CCP-TP-140

Revision 7

CCP
Equipment Maintenance

EFFECTIVE DATE: 09/20/2010

Larry Porter

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	09/15/2004	Initial issue.
1	03/18/2005	Revised to include preventive maintenance tables for TGS, GGTP and WAGS.
2	07/13/2005	Revised to incorporate Attachment 9, Nuclear Filter Technology (NFT) Headspace Gas (HSG) System Preventive Maintenance. Per the Tomographic Gamma Scanner (TGS) manufacturer's recommendations, revised Attachment 6, CCP Tomographic Gamma Scanner (TGS) Preventive Maintenance (PM) periodicity to “Monthly” for the following TGS Maintenance Items: CCP-TGS-001, CCP-TGS-002, CCP-TGS-003, and CCP-TGS-006.
3	09/12/2005	Revised to incorporate Attachment 10, MCS RTR#5 Preventive Maintenance (PM).
4	09/29/2006	Revised to incorporate Component Failure/Consumption and Downtime tracking as well as equipment Spare Parts Lists. Added Attachment 2, Component Failure/Consumption and Downtime Tracking, Attachment 3, Characterization Unit Spare Parts List, and Attachment 13, Characterization Unit Preventive Maintenance Schedule Form.
5	04/05/2007	Revised to incorporate folder on ftp site managing equipment Preventative Maintenance Schedules. Added additional steps to improve the flow of the procedure.
6	08/28/2009	Revised to combine Attachment 1, Preventive Maintenance (PM) Completion, and Attachment 2, Component Failure/Consumption and Downtime Tracking, into Attachment 1, Maintenance, Parts Consumption, and Downtime Tracking. Also, changed steps to improve the flow of the procedure.
7	09/20/2010	Revised to support resolution of CAR-INL-0008-09 for maintenance of Central Characterization Project (CCP) certification status. This includes using Host site documentation for Host site owned equipment under their programs. The CCP Certified Equipment List is referenced to define equipment CCP-TP-140 applies to: Make record handling and maintenance analysis reflect actual conditions and streamline the procedure. Plan and report maintenance on the same form. Report down time based on impact to operations.

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LIST OF ATTACHMENTS

1.0 PURPOSE

This procedure implements the requirements and processes for conducting maintenance on Central Characterization Project (CCP) equipment.

1.1 Procedure Scope

The procedure provides processes for maintaining equipment under Host site's work authorization processes to achieve the following objectives:

1.1.1 Minimize equipment failures by planning and performing Preventive Maintenance (PM) at an appropriate level. The process is identified in Section 4.1 and documented on Attachment 1, Planned Downtime Form.

1.1.2 When equipment failures occur, perform Corrective Maintenance (CM). Prior to making any change to equipment, review, document and approve the change as required in Section 4.2. This is required so the status and configuration of certified equipment can be managed by CCP. CM is documented on Attachment 2, Unplanned Downtime Form.

1.1.3 Minimize downtime when equipment failures occur by identifying spare parts to stock according to Section 4.3 and Attachment 3, Spare Parts.

1.1.4 Improve equipment availability by evaluating the effectiveness of PMs and spare parts stocks in Section 4.4. Identify ways to address CM trends and problem areas.

1.2 Applicable Equipment

This procedure applies to all equipment that is certified under the CCP Program to characterize waste for disposal at the Waste Isolation Pilot Plant (WIPP). Applicable equipment is identified on the CCP System and Process Certification Status List. The list is available on the "q.wipp.ftp" site and it includes:

- CCP-owned characterization equipment
- Subcontractor owned characterization equipment
- Host Site owned characterization equipment.

The procedure may also be used for maintenance of uncertified characterization equipment.

NOTE

In the event a Host Site Interface Work Agreement conflicts with this procedure, the agreement takes precedence.

2.0 REQUIREMENTS

2.1 References

Referenced Documents

- CCP-CM-001, *CCP Equipment Change Authorization and Documentation*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-026, *CCP Configuration Management Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-QP-015, *CCP Procurement*

2.2 Training Requirements

2.2.1 Prior to performing this procedure, personnel will be trained and qualified for their positions as CCP Operator, Lead Operator (LO), Vendor Project Manager (VPM), Subject Matter Expert (SME), Retrieval Characterization and Transportation (RCT) Engineer, and Facility Records Custodian. Qualified vendors will work under the supervision of qualified CCP personnel.

2.3 Definitions

2.3.1 **CCP Equipment Identified Numbers** – A unique Equipment Identification Number assigned by CCP to characterization equipment. The format is XXX-YYY-##:

[A] The first three letters (XXX) identify the process, such as Flammable Gas Analysis (FGA), Head Space Gas analysis (HSG), Non-Destructive Assay (NDA) and Non-Destructive Examination (NDE).

[B] The second group of letters identifies the type of equipment (YYY) i.e., Real-Time Radiography (RTR), High Efficiency Neutron Counter (HENC), etc.

[C] The last set of numbers is, a sequential number (##) assigned to each piece of equipment.

2.3.2 **CCP System and Process Certification Status List** – This list identifies equipment that is approved and certified (by U.S. Depart Of Energy [DOE]/Carlsbad Field Office [CBFO]) for characterization of waste to demonstrate it complies with requirements for disposal at (WIPP).

2.3.3 **Change to Equipment** – Any work on equipment used by CCP to characterize waste for disposal at WIPP:

[A] "Like-for-like" part replacement are screened

[B] "Equivalent" part replacement are screened

[C] Changes to operating parameters are screened

[D] All other part replacements, modifications and changes must be evaluated.

2.3.4 **CCP Configuration Management Program** – The configuration management process for CCP characterization equipment. This program is used to manage the configuration of Certified CCP Characterization Equipment. It is defined in CCP-PO-026, *CCP Configuration Management Plan,* and complies with applicable portions of DOE-STD-1073-2003. Implementing procedures include:

[A] CCP-CM-001, *CCP Equipment Change Authorization and Documentation,* review and approval of changes prior to making a modification.

[B] CCP-TP-140, *CCP Equipment Maintenance,* to ensure that CM and PM work conforms with the approved configuration.

2.3.5 **Bill of Material (BOM)** – A source for spare part information for Attachments 2 and 3. See equipment drawings for the BOM.

2.3.6 **Corrective Maintenance (CM)** – Repair of failed or malfunctioning equipment, systems, or facilities to restore the intended function or design condition. This maintenance does not result in a significant extension of the equipment's, system's, or facility's useful life.

2.3.7 **Downtime** – The amount of scheduled work time, rounded to the nearest hour, that the unit was not used due to maintenance activities and/or malfunction. Exclude time when the only reason the unit is not used is because operators are not available or the

equipment is not needed from reported downtime. There are two types of downtime: Planned and Unplanned Downtime.

[A] Planned Downtime is time during the normal operating schedule that is used to perform PM, planned inspections, and training.

[B] Unplanned Downtime is time during the normal operating schedule that the unit was **NOT** used due to a force majeure (FM), CM, or a malfunction that prevented use.

2.3.8 **Force Majeure (FM)** – An event that prevents use of equipment that is otherwise operable, t including extreme weather, such as lightning and flooding, as well as grid fluctuations or other power quality issues.

2.3.9 **Preventive Maintenance (PM)** – Includes all planned, systematic, and periodic maintenance actions taken to prevent equipment failure, maintain designed-in operating conditions, and extend equipment operating life.

2.4 Precautions and Limitations

2.4.1 PMs and CMs will be authorized and conducted in accordance with the Host site's work authorization process. Required safety precautions and personal protective equipment (PPE) will be defined in the Host site's work authorization documentation.

2.4.2 All CCP personnel performing maintenance items addressed by this procedure will be qualified on the associated system/unit.

2.4.3 Subcontractor or Host site personnel performing maintenance items addressed by this procedure for CCP will be accompanied by a CCP-qualified operator at all times when maintenance items are being performed.

2.4.4 Workers who will be working in a radiation area must have read and signed that they understand the current Radiation Work Permit (RWP) or Approved Method of Work (AMOW).

3.0 RESPONSIBILITIES

NOTE

The title CCP LO throughout this procedure refers to those individuals designated by the VPM.

However, the CCP Operator and CCP LO may be the same individual or separate persons. Responsibilities identified in the procedure for CCP Operator may be performed by the CCP LO.

3.1 CCP Operator

3.1.1 Conducts maintenance requirements as identified in this procedure.

3.1.2 Performs maintenance as directed in the Host site's work authorization documents.

NOTE

All planned and unplanned downtime, as defined in Section 2.3 must be logged using:

Attachment 1 for planned down time. Attachment 2 for unplanned downtime. Other logs as required by CCP-PO-005, *CCP Conduct of Operations*.

3.1.3 Documents performance of all maintenance, parts consumption, and downtime on Attachment 1 for PMs and Attachment 2 for CMs.

3.2 CCP Lead Operator (LO)

3.2.1 Identifies PM requirements and spare parts lists based on the manufacturer's recommendations, Host site Work Authorization Document, CCP Procedures, best operating practices, and Host site engineer's input. Works with VPM to plan maintenance and spare parts stocks. Prepares Attachments 1, 2, and 3 and submits them to Facility Records Custodian.

3.3 Vendor Project Manager (VPM)

3.3.1 Notifies the Host site Subcontract Technical Representative (STR) of the need to conduct corrective or preventative maintenance on the characterization units and coordinates Host site work authorizations, as required.

3.3.2 Verifies that changes to the as-delivered configuration of the characterization unit are not planned as part of the corrective or preventative maintenance, unless specific approvals are obtained as required in CCP-PO-005, CCP-CM-001, and the applicable CCP/Host site interface document.

3.3.3 Reviews Attachment 1 for changes to CCP Equipment PM Schedules and Attachment 3 for changes to recommended spare parts prior to submission tothe RCT Engineer.

3.3.4 Notifies the Host site STR of changes to the CCP Equipment PM Schedules and Spare Part Lists.

3.4 Subject Matter Expert (SME)

3.4.1 Provides guidance and recommendations, as requested/required on maintenance activities within their respective area of expertise.

3.5 RCT Engineer

3.5.1 Reviews Attachment(s) 1, 2, and/or 3 submittals and provides feedback to originators on completeness, accuracy and compliance with this procedure.

3.5.2 Updates and maintains CCP Equipment PM Schedules and CCP Equipment Spare Parts Lists on the CCP "q.wipp.ftp" site.

3.5.3 Reviews Attachment(s) 1, 2 and/or 3 for indications and trends. Obtains input from LO's SMEs, VPMs, and others on problems and on ways to improve equipment availability. Makes recommendations on PM planning, spare part inventories and equipment modifications.

3.6 Host Site Subcontract Technical Representative (STR)/Designee

3.6.1 Works with the Host site and VPM to obtain the Host site's work authorization document.

3.6.2 Reviews and processes equipment change authorizations (ECAs) and other evaluations to support maintenance.

3.7 Facility Records Custodian

3.7.1 Receives and transmits all records generated by this procedure in accordance with CCP-QP-008, *CCP Records Management*.

4.0 PROCEDURE

NOTE

The CCP Operator and CCP LO may be the same individual or separate persons, depending on the site staffing. Therefore, the steps identified in the procedure for CCP Operator may be performed by the CCP LO.

4.1 Preventive Maintenance (PM)

NOTE

Section 4.1.1 directs the user to identify PM procedures and periodicity in Section A of Attachment 1, "PM Requirements."

Section 4.1.2 directs the user to document performance of PMs in Section B of Attachment 1, "PM Performance."

This section and Attachment 1 are optional for Host Site owned equipment that is controlled under the Host Site's work control process. See the CCP System and Process Certification Status List for clarification on applicability of this section of the procedure.

4.1.1 Initiating Section A of Attachment 1 with PM Schedules

CCP LO

[A] Identify PM requirements for each piece of CCP characterization equipment on site. Consult the operation and maintenance manuals, manufacturer's recommendations and other sources for maintenance operations and for periodicity. Use a separate Attachment 1 with as many sheets as needed for each piece of equipment.

[B] Submit Attachment 1s with Section A completed to the RCT Engineer.

RCT Engineer

[C] Review Attachment 1s to verify required fields in Section A, PM Requirements are complete. Resolve any issues with the initiator. Post PM Schedules in the site's folder on the q.wipp.ws/CCP Equipment PM Schedules.

[D] Notify the appropriate VPM that updated PM Requirements have been posted on the q.wipp.ws site.

4.1.2 Performing PMs and Completing Attachment 1

NOTE

The LO is responsible for ensuring that PMs are performed in the required periodicity. Scheduling flexibility is provided by allowing PMs to be performed within ±25 percent of the due date.

If this range is exceeded, the CCP LO is required to initiate a Nonconformance Report (NCR) per CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

If a PM involves replacing a part, go to Section 4.2.2 and initiate Attachment 2.

CCP Operator/LO

[A] Monitor PM requirements in Section A of Attachment 1 for each piece of equipment. Inform the VPM or others of upcoming PMs in time to schedule the work before PM due date.

VPM

[B] Coordinate with the Host site STR to plan the PM and obtain the Host site's work authorization document, if required.

CCP LO

[C] If vendor servicing is required, obtain the services per CCP-QP-015, *CCP Procurement* and if Measuring and Test Equipment (M&TE) is required, obtain it from the authorized source.

[D] When vendor service, M&TE, and Host site work authorization is obtained (as applicable), coordinate with the VPM to schedule the PM. Coordinate any necessary support, such as RCT, RWP, etc.

CCP Operator/LO

NOTE

A qualified CCP Operator will accompany subcontract vendors during the performance of PM on CCP equipment.

[E] Perform the scheduled PM item(s) in accordance with the specified work instructions.

[F] **WHEN** the PM item is complete,
THEN conduct post-maintenance operational testing, as required, and document completion of the PM with test results in the Operations Logbook in accordance with CCP-PO-005, *CCP Conduct of Operations*.

[G] **IF** the post-maintenance test is **NOT** successful,
THEN perform the following:

(a) Notify the CCP LO. Notify the VPM to determine if the scope of the work document allows for further trouble shooting.

(b) Determine the reason for the unsuccessful test and repeat steps [B] through [G]. Arrange to revise the work document as necessary.

[H] If post-maintenance test is successful,

(a) Notify the CCP LO and VPM that the equipment is operable.

(b) Schedule the next PM.

(c) Document completion of PMs in Section B of Attachment 1. Include comments on the effectiveness of PMs and identify conditions or trends that should be addressed (including causes, conditions and suggestions) in Block B.2.

(d) When Section B is completed, submit it to the Facility Records Custodian. Completed Attachment 1s should be transmitted to records within 1 week of the time work was completed.

Facility Records Custodian

[I] Receive, process, and maintain Attachment 1s with Section B completed in accordance with CCP-QP-008.

RCT Engineer

[J] Review Attachment 1s to verify required fields in Section B, PM Performance are completed. Resolve any issues with the LO. Verify that completed Attachment 1s are posted on the "CCPPDF Dixon server" site.

4.2 Corrective Maintenance (CM)

NOTE

This section documents CMs, FM events, part usage and time out of service on Attachment 2. It also documents that all changes are identified and reviewed per CCP-CM-001 or Host Sites processes before implementation. This includes parts installed and any changes made during CM (and PM activities).

Host Site owned equipment is typically controlled under the Host site's configuration management and work control processes.

CCP Operator/LO

4.2.1 If the need for CM is identified, inform the VPM. CM is required if:

[A] The unit or an integral component is not functioning.

[B] The unit is functional, but is operating outside of allowable tolerances.

[C] The unit is functional, but gauges, noises, alarms, etc., indicate an abnormal condition exists.

4.2.2 Initiate Attachment 2 and provide the required information.

4.2.3 **IF** the CM involves replacing a part or making a change, **THEN** perform the appropriate evaluation (CCP-CM-001 or Host Site process) prior to making the change.

VPM

4.2.4 **WHEN** the evaluation is processed,
THEN coordinate with the Host site STR to generate and obtain the Host site's work authorization document.

CCP LO

4.2.5 Obtain the required replacement part(s) and vendor servicing if needed in accordance with CCP-QP-015, or the Host site procurement process.

NOTE

Prior to any "like-for-like" replacement, perform required screening per CCP-CM-001. Prior to installing any non-like-for-like parts, the change shall be screened and/or processed in accordance with CCP-CM-001.

4.2.6 When the replacement parts, vendor service and any M&TE are available, schedule any necessary support, such as RCT, required by the Host site Authorization Document, RWP, or CCP procedure through the VPM.

CCP Operator/LO

NOTE

A qualified CCP Operator will accompany subcontract vendors during the performance of CM on CCP equipment.

4.2.7 Perform the CM in accordance with the approved Host site's work authorization document.

4.2.8 **WHEN** the CM is complete,
THEN conduct post-maintenance equipment testing using one of the following:

[A] Operationally test the equipment using the approved CCP operating procedure.

[B] Conduct specific testing approved in the Host site's work authorization document.

4.2.9 Enter the completion of the CM and the post-maintenance test results in the Operational Logbook in accordance with CCP-PO-005.

4.2.10 **IF** the post-maintenance equipment test is **NOT** successful,
THEN perform the following:

[A] Notify the CCP LO and the VPM.

[B] Notify the VPM to determine if the scope of the work document allows for further trouble shooting, revise work document as necessary.

[C] Determine the reason for the unsuccessful test.

[D] Repeat steps 4.2.1through 4.2.10.

4.2.11 **IF** the post-maintenance equipment test is successful,
THEN notify the CCP LO and the VPM that the equipment is operational.

4.2.12 Complete and forward Attachment 2 to the CCP LO. Use a separate sheet for each Downtime event and use as many sheets as needed to list parts, etc. Include any comments or recommendations in Block E. Identify conditions or trends that should be addressed, such as impactive and recurring conditions. Include causes, associated conditions and suggestions for improvement. Completed Attachment 2s should be transmitted to records within one week of the time work was completed.

CCP LO

4.2.13 Review and complete Attachment 2. If downtime associated with the CM significantly impacted operations or if it is a recurring condition inform the RCT Engineer.

4.2.14 Submit completed Attachment 2 to the Facility Records Custodian.

Facility Records Custodian

4.2.15 Receive process, and maintain Attachment 2s in accordance with CCP-QP-008.

RCT Engineer

4.2.16 Review the Attachment 2s to verify required fields are completed. Resolve any issues with the LO and verify that completed Attachment 2s are posted on the CCPPDF Dixon server.

4.3 Spare Parts

Recommendations on stocking Spare Parts are identified on Attachment 3. Maintaining a stock of spare parts is recommended, not mandatory.

Attachment 3 should be prepared on manufacturer's recommendations, failure history, availability and obsolescence. Spaces are provided for part locations and for identifying alternate parts. If use of an alternate part is screened and/or approved, reference the screening/approving document and attach it.

If Host Site owned equipment is controlled under the Host Site's Configuration Management processes, this section is optional.

CCP LO

4.3.1 Prepare Attachment 3 to recommend spare parts for each piece of characterization equipment. Indicate any mandatory spare parts as required in Attachment 3.

VPM

4.3.2 Review, process and forward Attachment 3 to the Facility Records Custodian.

Facility Records Custodian

4.3.3 Receive, process, and maintain Attachment 3 in accordance with CCP-QP-008.

RCT Engineer

4.3.4 After reviewing Attachment 3 for completeness, update the CCPPDF Dixon server with the new Spare Parts list.

4.3.5 Notify the appropriate VPM when updates to the CCP Equipment Spare Parts List are posted.

4.4 Maintenance

Attachments 1, 2 and 3 provide data on PMs, CMs, and part consumption. On and annual or more frequent basis obtain input on PM effectiveness from Operators, SMEs and others to identify conditions and trends that can impact operations. RCT Engineers review this information and identify trends such as repetitive failures, systemic defects, increased downtime, increased downtime frequency, and calibration issues. The also research causes, common occurrences in similar equipment and ways to reduce impacts. Based on what they find, they recommend maintenance improvements, new procedures, protective equipment (such as Uninturruptable Power Supplies [UPS], and power conditioners, or lightning protection) changes to spare part stocks or equipment modifications to improve availability.

RCT Engineer

4.4.1 Based on availability history and importance of the unit to characterization operations, prioritize characterization equipment for evaluation of maintenance records.

4.4.2 Based on priority, review Attachment 1s to verify PMs identified in Section A are shown to be performed in Section B.

4.4.3 Review Attachment 2s for conditions impactive to operations. Identify trends where downtime increased and recommend ways to improve availability to Operators, LO's and SMEs.

4.4.4 Review Attachment 3s for cases where lack of spare parts resulted in significant downtime.

4.4.5 Compare PM, CM and Spare Parts for similar types of equipment for frequency and types of maintenance. Identify changes for individual pieces of equipment that could reduce downtime. Discuss the changes with Operators, LO's and SMEs.

LO's and SME's

4.4.6 Provide input to RCT Engineer evaluations and recommendations, including equipment operating conditions (such as hours and days per week operated), environmental factors (if exposed to the outdoor elements) and spare part availability. Recommend ways to improve equipment availability (such as additional maintenance, stocking more spare parts, protection from the weather, modifications, etc.).

RCT Engineer

4.4.7 Work with LO's, SME's and management to evaluate recommendations and obtain direction on proposed improvements.

4.4.8 Initiate changes to Attachment 1s, Attachment 3s and ECAs as applicable to implement improvements as directed.

5.0 RECORDS

5.1 Records generated during the performance of this procedure are maintained as quality assurance (QA) records in accordance with CCP-QP-008, *CCP Records Management*. The records are as follows:

5.1.1 QA/Non Permanent

[A] Attachment 1, Planned Downtime Form

[B] Attachment 2, Unplanned Downtime Form

[C] Attachment 3, Spare Parts

[D] Configuration Management Equipment List Module

Attachment 1 – Planned Downtime Form

CCP Equipment I.D. Number: _____ - _____ - _____ **Operating Schedule:** _____/_____ **Production Rate:** _____
Process Equipment Type Unit No. Hours per Day/Days per Week Drums per Day

Initiate Attachment 1 per Section 4.1 of the procedure to identify Planned Maintenance (PM) in Section A Before performing PMs. Document when PMs are performed in Section B. Use a separate sheet for each piece of equipment, N/A blank spaces and use as many sheets as needed to list all PMs.
If parts other than consumables (filters, wire ties, etc.), are used during a PM, record them on Attachment 2 per Section 4.2 of CCP-TP-140.

Section A: PM REQUIREMENTS

A.1 Section A.1 - Identify the PM procedure No. and description.

A.2 Section A.2 - Identify the affected component or subsystem and the PM frequency (monthly, quarterly, annual, etc.) and the months the PM is due.

When Blocks A.1 and A.2 are completed, initial and date below and submit to Records. Records will forward it to the RCT Engineer who will check it and post it on the "q.wipp.ftp" site for use when PMs are performed.

Initiator/LO Initials: _____ Date: _____/_____/_____

RCT Engineer Initials: _____ Date: _____/_____/_____

VPM Initials: _____ Date: _____/_____/_____

Section B: PM PERFORMANCE

Before performing a PM, print the form for the applicable piece of equipment with Section A filled in from the "q.wipp.ws" site. Complete Section B. per Section 4.1.2. of the procedure.

B.1 Record the date the PM was started and person performing maintenance.

B.2 Identify the Host Site Work Order Number and provide any comments or recommendations.

B.3 Record the date the unit was returned to service print name, sign, and date, send to Records.

A.1 PM Procedure No. and Procedure Description:	A.2 Component or Subsystem, PM Frequency/Month(s) Due:	B.1 Date PM Started, Performed by:	B.2 Host Site Work Order No. and Any Comments or Additional Information:	B.3 Date Returned to Service, LO Initials:

Print Name_____**Signature**_____**Date**_____ **RCT Engineer Initials: _____ Date: _____/_____/_____** **Page __ of __**

Attachment 2 – Unplanned Downtime Form

CCP Equipment I.D. Number: _____ (Process) - _____ (Equipment Type) - _____ (Unit No.) **Operating Schedule:** _____ (Hours per Day) / _____ (Days per Week) **Downtime :** _____ (Hours)

Initiate Attachment 2 per Procedure Section 4.2. to document Unplanned Downtime, CM or FM events, with a separate sheet for each event (or to document parts used during PMs). Use as many forms as necessary to list parts used and reference CCP ECAs or attach Host Site documentation as required for supporting information.

A. **Block A - Record when the Unplanned Downtime event started (when use of the equipment stopped because of the problem, CM or FM event) and initial.**
B. **Block B - Document the problem and cause (if known), and the failed system/components. If operations could continue until PM started, note any operational limitations.**
C. **Identify the manufacturer, manufacturer's part No., description, rating or capacity of the old part, and the equipment drawing and BOM item No. where the old part is identified.**
D. **If the new part is not a Like-for-Like replacement, identify the manufacturer, manufacturer's part No., description, rating or capacity and attach cut sheets and other information.**
E. **If the new part is not a Like-for-Like replacement, identify where screening or review and authorization is documented. Attach Host site documentation for the new part.**
F. **Document completion of the Unplanned Downtime event when the equipment is satisfactorily tested and returned to service in Block F.**
G. **When the attachment 2(s) is complete, submit it to Records. Records will forward them to the RCT Engineer.**

A.	**Downtime Started - Date: ____/____/____** **Time on 24 hour Clock: _____** **Initiator's Initials: _____**	**B. Describe Problem, Failure, or FM Event:** **Affected Components or Subsystem:** **Impact to Operations:**	
Parts Req'd	**C. Old Part Manufacturer, Part No., Description, Rating/Capacity and Drawing/BOM Reference:**	**D. New Part Manufacturer, Part No., Description and Rating/Capacity:**	**E. Document Authorizing Use of Part – CCP ECA No. or Host Site CM Document and Work Package No.:**
1			
2			
3			
4			
F.	**Date Back In Service:_____/_____/_____**	**LO Print Name:** **_____**	**LO Signature: _____** **Date:** **Time on 24 Hr Clock:_____** **_____**

☐ **Check Box if PM was performed during this Downtime. RCT Engineer Initials: _____ Date: _____/_____/_____ Page __ of __**

Attachment 3 – Spare Parts

CCP Equipment I.D. Number: _____ - _____ - _____ **Operating Schedule:** _____/_____ **Production Rate:** _____
Process s Equipment Type Unit No. Hours per Day 7 Days per Week Drums per Day

Attachment 3 documents recommended, required and in-stock spare parts per Section 4.3 of the procedure.
Use a separate sheet for each piece of characterization equipment and use as many sheets as necessary to list spare parts.
When spare parts are not Like-for-Like replacements, attach documentation that authorizes the equivalent/alternate part when available for future use.
A. Block A - Identify the spare part manufacturer, manufacturer's part No., description rating or capacity. Attach cut sheets or other documentation when available.
B. Block B – Identify the equipment subsystem/component where the spare part is used and include the equipment drawing and BOM item No. where the part is identified if available. Identify any other characterization equipment known to use the same spare part.
C. Indicate in Block C whether it is Recommended or Mandatory (R/M) to stock the spare part, procurement lead time and if it is stocked, the location, stock No. and the required quantity.
D. Complete Block D when a non Like-for-Like spare part has been screened or reviewed and authorized. Attach the CCP ECA or Host site evaluation and supporting documentation. When the attachment 3(s) are complete, submit them to Records. Records will forward them to the RCT Engineer.

Item No.	A. Part Manufacturer, Part No., Description, Rating/Capacity:	B. Equipment Subsystem/Component, Equip. Drawing/BOM Reference:	C. R/M, Lead Time, Location/Stock No.:	D. If not Like-for-Like, Old Part Mfgr./Part No., Document Authorizing Use-ECA/Host Site CM:
1				
2				
3				
4				
5				
6				
7				

Initiator/LO Print Name: _____ **LO Signature:** _____ **Date:**_____/_____/_____ **Page __ of __**
RCT Engineer Initials: _____ **Date:** _____/_____/_____ **VPM Initials:** _____ **Date:** _____/_____/__