piping specifications, e.g. materials and sizing, to ensure that as-built piping systems match the design.
- If a contractor installed the piping and materials, audit the contractor's QC records to ensure that sizes, materials, welding, and installation have been performed according to the design documents.
- Verify that there are no obvious misalignments, leaks, dents, gouges, scratches, or loss of CO_2.
- Verify that the bend radius is not excessive.
- If applicable, verify that flow, temperature, and pressure devices are calibrated, and that the calibration sticker is attached to the piping system.
- Verify that pressure relief systems are set and tested in accordance with specifications and codes.
- Verify that the piping is supported and that pipe hangers are aligned, plumbed, and loaded correctly.
- Audit the contractor's quality control records to ensure that welding meets welding standards.

CO_2 Valves

- Compare the installed valves with the P&IDs and piping specifications to ensure that as-built systems match the design.
- Audit the contractor's as-built drawings to verify that flanges and joints were installed in accordance with design specifications.
- Verify that each valve has a label identifying its number.
- Crosscheck the valve numbers with the IOP and what is applied in the CO_2 fire suppression system to ensure consistency.
- Verify that each valve stem is clean with no evidence of leakage.
- Verify that the packing gland is aligned correctly.

5. PROCEDURE FOR PRE-STARTUP SAFETY REVIEW (CONTINUED)

- Verify that the valve orientation is correct for its use and ease of operation; reach-rods, chains, ladders, or platforms should be provided if the valve is not accessible.
- Verify that the hand wheel or valve operator is correctly installed.
- Determine whether flange shields are required, i.e. for caustic, lube oil, etc.; if they are required, whether they have been installed.

CO_2 Vessels

- Compare installed vessels (CO_2 tanks) with the P&IDs and equipment specifications to ensure that as-built systems match the design.
- Determine whether each vessel has adequate access for routine inspections and maintenance.
- Verify that the vessel exterior and interior are preserved correctly, and that the lining and insulation are installed and intact.
- Check to see if the vessel is clear of all debris.
- Verify that all instrumentation, including level indicator, is calibrated with calibration stickers attached, as applicable. Verify that calibration not required (CNR) stickers are attached as appropriate.
- Verify that all required labeling is present and accurate, i.e. content, capacity, hazardous materials.
- Verify that pressure relief systems are set and tested in accordance with specifications and codes.
- Check for the correct installation of lock wires, access covers/plates, gaskets, nuts, etc.

CO_2 Pumps

- Pumps are not applicable.

Electrical Systems (Wiring)

- Compare the installed electrical systems to the single line diagram and electrical specifications to ensure that as-built systems match the design.
- If a contractor installed the electrical systems, audit the contractor's QC records to ensure that equipment, cabling, routing, and installation have been performed according to the design documents.
- Verify that all wiring checks were completed.
- Check for breaks, scratches, and cuts in the insulation and shielding, and verify that the bend radius is not too sharp.
- Verify that all cable runs are well supported.
- Verify that wiring identification labels are correctly installed, and shielding is grounded.
- Verify that electrical safety placards are posted.

Connections

- Verify that wiring insulation is intact, and that ground straps are undamaged, not frayed, and installed correctly to true ground.
- Check plugs to ensure that they are mated correctly and water tight if exposed.
- Check connections to ensure that they are clean and clear of foreign material.
- Verify that crimping is uniform and satisfactory.
- Verify that any labels and tags are affixed correctly.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

5. PROCEDURE FOR PRE-STARTUP SAFETY REVIEW (CONTINUED)

Controllers

- Verify that switches and controllers are clean and preserved correctly.
- Verify that all switches and controllers are connected and torqued correctly.
- Verify that all switches are labeled accurately, and that the switch positions, e.g. On, Off, Enabled, Disabled, Remote, Local, Auto, are indicated correctly.
- Check the signage and confirm that precautionary signs are posted.
- Verify that all meters, relays, and protective devices are calibrated, and that calibration labels are attached if applicable.
- Check to see that the necessary operating tools are provided.

Building systems/design

- Check that lighting is adequate.
- Verify that storage configuration is appropriate.
- Verify that doors and ramps are operable and adequate.
- Verify that signage is legible, accurate and current.
- Verify that vents are open and that diking and curbing are adequate.
- Verify that security systems are in place.
- Verify that inspections/maintenance of building systems are in place and adequate.
- Verify that spare equipment/replacement equipment is adequate / accessible.
- Inspect the TERANAP 431 floor covering for tears, bulges, cuts and pulling away from walls.

Alarms

- Verify that alarm systems are adequate and functional.
- Verify that alarm control panels are clean and preserved correctly.

Temperature/Reactions

- Verify that personnel are adequately protected from contact with hot and cold surfaces.
- Verify that the potential for instrument failure has been adequately addressed.
- Verify that the potential for leaks into or out of the process has been adequately addressed.
- Verify that the potential loss of utilities has been adequately addressed.

Mechanical Equipment

- Verify that precautions have been implemented to ensure safe operations.
- Verify that provisions exist for isolation and lockout of equipment to perform maintenance.
- Verify systems/provisions for inspection, testing, and preventive maintenance and for documentation of such have been made.
- Verify refrigerants, lubricants, and seal fluids have been charged correctly.

Personal Safety

- Verify that adequate safety equipment has been provided and located where needed.
- Verify that lighting is adequate.
- Verify that physical layout is adequate.

5. PROCEDURE FOR PRE-STARTUP SAFETY REVIEW (CONTINUED)

- Verify that signage identifies work hazards and provide appropriate instruction.
- Verify Material Safety Data Sheets are available to staff and posted in the Right-to-Know station in each warehouse.
- Verify egress from each warehouse.
- Verify that wind socks are installed and in sound condition.

Emergency Response

- Verify that the hazardous materials trailer and truck are ready for emergency use.
- Verify that the Emergency Response Plan is in place and adequate for mercury and CO2 operations.
- Verify that Emergency Response training is adequate and documented.
- Verify that staff is adequately trained for emergency response functions.
- Verify that emergency response equipment (spill kits, overpacks, absorbents) are available.
- Verify that mercury monitoring instruments are working and available.

Verification of Procedure Development

During the verification of procedure development, the PSSR Team will review the operating procedures to ensure that they sufficiently cover the new process or process change of the Mercury Storage and Transfer Program.

- Obtain current copies of the procedures and compare these documents to the design and specifications for the system to determine their accuracy. Operating procedures include all procedures related to Mercury Storage and Transfer Program. Examples include, but are not limited to: Start-Up/Shut Down and CO_2 Tank Fill/Refill Procedure (QP.BOP.EMD.1301), MMTS1-27 Operating Procedures and Executive Summary, Mercury Monitoring & Response (DPD.IOP.FES.0019), and associated SWPs. The most current version of each procedure can be found on the G-drive (G:\Intranet\Environmental\environmental_programs\CAPP).
- Review operating procedures to ensure that they are accurate and complete for the specific process and document where revisions are needed.
- Verify that maintenance procedures include specific information regarding the ongoing integrity of the process equipment and safe performance of maintenance functions.
- Verify that listings of equipment, piping, and instrumentation and their specifications are available.
- Verify that a preventive maintenance (PM) schedule has been developed and made available within procedures for safe performance of the PM. Cross check the procedures with the MAXIMO maintenance tracking system to ensure consistency between PHAs, SOP, IOP and MAXIMO.
- Confirm that the operating procedures have been reviewed and revised to include the new process.
- Verify that the affected staff has been notified of the new facilities, processes, and/or additional workload that will be required of them.
- Document any deviations, discrepancies or deficiencies on the Summary of Deviations Form.

Verification of Process Hazard Analysis

The PSSR Team will review the process hazard analyses (PHA) and PHA Addendums, and will verify that the recommendations from the PHA have been addressed and resolved.

- Obtain a copy of the PHA, and review the recommendations made by the PHA team.
- Compare the recommendations to the as-built facilities, processes, and procedures to ensure that the

recommendations have been implemented.

- If any recommendations have not been implemented, verify that a written explanation documents the decision not to implement.
- Document any discrepancies or deficiencies on the Summary of Deviations Form.

Verification of Management of Change

- The PSSR Team will review the MOC documentation. The initial review shall confirm that the MOC procedure is in place; subsequent reviews will confirm that the MOC procedure was followed when required and was adequate.
- Obtain a copy of any MOCs generated for changes to the Mercury Storage and Transfer Program, including the CO_2 fire suppression system.
- Compare the requirements of the MOC with the as-built system to ensure that all MOC requirements and action items have been completed.
- Document any discrepancies or deficiencies on the Summary of Deviations Form.

Verification of Training

The PSSR Team will verify that all personnel who will be involved with the Mercury Storage and Transfer Program have received training on the program, procedures, operations, maintenance, monitoring, emergency operations, security, and/or logistics per their job assignments before they are allowed to engage in those assignments. Training on the components of the Mercury Storage process and the CAPP is conducted and administered by SOC. Training on the maintenance and logistics-related activities for the MMTS is conducted and administered by SOC. Training on the operations of the MMTS is conducted by DLA Strategic Materials and administered by SOC. Comprehension is determined as described in the Training Plan for the Mercury Storage and Transfer Program to Comply with the NDEP-CAPP (QP.EMS.HG0005) and in MMTS operating procedure Training (SOC.QP.EMP.HG.0002).

- Review training documentation for accuracy and completeness and employee sign-off sheets as required in the CAPP Training Program for the Mercury Storage and Transfer Program.
- Conduct verbal interviews with trained employees to verify that training has occurred.
- Document any discrepancies or deficiencies on the Summary of Deviations Form in the PSSR checklist.

Summary of Deviations and Confirmation of Corrective Actions

The PSSR Team will use the Summary of Deviations Form in the PSSR checklist for documenting and controlling all deviations, discrepancies, and deficiencies.

- The PSSR Team will meet and discuss the collective findings of the team.
- All decisions will be documented on the Summary of Deviations Form in the PSSR checklist with the SOC Environmental Services Manager and DLA Strategic Materials Facility Manager responsible for completion. A completion date for each correction will also be entered on this form.
- The SOC General Manager, DLA Strategic Materials Project Manager, and HWAD Commander will review and concur on all discrepancies before they are submitted to facility management.
- Once each deviation has been corrected, the responsible individual will report to the SOC Environmental Services Manager and DLA Facility Manager for verification and sign-off on the Summary of Deviations Form, to include the SOC General Manager, DLA Facility Manager, and HWAD Commander's signatures.

5. PROCEDURE FOR PRE-STARTUP SAFETY REVIEW (CONTINUED)

- The SOC Environmental Services Manager and DLA Facility Manager will provide weekly updates on the status of items on the Summary of Deviations Form to the SOC General Manager and HWAD Commander.
- Once the corrective actions are complete and documented on the Summary of Deviations Form, the PSSR Team Leader will submit the completed form to the SOC Environmental Services Manager, DLA Facility Manager, SOC General Manager, DLA Project Manager, and HWAD Commander for final approval.
- The Mercury Storage and Transfer Program or change to the Program can be started only upon final review and approval of the SOC Environmental Services Manager, DLA Project Manager, SOC General Manager and HWAD Commander.

PSSR Implementation and Verification of Compliance

1. The PSSR procedure is available to Mercury Storage and Transfer Program personnel on the G-drive (G:\Intranet\Environmental\environmental_programs\air\CAPP from Intranet).
2. Signatures on the SOPs indicate that personnel have reviewed and understand the process of the SOP. In addition, random audits are conducted under ISO 14001 Internal Audit Standard Procedure.
3. The Compliance Audit Program will be followed while conducting CAPP audits.
4. Scheduled PSSR activities will be verified by contacting the SOC Environmental Services Manager and DLA Strategic Materials Facility Manager.
5. Deficiencies are tracked on the Summary of Deviations form in the PSSR checklist through the PSSR Team Lead in consultation with SOC Environmental Services Manager and DLA Strategic Materials Facility Manager.
6. The PSSR procedure is documented in accordance with ISO 14001 Operational Control and Document Control Standard Procedures and the Standard Operating Procedure Program. The PSSR Procedure is reviewed at least annually to verify accuracy and completeness.
7. Internal audits are conducted at least every three years under the CAPP Compliance Audit Program to assure compliance with the PSSR Procedure. The Nevada CAPP inspectors and Defense Logistics Agency/Defense National Stockpile Center also will audit the mercury storage and CO_2 systems.
8. The SOC Environmental Services Manager has overall responsibility for the development, implementation, control of and compliance with the PSSR Procedure.

6. PSSR CHECKLISTS

- PSSR Checklist for Mercury Receipt, Transfer and Storage Operations
- PSSR Summary of Deviations – Punch List of Follow-up Items
- PSSR Checklist for MMTS- Mercury Transfer Program

7. RECORDS

Records retained to support this procedure include this procedure, the completed PSSR checklist, including the PSSR Summary of Deviations Form and any supporting documentation. These records will be maintained for a minimum of five (5) years.

8. REFERENCES

- CAPP Training Plan for the Mercury Storage and Transfer Program
- Compliance Audit Program
- MOC Standard Procedure
- Process Hazard Analysis Procedure
- Standard Operating Procedure Program
- ISO 14001 Control of Documents Standard (Intranet)
- NDEP Provided MOC/PSSR flow diagram
- Start-Up/Shut Down and CO_2 Tank Fill/Refill Procedure (QP.BOP.EMD.1301)
- Mercury Monitoring & Response (DPD.IOP.FES.0019)
- Procedure SOC.OHS.SP.002 Chapter 21 Lockout/Tagout Procedure
- Procedure SOC.OHS.SP.002 Chapter 10 Safety Hot Work Permit
- Supplemental Process Hazard Analysis for the Receipt and Storage of Mercury at HWAD – Prepared by Tetra Tech, Inc. Reno, NV, June 2009 and Addendum (2010).
- Process Hazard Analysis for the Receipt and Storage of Mercury at HWAD – prepared by Tetra Tech, Inc. Reno, NV, April 27, 2007 and Addendum (2010).
- Process Hazard Analysis for Mobile Mercury Transfer System prepared by Oak Ridge National Laboratory, Oak Ridge, Tennessee April 2014.

SUPPORTING DOCUMENTS

- Management System and Implementation Plan CAPP for the HWAD Mercury Storage Program.
- Employee Participation Program
- Incident Investigation Standard Procedure
- Mechanical Integrity Procedure
- Process Safety Information Procedure
- Process Safety Information addendum for MMTS, MSSP-41 Revision 1.
- Procedure DPD.IOP.FES.0015 Testing, Inspection and Maintenance of CO_2 Fire Suppression System 110 Hg Warehouses
- Procedure DPD.IOP.FES.0017 Hg Storage Warehouse with CO_2 Suppression, Response and Activation of System
- Procedure SOC. HWAD.FES.0005 HWAD Emergency Operations Plan, Annex C, Emergency Response
- Procedure SOC.HWAD.FES.0005 HWAD Emergency Operations Plan
- Installation Hazardous Material/Waste Contingency Plan, RCRA Main Base, Permit Application
- Procedure DZHC.0000-A-001 General Safety and Security Requirements – General Safety
- Procedure BOP.IOP.EMB.1300 Refrigeration and Maintenance – Refrigeration system for CO_2 Fire Suppression System 110 Hg Warehouse
- System MAXIMO – Computer Maintenance Management System
- Procedure QP.BOP.EMD.1301 Startup/Shutdown and CO_2 Tank Fill/Refill Procedure
- Procedure BOP.IOP.EMB.1302 Electrician Maintenance Plan
- Procedure BOP.IOP.EMB.1303 Electronics Technician Mercury Storage
- MMTS- Standard Operating Procedures MMTS 1-27 and Executive Summary

8. REFERENCES (CONTINUED)

- As Built Drawing List:
- Procedure SOC.QP.QAD.0002 Inspection of Mercury Storage Sites
- Procedure QP.BOP.001 CO_2 Line Breaking Procedure for Mercury Storage Warehouse
- The following reference engineering documents are located in the SOC Mercury Library:
  - Chemetron Low Pressure CO_2 Operation & Maintenance Manual for 4, 6, 8, 10 ton storage units S/N 30000C38, Rev C. 03/28/2006.
  - Quality Control Procedure, QC-1011, ECN 9147C.
  - As-Built Record of Equipment and Materials for Modify Munitions Storage Buildings at HWAD; United State Army Corps of Engineers – Contract # W91238-07-D-0004 TO-0001 Alternative Structural/Technologies, Inc.
  - Acceptance Testing Log – Modify Munitions Storage Buildings at HWAD; United States Army Corps of Engineers – Contract # W91238-07-D-0004 T0-0001 Alternative Structural Technologies, Inc.
  - Chemetron Fire Systems, Low Pressure Co_2 Mechanical Installation Specifications Plate H-75 issued February 15, 1965, Revised July 25, 2002, S/N 30000025.
- As Built Drawing List:
  - FA-1 - Project Cover Sheet
  - FA-2 - Equipment list and battery calculations
  - FA-3 – Fire alarm, intrusion detection, expansion & new CO2 system electrical device layout.
  - FA-4 - Fire alarm, intrusion detection, expansion & CO2 storage tanks layout.
  - FA-5 – CO_2 Piping Layout
  - FA-6 – CO_2 Piping Isometric Layout
  - FA-7 – EFACP layout, Fire Alarm Control Panel
  - FA-8 – CO_2 Control Panel
  - FA-9 – FA Address Charts
  - FA-10 – FCPS & Detail Sheet, Warning Sheets
  - As Built for MMTS

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Pre-Startup Safety Review (PSSR) Checklist

Mercury Receipt, Transfer and Storage Operations

to comply with the NDEP CAPP

Part I – Origination

Originator: _____ Date: _____ Process: Mercury Storage

Initiating Event: _____ MOC #: ____

Location: Mercury Storage Warehouse Bldg # _____

Description of Additions/Modifications (Scope of Work):

Review Team Participants:

Instructions: If an item is marked "No" under Not Applicable - then record the date and name under "Verified By"; no further review is required for actions / items / tasks deemed not applicable. If an action / item / task is marked "Yes" in the Applicable column, then conduct readiness review to verify action / task / item is completed. If completed (Yes), then provide the date of completion of this review and your name under "Verified By". If an action / item / task is marked "No" (not complete), record the date and your name and provide an explanation of what is not complete or what couldn't be verified and any comments in the "Summary of Deviations & Corrective Actions" form and attach to the PSSR Checklist.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part II – Process Safety and System Readiness

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
Hazard Communication				
1. Mercury Safety Data Sheet				
2. Carbon Dioxide SDS				
3. Methyl Salicylate SDS				
4. Methyl Alcohol SDS				
5. Exposure to Mercury and Its Vapor				
6. Standards and Level of Exposure				
7. PPE Selection and Use - SOP and Training provided and documented?				
8. Personal Exposure and Mitigation (Decontamination) covered?				
9. Personal Effects Exposure and Mitigation (Decontamination) covered?				
10. Equipment Exposure and Mitigation (Decontamination) covered?				
Training on Carbon Dioxide Hazard Communication				
1. Exposure to Carbon Dioxide				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

2. Evacuation from a mercury storage warehouse - SOP and training provided and documented?				

NOTES: For Process Safety & System Readiness Part II:

2.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part III –Construction Verification/Readiness

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
General Process Walkthrough				
1. CO_2 P&IDs have been developed or updated to reflect the additions or modifications?				
2. Process/Block flow diagrams have been developed or updated to reflect the additions or modifications?				
3. Additions or modifications are in accordance with local Codes and Standards?				
4. Electrical Classification Areas have been defined or updated to reflect the additions or modifications?				
5. Relief System design basis and actual component capacities have been defined or updated to reflect additions/modifications?				
6. Safety equipment checklists have been updated to reflect required checks of new or revised equipment?				
7. Plot plans have been updated?				
Management of Change/Process Hazard Analysis				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

1. MOC pertaining to modifications has been performed and deemed adequate? **Please note that this task is mandatory.**				
2. PHA pertaining to the additions/modifications has been performed and deemed adequate? **Please note that this task is mandatory.**				
3. All PHA recommendations have been resolved or implemented prior to startup?				
4. Potential impacts of change on the unchanged facilities have been adequately addressed?				
5. Changes in the process have been communicated adequately to affected staff?				
CAPP Procedures				
1. Health & safety procedures (SOPs / IOPs, including Safe Work Practices) have been implemented or have been updated to reflect additions / modifications **and** are deemed adequate? Refer to key procedures below:				
a. Mercury Monitoring and Response IOPs (DPD.IOP.FES.0019)?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

b. Equipment Maintenance IOPs? Refrigeration & Maintenance Plan – BOP.IOP.EMB.1300; CO_2 Tank Fill / Refill Procedure – QP.BOP.EMD.1301; Electrician Maintenance Plan – BOP.IOP.EMB.1302; Electronic Tech Hg Storage – BOP.IOP.EMB.1303				
c. Mercury Storage Site & Stockpile Inspection SOPs (SOC.QP.QAD.0002)?				
d. Mercury Receipt and Storage SOP (SOP-DZHC-0000-M-010)?				
e. Forklift Operation – SOP (SOP-DZHC-0000-M-010)?				
f. Forklift Maintenance – MAXIMO?				
g. Security – IOP (DPD.IOP.GRD.006)?				
h. Portable Fire Extinguishers – Fire Prevention Plan adequate?				
i. Test, Inspection & Maintenance of CO_2 Fire Suppression System IOP adequate (DPD.IOP.FES.0015)?				
j. CO_2 Fire Suppression Response & Manual Activation of System IOP adequate (DPD.IOP.FES.0017)?				
k. Shipment and Receipt of Elemental Mercury adequate (SOC.QP.QAD.0003)?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

I. Master Training Plan (SOC.QP.HRD.0005)?				
2. Safe Work Practices[1] have been implemented or have been updated to reflect additions / modifications and are deemed adequate? Refer to key practices below:				
a. Lockout / Tagout (Chapter 21 of SOC.OHS.SP.0002)?				
b. Hot Work (Chapter 10 of SOC.OHS.SP.0002)?				
c. Line Breaking[2] (IOPs 1300, 1301, 1302, and 1303)?				
3. All other pertinent CAPP-mandated process safety policies, plans, procedures, & documents have been updated to reflect the additions / modifications & are deemed adequate?				
4. New or revised procedures have been provided and approved, if required?				
5. Special procedures for air monitoring methods, equipment maintenance, etc. have been provided?				
6. Required approvals & approval signatures on procedures have been obtained and uploaded to the appropriate ISO Document Control System (ISO 14001, 9001, 18001) on the Intranet?				

[1] Note: Confined space does not apply to the Mercury Storage Program, including the CO_2 fire suppression system.
[2] Note: Refer to Lockout / Tagout Procedure – zero energy state

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

8. Maintenance list for new safety relief devices has been updated to reflect additions or deletions?				
9. Special procedures for commissioning or first-time start-up have been provided and reviewed, if applicable?				
10. SOP / IOP requirements (refer to MSP Mechanical Integrity Procedure) have been checked and verified to match / correlate with input into MAXIMO?				

NOTES: For Construction Verification & Readiness Part III:

3.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part IV – Physical Process Initial Installation or Modifications

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Components have been installed in correct orientation (flow direction, top / bottom, etc.)?				
2. All required tests, non-destructive evaluation, chemical treatment, and / or decontamination have been completed?				
3. Installed components have been configured correctly for start-up, e.g. open / closed, enabled / disabled, on / off.				
4. Connections (fittings, bolts, welds, etc.) are completed correctly?				
5. Marking and labeling (CO_2 system component ID #, substance, and physical state) have been completed and are accurate?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES: Physical Process Initial Installation or Modifications Part IV:

4.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part V – Temperature / Reactions

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Personnel have been adequately protected from contact with cold and hot surfaces?				
2. The potential for instrument failure has been adequately addressed?				
3. The potential for CO_2 and refrigerant leaks into or out of the process has been adequately addressed?				
4. The potential for improper valve set-up (CO_2) or operating error has been adequately addressed?				
5. The potential for loss of utilities has been adequately addressed?				

NOTES: For Temperature / Reactions Part V:

5.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part VI – CO_2 Valves, Piping, and Vessels

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. A line-by-line review has been conducted to ensure the piping is installed as specified?				
2. Piping has been laid out in a straight forward manner such that potential for confusion is minimized?				
3. CO_2 vents are located such that they do not create personnel hazards?				
4. Safe access to valve operations has been provided?				
5. Pipe has been located such that it cannot slip or fall due to line expansion during clean-up, start-up, or shutdown?				
6. A means has been provided such that all valves shown as locked on the drawing can be locked?				
7. Nipple lengths have been minimized, and cantilevered branch connections have been avoided?				
8. Electrical continuity and grounding have been provided and checked?				
9. CO_2 storage tanks have been labeled correctly?				

10. Appropriate testing has been completed & documented to ensure integrity of new[3] or revised piping?				
11. Drawings have been revised to show "as built" condition?				
12. Materials of construction have been verified to ensure the correct materials were received & installed according to valve and piping specifications?				
13. Correct gaskets have been installed according to valve & piping specifications?				
14. Piping system is adequately supported or braced?				
15. Vessels, instruments, & other components are adequately supported?				
16. Check valves have been reviewed to ensure that they are installed in the correct direction?				
17. Bolts are torqued correctly?				

NOTES: For CO_2 Valves, Piping and Vessels Part VI:

6.1

[3] Note: For the initial PSSR, new includes the CO_2 piping.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part VII –Mechanical Equipment

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Special precautions for safe operations have been adequately specified?				
2. If new lubricants or fluids have been introduced, MSDS' have been provided?				
3. Adequate provisions exist for isolation and lockout of equipment to perform maintenance?				
4. Inspection, testing, & preventive maintenance for mechanical equipment provisions have been made & documentation of such is adequate?				
5. Capacities of lifting equipment are clearly displayed and visible to operators?				
6. Refrigerants, lubricants, and seal fluids have been charged correctly?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES: For Mechanical Equipment Part VII:

7.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part VIII – Controllers/Alarm Systems

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Fail-safe function of valves has been installed correctly?				
2. Potential for interaction with existing controls has been reviewed and addressed?				
3. Alarms are provided where necessary?				
4. Unnecessary alarms have been avoided?				
5. Safeguards are provided to prevent the accidental tripping of switches?				
6. Automatic valves can be isolated correctly and cleaned for servicing or removal?				
7. New instruments and alarms have been identified and designated as such in the inspection, testing, & preventive maintenance programs?				
8. The operation of alarms has been verified?				
9. Alarm control panels are clean and preserved correctly?				
10. New alarm listing has been updated to reflect additions or deletions of alarms?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES: For Controllers / Alarm Systems Part VIII:

8.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part IX – Electrical Systems

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Start / stop switches and electrical switchgear have been labeled correctly?				
2. Electrical equipment can be isolated safely for repair work?				
3. Lockout provisions exist at both switchgear & start / stop switches?				
4. Electrical equipment is grounded correctly?				
5. Electrical equipment has been protected from corrosion?				
6. Electrical interlocks have been tested for safe operation?				
7. Electrical drawings have been completed to reflect "as built" conditions?				
8. Electrical manuals have been filed correctly?				
9. Electrical guards have been installed?				
10. Indicator lights are operating correctly?				
11. Electrical test results have been reviewed and approved?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

12. All electrical equipment is consistent with electrical classification documentation?				

NOTES: For Electrical Systems Part IX:

9.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part X – Building Control Systems

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Ventilation, diking & curbing are adequate?				
2. Adequate provisions have been made for handling drums & other portable containers?				
3. Spare equipment available?				
4. Doors, security systems operable / adequate?				
5. Inspections conducted / adequate?				
6. Inspection of the Teranap 431 floor covering conducted for tears, bulges, cuts, & pulling away from walls?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES: For Building Control Systems Part X:

10.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part XI – Personnel, Safety, Review, and Fire Protection

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Adequate safety equipment (i.e., fire extinguishers) has been provided & located where needed?				
2. Unobstructed access to safety & fire protection equipment is provided?				
3. Potential for exposure to high noise levels has been adequately addressed?				
4. Lighting is adequate?				
5. Walkways and ladders provide safe access at all levels?				
6. Walking and working surfaces are level, secured, & provide adequate traction?				
7. Requirements for elevated work surfaces (ladders) have been met?				
8. Work area is adequately ventilated?				
9. Sight glasses, gauges, etc. have been correctly armored?				
10. Signs adequately identify work area hazards & provide appropriate instruction?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

11. Exits and egress routes are clearly identified?				
12. Physical layout is acceptable in regard to height of equipment, accessibility, and lifting?				
13. Any "hot" surfaces are labeled or insulated?				
14. MSDS for all chemicals in the process are available?				
15. HAZCOM program has been updated to reflect changes in chemicals handled?				
16. Adequate handling and storage facilities have been provided for all new[4] chemicals?				
17. The warehouses and job site have been cleaned-up adequately?				
18. Provisions have been made to minimize the potential for personnel exposure during clean-up, preparation for maintenance, and maintenance work – both field and shop?				
Emergency Preparedness and Response				
1. Hazmat Response Trailer - ready?				
2. Truck for the Response Trailer - ready?				
3. Emergency Response Plan, Operating Procedures adequate?				

[4] Note: For the initial PSSR, CO_2 and mercury are the "new" chemicals to be evaluated.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

4. Mercury Monitoring Equipment – SOP adequate?				
5. Monitoring Equipment Calibration - SOP adequate?				
6. Spill Kits, Materials and Methods - SOP adequate?				
7. Salvage Drum - SOP adequate?				
8. Portable Fire Extinguishers in Storage Warehouses - Fire Prevention Plan adequate?				
9. Windsocks installed; siting is adequate to allow visibility from all warehouses; SOP for periodic inspection adequate?				

NOTES: For Personnel, Safety, Review, & Fire Protection Part XI:

11.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part XII – Training and Documentation

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Training materials have been checked to ensure they contain adequate provisions for health exposure control, unit startup, components failure, shutdown, management of change & emergency response activities?				
2. All affected operations, maintenance, and supervisory personnel have been trained on revisions to procedures, & the training is deemed adequate?				
a. Operator training adequate & documented?				
b. Emergency response training adequate & documented?				
c. Preventative maintenance training adequate & documented?				
3. CAPP overview (general awareness level) training adequate & documented?				
4. CAPP training records (syllabus, attendees, dates, etc.) & certification materials have been updated & on file?				

5. Training & equipment needs have been considered & purchased for this new or revised process?				
6. Manuals & process documentation have been updated?				
7. Manufacturer & vendor documentation on equipment has been filed correctly in the maintenance & operations areas?				
8. MSP CAPP training program implemented & training has been completed, documented, & input into the training records system?				
a. MSP CAPP Overview Training[5] (classroom with test) complete & documented?				
b. MSP Tier 1 Procedures training complete and documented?				
c. MSP Tier 2 Procedures. Operational training complete & documented?				
NOTES: For Training and Training Documentation Part XII: 12.1				

[5] Note: Training exceptions are allowed. Exception include: personnel with extended absences or on leave provided training has been assigned and will be completed when they return to work. For site awareness training (c above) staff previously trained would not be retrained until their next retraining date; other assigned CAPP training is sufficient until that site awareness retraining is complete.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part XIII – Other Considerations

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed	Verified By:
1. Equipment and drum layout provides safe access for operation and maintenance?				
2. Appropriate materials of construction for mercury containment (drums, floor liner) are used with consideration of compatibility or corrosion?				
3. Adequate provisions for technical or supervisory support during initial operation have been made?				
4. Critical spare parts have been obtained?				

NOTES: Other Considerations Part XIII:

13.1

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part XIV – PSSR Team Signatures/Dates:

Team Leader / Team Member (print)	Signature	Date

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

SUMMARY OF DEVIATIONS & CORRECTIVE ACTIONS

Date of Review:

Members of Review Team:

Facility / Process Equipment:

ITEMS THAT MUST BE RESOLVED/REPAIRED PRIOR TO START-UP

Item Description By Process Category (Findings) Describe & Corrective Action (C/A)	Estimated Completion Date	Responsible Party	Final Completion Date
Process Safety & System Readiness (Part II)			
Construction Verification & Readiness; Physical Process Initial Installation or Modifications; Temperature & Reactions (Parts III, IV, V)			
Valves, Piping, and Vessels (Part VI)			
Mechanical Equipment (Part VII)			

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Control Systems (Parts VIII and X)			
Electrical Systems (Part IX)			
Personnel Safety, Review & Fire Protection (Part XI)			
Training and Training Documentation (Part XII)			
Other Considerations (Part XIII)			
*Verification of final completion date by SOC Environmental Services Manager is required.			
ITEMS THAT MUST BE RESOLVED/REPAIRED AFTER START-UP			
Item Description By Process Category / Describe & Corrective Action (C/A)	**Estimated Completion Date**	**Responsible Party**	**Final Completion Date**
Process Safety & System Readiness (Part II)			

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Construction Verification & Readiness; Physical Process Initial Installation or Modifications; Temperature & Reactions (Parts III, IV, V)			
Valves, Piping, & Vessels (Part VI)			
Mechanical Equipment (Part VII)			
Control Systems (Parts VIII, X)			
Electrical Systems (Part IX)			
Personnel Safety, Review & Fire Protection (Part XI)			
Training & Training Documentation (Part XII)			
Other Considerations (Part XIII)			
*Verification of final completion date by SOC Environmental Services Manager is required.			

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

CONFIRMATION SIGNATURES THAT REQUIRED REVIEWS HAVE BEEN PERFORMED	
Base Operations DCA:	Date:
Manager, Environmental Services:	Date:
Defense Logistics Agency Program Manager:	Date:
DLA Hawthorne Site Supervisor:	Date:
HWAD Government Environmental:	Date:

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Pre-Startup Safety Review Checklist
Mercury Transfer Operations and the Mobile Mercury Storage System (MMTS)

to Comply with NDEP CAPP

2/11/2015

Part I – Origination

Originator: _____ Date: _____ Process: Mercury Transfer

Initiating Event: _____ MOC #: _____

Location: Mobile Mercury Transfer System (MMTS)

Description of Additions/Modifications (Scope of Work)

This description is intended to provide a background for activities that occur in and in support of the Mobile Mercury Transfer System (MMTS). PSSR team members should read and understand this background prior to working through the detailed elements of the checklist.

Background: Defense Logistics Agency Strategic Materials (DLA Strategic Materials) is the custodian of the national stockpile of mercury, which is now located at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. At the direction of DLA Strategic Materials, the mercury inventory currently stockpiled at HWAD will be transferred from the existing steel flasks 76-lb of mercury to new steel containers holding 1 metric ton of mercury in a purposely constructed facility called the Mobile Mercury Transfer System.

The MMTS is mobile and could be located adjacent to any or all of those HWAD warehouses that currently store the existing mercury flask stockpile. The MMTS is installed adjacent to Building 110-66, to re-containerize inventory in that warehouse, based in part on the existing synergies for the electrical upgrade required. To minimize costs and downtime, the MMTS is expected to remain in its current location until the entire mercury stockpile has been transferred from the existing 76-lb flasks to 1-MT containers. The 1-MT containers are produced at the Tooele Army Depot, with 395 currently on site at HWAD, and 400 additional units to be shipped in 2015. Each container has a serial number and QA data package, with records stored in the comfort trailer.

Operations, equipment maintenance and support (including waste management) procedures needed for use in the MMTS were developed for DLA Strategic Materials by Oak Ridge National Laboratory (ORNL), with all DLA Strategic Materials comments fully implemented. These procedures encompass actions and activities for 27 separate topical categories. A summary listing of each set of these procedures is given in Table S.1 below. The procedures are written for use and implementation by DLA Strategic Materials. Some procedures are stand-alone such as Training (SOC.QP.EMP.HG.0002). Mercury handling procedures require execution in combination with others. For instance, executing pallet and drum handling and flask removal (2015-MMTS-4 and 2015-MMTS-5) are required prior to Fume Hood 1 and Fume Hood 2 operations (2015-MMTS-6 and 2015-MMTS-7). The content and interfaces of each procedure must be understood by the MMTS operating staff. New staff must be trained to these procedures and be certified by the training officer to operate the systems (as defined in the training procedure).

Consistent with ensuring required employee participation, all operators of the MMTS facility shall have the opportunity to comment and improve these procedures. During training campaigns in the fall 2014 the DLA Strategic Materials staff made several highly useful recommendations that were enacted in the final installation and procedures. The DLA Strategic Materials Mercury Program Manager and MMTS Facility Manager shall assure that cross-training shall be implemented for special mercury container and handling operations to be performed in the drum and flask handling processing rooms.

The procedures address findings and suggestions identified in the Process Hazards Assessment.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

The DLA Strategic Materials shall strive for excellence in safety, health, and environmental leadership through the implementation of sustainable, sound, and proactive programs. All DLA Strategic Materials staff and subcontractors are expected to adhere to safety, health, and environmental requirements defined by Hawthorne Army Depot (HWAD) and DLA Strategic Materials for the work they perform.

Prior to shipment of the MMTS, the MMTS functional testing was completed at the seller's equipment installation site. Site preparation at Building 110-66, installation-readiness requirements, and inspection during set-up were completed. Acceptance and functional operational testing were performed on the installed equipment and systems at the Hawthorne, Nevada off-site location. Acceptance and functional operational testing were performed on the installed equipment and systems at Building 110-66 which is the current operating location on the HWAD site. The MMTS could be moved to other mercury buildings on the site, but utility and site upgrades would be required.

The first shipment of metric ton containers from the Tooele Army Depot (TEAD), vendor supplied Mercury Monitoring System, HVAC units, personnel access steps, rails and platforms arrived and were installed at Building 110-66 timely with the MMTS transport and set-up. The HWAD site preparation requirements specified by DLA Strategic Materials were completed prior to MMTS transport to and setup at Building 110-66.

Table S.1. MMTS procedures

Section	Procedure topic (description)	Document number
ES	Mobile Mercury Transfer System Procedures Executive Summary	2015-MMTS-ES
1	Metric Ton Container Acceptance and Staging	2015-MMTS-1
2	Metric Ton Container Setup	2015-MMTS-2
3	Metric Ton Container Transport and Storage	2015-MMTS-3
4	Pallet Transport and Handling	2015-MMTS-4
5	Drum Handling	2015-MMTS-5
6	Fume Hood 1 – Mercury Access	2015-MMTS-6
7	Fume Hood 2 – Mercury Transfer	2015-MMTS-7
8	Metric Ton Container Unhook and Close	2015-MMTS-8
9	Empty Flask Disposition and Transport	2015-MMTS-9
10	Waste Management	2015-MMTS-10
11	Routine Cleaning	2015-MMTS-11
12	Emergency Response and Spill Clean Up	2015-MMTS-12
13	Data Acquisition and Inventory Management	2015-MMTS-13
14	Mercury Vapor Monitoring System	2015-MMTS-14
15	Inspection, Testing and Maintenance	2015-MMTS-15
16	Fire Protection	2015-MMTS-16
17	Equipment Calibration	2015-MMTS-17
18	Security	2015-MMTS-18
19	Training	SOC.QP.EMP.HG.0002
20	Mercury Medical Surveillance	2015-MMTS-20

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

21	Decontaminating and Decommissioning	2015-MMTS-21
22	Personnel Notifications	2015-MMTS-22
23	Operations Under Adverse Conditions	2015-MMTS-23
24	Diesel Generator Operations-Startup, Shutdown, Refueling, and Periodic Maintenance	2015-MMTS-24
25	Air Handling System — Startup, Shutdown, and Filter Replacement	2015-MMTS-25
26	Mercury Transfer from Mercury Drum	2015-MMTS-26
27	Defense National Stockpile Mercury Inventory Control	2015-MMTS-27

Preventive Maintenance requirements and schedules for MMTS components reside within the SOC maintenance tracking system MAXIMO. Documentation for construction of the MMTS and installation and acceptance testing of it and its components are stored in the personnel trailer adjacent to the MMTS. Documentation copies reside with SOC Maintenance. DLA Strategic Materials' MMTS workers must refrain from taking any actions that would require Lock-Out/Tag-Out or Hot Work permits. Such activities are to be performed only by appropriately trained SOC maintenance workers.

Review Team Participants:

<u>Instructions</u>: If an item is marked "No" under Not Applicable – then record the date and name under "Verified By"; no further review is required for actions / items / tasks deemed not applicable. If an action / item / task is marked "Yes" in the Applicable column, then conduct a readiness review to verify action / task / item is completed. If completed (Yes), then provide the date of completion of this review and your name under "Verified By." If an action / item / task is marked "No" (not complete), record the date and your name and provide an explanation of what is not complete or what could not be verified and any comments in the "Summary of Deviation & Corrective Actions" form and attach it to the PSSR Checklist.

PSSR team members must understand that two elements of Part III – Construction Verification & Readiness, Management of Change/Process Hazard Analysis are mandatory, i.e., must be performed. The mandatory elements are items 1 and 2: "MOC pertaining to modifications has been performed and deemed adequate?" and "PHA pertaining to the additions/modifications has been performed and deemed adequate?"

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

If all checklist items are complete (no discrepancies), both portions of the MMTS PSSR checklist Summary of Deviations and Corrective Actions will be marked N/A (not applicable); review signatures will be affixed by the SOC General Manager, DLA Strategic Materials Mercury Program Manager and HWAD Commander; and operations may begin.

If some reviewed items are evaluated as not complete (discrepancies), each of those items is placed in one of two categories by the SOC Environmental Manager and the DLA Strategic Materials Facility Manager: suitable for implementation after startup or must be implemented prior to startup. Discrepancies are assigned completion schedules and are presented to the SOC General Manager, DLA Strategic Materials Mercury Program Manager and HWAD Commander for review and concurrence. Following concurrence, the discrepancies and schedules for completion are given to the cognizant SOC manager or the DLA MMTS Facility Manager for corrective actions.

In the absence of any items that must be implemented prior to startup, that portion of the MMTS PSSR checklist Summary of Deviations and Corrective Actions will be marked N/A (not applicable); review signatures will be affixed by the SOC General Manager, DLA Strategic Materials Mercury Program Manager and HWAD Commander; and operations may begin.

Biweekly (or a more frequently if desired by senior managers), the SOC Environmental Services Manager and the DLA MMTS Facility Manager will evaluate any outstanding corrective actions for completion and will provide status notifications to the SOC General Manager, DLA Strategic Materials Mercury Program Manager and HWAD Commander.

Startup of the MMTS cannot occur until all items required to be implemented prior to startup are completed and the SOC General Manager, DLA Strategic Materials Mercury Program Manager and HWAD Commander have approved and signed off on completion of the necessary reviews.

Discrepancies judged to be suitable for implementation after startup are tracked by the SOC Environmental Services Manager and the MMTS Facility Manager through completion and signoff by the SOC General Manager, DLA Strategic Materials Mercury Program Manager and HWAD Commander. Progress. Progress is identified during the annual report to NDEP. All discrepancies judged to be suitable for implementation after startup must be completed within twelve (12) months of startup.

The completed, signed PSSR checklist with Summary of Deviations section shall be retained for a minimum of five (5) years.

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part II – Process Safety and System Readiness

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary Review)	Verified By:
Hazard Communication				
1. Mercury Material Safety Data Sheet				
2. HgX® MSDS				
3. MERSORB® MSDS				
4. Exposure to Mercury and Its Vapor				
5. Standards and Level of Exposure				
6. PPE Selection and Use - Operating Procedures and Training provided and documented?				
7. Personal Exposure and Mitigation (Clean-up) covered?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Notes on Part II – Process Safety and System Readiness (Hazard Communication) – Items 1-7				
8. Personal Effects Exposure and Mitigation (Clean-up) covered?				
9. Equipment Exposure and Mitigation (Clean-up) covered?				
Notes on Part II – Process Safety and System Readiness (Hazard Communication) (continued) – Items 8-9				

Part III – Construction Verification and Readiness

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary Review)	Verified By:
General Process Walkthrough				
1. Mobile Mercury Transfer System P&IDs have been developed or updated to reflect the additions or modifications?				
2. Process/Block flow diagrams have been developed or updated to reflect the additions or modifications?				
3. Additions or modifications are in accordance with local Codes and Standards?				
NOTES on Part III – Construction Verification & Readiness **General Process Walkthrough – Items 1-3**				
4. Electrical Classification Areas have been defined or updated to reflect the additions or modifications?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES on Part III – Construction Verification & Readiness

General Process Walkthrough – Item 4

5. Relief System design basis and actual component capacities have been defined or updated to reflect additions/modifications?				
6. Safety equipment checklists have been updated to reflect required checks of new or revised equipment?				
7. Plot plans have been updated?				

NOTES on Part III – Construction Verification & Readiness

General Process Walkthrough (continued) – Item 5-7

Management of Change/Process Hazard Analysis

1. MOC pertaining to modifications has been performed and deemed adequate? **Please note that this task is mandatory.**				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES on Part III – Construction Verification & Readiness

Management of Change/Process Hazard Analysis – Item 1

2. PHA pertaining to the additions/modifications has been performed and deemed adequate? **Please note this task is mandatory.**				
3. All PHA recommendations have been resolved or implemented prior to startup?				
4. Potential impacts of change on the unchanged facilities have been adequately addressed?				
5. Changes in the process have been communicated adequately to affected staff?				

NOTES on Part III – Construction Verification & Readiness

Management of Change/Process Hazard Analysis – Items 2-6

.

CAPP Procedures

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

1. **Health & safety procedures** (Operating Procedures and Safe Work Practices) have been implemented or have been updated to reflect additions / modifications and are deemed adequate? Refer to key procedures below:				
1. Equipment Maintenance procedures adequate?				
2. Metric Ton Container Acceptance and Staging (2015-MMTS-1)				
NOTES on Part III – Construction Verification & Readiness **CAPP Procedures** **1. Health & safety procedures**				
3. Metric Ton Container Setup (2015-MMTS-2)				
4. Metric Ton Container Transport and Storage (2015-MMTS-3)				
5. Pallet Transport and Handling (2015-MMTS-4)				
6. Drum Handling (2015-MMTS-5)				
7. Fume Hood 1 – Mercury Access (2015-MMTS-6)				
8. Fume Hood 2 – Mercury Transfer (2015-MMTS-7)				
9. Metric Ton Container Unhook and Close (2015-MMTS-8)				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

10. Empty Flask Disposition and Transport (2015-MMTS-9)				
11. Waste Management (2015-MMTS-10)				
12. Routine Cleaning (2015-MMTS-11)				
13. Emergency Response and Spill Clean Up (2015-MMTS-12)				
14. Data Acquisition and Inventory Management (2015-MMTS-13)				
15. Mercury Vapor Monitoring System (2015-MMTS-14)				
16. Inspection, Testing and Maintenance (2015-MMTS-15)				
17. Fire Protection (2015-MMTS-16)				
18. Equipment Calibration (2015-MMTS-17)				
19. Security (2015-MMTS-18)				
20. Training (SOC.QP.EMP.HG.0002)				
21. Mercury Medical Surveillance (2015-MMTS-20)				
22. Decontaminating and Decommissioning (2015-MMTS-21)				
23. Personnel Notifications (2015-MMTS-22)				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

24. Operations Under Adverse Conditions (2015-MMTS-23)				
25. Diesel Generator Operations-Startup, Shutdown, Refueling, and Periodic Maintenance (2015-MMTS-24)				
26. Air Handling System — Startup, Shutdown, and Filter Replacement (2015-MMTS-25)				
27. Mercury Transfer from Mercury Drum (2015-MMTS-26)				
28. Defense National Stockpile Mercury Inventory Control (2015-MMTS-27)				
29. Forklift Maintenance – MAXIMO adequate?				
NOTES on Part III – Construction Verification & Readiness **CAPP Procedures** **1. Health & safety procedures – Items 3 - 29**				
2. **Safe Work Practices**[6] have been implemented or have been updated to reflect additions / modifications and are deemed adequate? Refer to key practices below:				

[6] Note: Confined space and line breaking do not apply to the Mercury Transfer Program

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

1. Lockout / Tagout (Chapter 21 of SOC.OHS.SP.0002)				
2. Hot Work (Chapter 10 of SOC.OHS.SP.0002)				

NOTES on Part III – Construction Verification & Readiness

CAPP Procedures

2. Safe Work Practices – Items 1 - 2

3. All other pertinent CAPP-mandated process safety policies, plans, procedures, & documents have been updated to reflect the additions / modifications & are deemed adequate?				
4. New or revised procedures have been provided and approved, if required?				
5. Special procedures for air monitoring methods, equipment maintenance, etc. have been provided?				

NOTES on Part III – Construction Verification & Readiness

CAPP Procedures
2. Safe Work Practices – Items 3-5

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

6. Required approvals & approval signatures on procedures have been obtained and uploaded to the DLA Strategic Materials ESOHMS website IAmTheKey and the SOC Environmental Management site?				
7. Maintenance list for new safety relief devices has been updated to reflect additions or deletions, if applicable?				
8. Special procedures for commissioning or first-time start-up have been provided and reviewed, if applicable?				
9. Operating procedure requirements (refer to Mercury Transfer Program Mechanical Integrity Procedure) have been checked and verified to match / correlate with input into MAXIMO (or equivalent)?				

NOTES on Part III – Construction Verification & Readiness

CAPP Procedures
2. Safe Work Practices – Items 6-9

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part IV – Physical Process Initial Installation or Modifications

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary Review)	Verified By:
1. Components have been installed in correct orientation (flow direction, top/bottom, etc.)?				
2. All required tests, non-destructive evaluation, chemical treatment, &/or decontamination have been completed?				
3. Installed components have been configured correctly for start-up, e.g. open / closed, enabled / disabled, on / off.				
4. Connections (fittings, bolts, welds, etc.) are completed correctly?				
5. Marking and labeling (substance and physical state) have been completed and are accurate?				

NOTES on Part IV – Physical Process Initial Installation or Modifications – Items 1-5

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part V – Temperature and Reactions

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary Review)	Verified By:
1. Personnel have been adequately protected from contact with cold and hot surfaces?				
2. The potential for instrument failure has been adequately addressed?				
NOTES on Part V – Temperature and Reactions – Items 1-2				
3. The potential for refrigerant leaks into or out of the process has been adequately addressed?				
4. The potential for operating error has been adequately addressed?				
5. The potential for loss of utilities has been adequately addressed?				
NOTES on Part V – Temperature and Reactions – Items 3-5				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part VI – Tubing and Vessels

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary Review)	Verified By:
1. A line-by-line review has been conducted to ensure the tubing is installed as specified?				
2. Tubing has been laid out in a straight forward manner such that potential for confusion is minimized?				
3. Tubing has been located and restrained such that it cannot slip or fall during clean-up, start-up, or shutdown?				
4. Electrical continuity and grounding have been provided and checked?				
5. Appropriate testing has been completed & documented to ensure integrity of new or revised tubing?				
6. Drawings have been revised to show "as built" condition?				
7. Materials of construction have been verified to ensure the correct materials were received & installed according to process specifications?				
8. Correct gaskets have been installed according to process specifications?				
9. Tubing system is adequately supported or braced?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

10. Vessels, instruments, & other components are adequately supported?				
11. Bolts are torqued correctly?				

NOTES on Part VI – Process and Vessels – Items 6-11

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part VII –Mechanical Equipment

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary Review)	Verified By:
1. Special precautions for safe operations have been adequately specified?				
2. If new lubricants or fluids have been introduced, MSDSs have been provided?				
3. Adequate provisions exist for isolation and lockout of equipment to perform maintenance?				
4. Inspection, testing, & preventive maintenance for mechanical equipment provisions have been made and documentation of such is adequate?				
5. Capacities of lifting equipment are clearly displayed and visible to operators?				
6. Refrigerants, lubricants, and seal fluids have been charged correctly?				

NOTES on Part VII –Mechanical Equipment – Items 3-6

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part VIII – Controllers and Alarm Systems

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary review)	Verified By:
1. Potential for interaction with existing controls has been reviewed and addressed?				
2. Alarms are provided where necessary?				
NOTES on Part VIII – Controllers and Alarm Systems – Items 1-2				
3. Unnecessary alarms have been avoided?				
4. Safeguards are provided to prevent the accidental tripping of switches?				
5. New instruments and alarms have been identified and designated as such in the inspection, testing and preventive maintenance programs?				
6. The operation of alarms has been verified?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

7. Alarm control panels are clean and preserved correctly?				
8. New alarm listing has been updated to reflect additions or deletions of alarms?				

NOTES on Part VIII – Controllers and Alarm Systems – Items 3-8

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part IX – Electrical Systems

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary review)	Verified By:
1. Start/stop switches and electrical switchgear have been labeled correctly?				
2. Electrical equipment can be isolated safely for repair work?				
3. Lockout provisions exist at both switchgear and start / stop switches?				
4. Electrical equipment is grounded correctly?				
5. Electrical equipment has been protected from corrosion?				
6. Electrical interlocks have been tested for safe operation?				

NOTES on Part IX – Electrical Systems – Items 1-6

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

7. Electrical drawings have been completed to reflect "as built" conditions?				
8. Electrical manuals have been filed correctly?				
9. Electrical guards have been installed?				
10. Indicator lights are operating correctly?				
11. Electrical test results have been reviewed and approved?				
12. All electrical equipment is consistent with electrical classification documentation?				

NOTES on Part IX – Electrical Systems – Items 7-12

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part X – Building Control Systems

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary review)	Verified By:
1. Ventilation, diking and curbing are adequate?				
2. Adequate provisions have been made for handling flasks, drums and metric ton containers?				
3. Spare equipment available?				
4. Doors, security systems operable / adequate?				
5. Inspections conducted / adequate?				
6. Inspection of the Noraplan® floor covering conducted for tears, bulges, cuts, and pulling away from doorways and walls?				

NOTES on Part X – Building Control Systems

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part XI – Training and Training Documentation

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary Review)	Verified By:
1. Training materials have been checked to ensure they contain adequate provisions for health exposure control, unit startup, components failure, shutdown, management of change and emergency response activities?				
2. All affected operations, maintenance, and supervisory personnel have been trained on revisions to procedures, and the training is deemed adequate?				
1. Operator training adequate and documented?				
2. Emergency response training adequate and documented?				
3. Preventative maintenance training adequate and documented?				

NOTES on Part XII – Training and Training Documentation – Items 1-3

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

3. CAPP overview (general awareness level) training adequate and documented?				
4. CAPP training records (syllabus, attendees, dates, etc.) and certification materials have been updated and on file?				
5. Training and equipment needs have been considered and purchased for this new or revised process?				
6. Manuals and process documentation have been updated?				
7. Manufacturer and vendor documentation on equipment has been filed correctly in the maintenance and operations areas?				
NOTES on Part XII- Training and Training Documentation- Items 3-7				
8. Mercury Transfer Program CAPP training program implemented and training has been completed, documented, and input into the training records system?				
1. Mercury Transfer Program CAPP Overview Training (classroom with test) complete and documented?				
2. Mercury Transfer Program Tier 1 Procedures training complete and documented?				
3. Mercury Transfer Program Tier 2 Procedures. Operational training complete and documented?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES on Part XII – Training and Training Documentation – Item 8

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part XII – Other Considerations

Action / Item / Task Review	Action / Item / Task Applicable to this PSSR? YES / NO	Action / Item / Task Compete? YES / NO	Date Reviewed (Preliminary review)	Verified By:
1. Equipment and process layout provides safe access for operation and maintenance?				
NOTES on Part XIII – Other Considerations – Item 1				
2. Appropriate materials of construction for mercury containment (including fume hoods, conveyor table, drums, metric ton containers, tubing and floor liner) are used with consideration of compatibility or corrosion?				
3. Adequate provisions for technical or supervisory support during initial operation have been made?				
4. Critical spare parts have been obtained?				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

NOTES on Part XIII – Other Considerations – Items 2-4

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Part XIV – PSSR Team Signatures/Dates:

Team Leader / Team Member (print)	Signature	Date

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

SUMMARY OF DEVIATIONS AND CORRECTIVE ACTIONS

Date of Review:

Members of Review Team:

Facility / Process Equipment: Mercury Transfer Program – Mobile Mercury Transfer System –

ITEMS THAT MUST BE RESOLVED/REPAIRED PRIOR TO START-UP

Item Description By Process Category (Findings) Description and Corrective Action (C/A)	Estimated Completion Date	Responsible Party	Final Completion Date*
Process Safety and System Readiness (Part II)			
Construction Verification & Readiness; Physical Process Initial Installation or Modifications; Temperature and Reactions(Parts III. IV. V)			
Tubing and Vessels (Part VI)			

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Mechanical Equipment (Part VII)			
Control Systems (Parts VIII and X) [Controllers and Alarm Systems and Building Control Systems]			
Electrical Systems (Part IX)			
Personnel Safety, Review and Fire Protection (Part XI)			
Training and Training Documentation (Part XII)			
Other Considerations (Part XIII)			

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

*Verification of final completion date by DLA Strategic Materials Safety Manager and SOC Environmental Manager is required.

ITEMS THAT MUST BE RESOLVED/REPAIRED AFTER START-UP

Item Description By Process Category	Description and Corrective Action (C/A)	Estimated Completion Date	Responsible Party	Final Completion Date*
Process Safety and System Overall Readiness (Part II)				
Construction and System Design (Parts III, IV, V)				
Tubing and Vessels (Part VI)				
Mechanical Equipment (Part VII)				
Control Systems (Parts VIII, X)				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

Electrical Systems (Part IX)				
Personnel Safety, Review and Fire Protection (Part XI)				
Training and Training Documentation (Part XII)				
Other Considerations (Part XIII)				
*Verification of final completion date by DLA Strategic Materials Safety Manager and SOC Environmental Manager is required.				

IT IS THE USERS RESPONSIBILITY TO ENSURE, PRIOR TO USE, THE REVISION OF THIS DOCUMENT IS THE LATEST AVAILABLE. CHECK THE MASTER LIST, IF UNSURE OF DOCUMENT STATUS, PRIOR TO USE. DOWNLOADED, PRINTED OR COPIED DOCUMENTS, UNLESS SUPPLIED AND SO INDICATED BY A DCA AS BEING A CONTROLLED DOCUMENT, ARE UNCONTROLLED

CONFIRMATION SIGNATURES THAT REQUIRED REVIEWS HAVE BEEN PERFORMED	
Base Operations DCA:	Date:
Manager, Environmental Services:	Date:
Defense Logistics Agency Program Manager:	Date:
DLA Hawthorne Site Supervisor:	Date:
HWAD Government Environmental:	Date: