

CCP-PO-026

Revision 3

CCP Configuration Management

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APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	04/24/2006	Initial issue.
1	11/10/2008	Revised to include a reference to Central Characterization Project's (CCP's) equipment descriptions (CCP-CM-XXX) and to clearly present CCP's Configuration Management (CM) program and the interface between CCP and the Host site regarding the Unreviewed Safety Question (USQ) process.
2	12/29/2010	Minor revision to update references to the <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i> .
3	02/24/2011	Revised to develop a procedural link to clarify how the initial design of equipment used to support Central Characterization Project (CCP) is controlled/verified per MA-CCP-0010-10.

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1.0 PURPOSE

The purpose of this document is to describe the Central Characterization Project (CCP) Configuration Management (CM) Plan for CCP's Mobile Characterization Units (MCU) equipment.

1.1 Scope

The scope of this document is to describe CCP responsibilities and the documents to support CM. The objectives of CM are to establish consistency among design requirements, physical configuration, and documentation (including analysis, drawings, and procedures) for an activity, and maintain this consistency throughout the life of the facility or activity, particularly as changes are made.

This process applies to CCP-owned equipment and vendor-owned equipment used within CCP's program. The physical configuration of systems, structures and components (SSCs) should conform to specified and documented design requirements. The MCU documentation provided by the vendors which includes design basis, system design descriptions, design and vendor drawings, as-built drawings, and operations and maintenance procedures should reflect the design requirements and physical configuration. Changes to the design requirements should be reflected in the physical configuration and the documentation. CCP Equipment Descriptions are among those designated as CCP-CM-XXX and are documents controlled by CCP-QP-010, *CCP Document Preparation, Approval and Control*, that collect and store the MCU information provided by the vendors. Changes to the design will be reflected in the equipment descriptions.

The essential configuration management elements as identified in U.S. Department of Energy (DOE)-Standard (STD)-1073-2003, *Configuration Management*, are as follows:

- Design Requirements - establishes and maintains SSC design requirements and associated design basis.
- Work Control – an administrative process by which work activities are identified, initiated, planned, scheduled, coordinated, performed, approved, validated, and reviewed for accuracy and completeness, and documented.
- Change Control - maintains consistency among design requirements, physical configuration, and facility documentation as changes are made. Changes are evaluated against design basis, design requirements, national and industry standards, regulatory requirements and DOE Orders.

- Document Control – identifies and maintains documents within the CM program consistent with physical configuration and design requirements.
- Assessments - measures the extent to which configuration management elements are effective.

This plan delineates the use of configuration management and defines the key roles and responsibilities through project management. Project management directs and monitors the development and implementation of the CM Plan.

These programs are one-time efforts and not considered repetitive over the life-cycle of the MCU.

2.0 REQUIREMENTS

2.1 References

Referenced Documents

- 10 Code of Federal Regulations (CFR) 830, *Nuclear Safety Management*
- DOE 5480.19, *Conduct of Operations Requirements for DOE Facilities.*
- DOE O 414.1C, *Quality Assurance*
- DOE O 420.1B, *Facility Safety*
- DOE-STD-1073-2003, *Configuration Management*
- DOE/WIPP 01-3187, *Quality Assurance Program Plan for TRUPACT-II Gas Generation Test Program*
- DOE/WIPP 06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*
- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*
- DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*
- U. S. Department of Energy, *Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)*, Carlsbad Field Office, Carlsbad, NM

- *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Attachments C-C6, Waste Analysis Plan*
- *CCP-CM-001, CCP Equipment Change Authorization and Documentation*
- *CCP-CM-031, Verification of Designs Produced by External Agencies*
- *CCP-QP-001, CCP Graded Approach*
- *CCP-QP-010, CCP Document Preparation, Approval and Control*
- *CCP-QP-015, CCP Procurement*

3.0 PROGRAM MANAGEMENT

3.1 Scope of CM SSCs

3.1.1 Each MCU, whether CCP or vendor owned is considered a CM SSC under CCP's CM plan. The CCP MCU's are included in the applicable Host site's Documented Safety Analysis (DSA) and may also be addressed in other Host site programs/documents. Certain pieces of CCP's equipment may be designated as Safety Class or Safety Significant under the applicable Host site's DSA. All other equipment used in support of the characterization process (compressors, filters, power tools, etc.) will be evaluated using a graded approach to determine the applicability and level of configuration controls. Design control, work control, and level of maintenance programs applied to SSCs are dependent on factors such as design classification, associated hazard, importance to safety and environmental protection, regulatory requirements, and cost effectiveness while meeting the CCP mission.

3.2 CM Criteria

3.2.1 All MCUs, whether CCP or CCP vendor-owned, are under CCP's CM program.

3.2.2 Characterization equipment owned by the Host site, will be controlled under the Host site's CM program and not controlled under CCP's CM program. The Host site will notify CCP prior to making any changes to equipment that could affect CCP's program.

3.2.3 Items under CCP's CM program are uniquely numbered and listed in the CCP Equipment Database, which is controlled by the CCP Configuration Management Coordinator (CMC). The unique equipment number may be referenced on controlled site documents such as work orders; maintenance, operating, and calibration procedures; engineering drawings; specifications; and engineering design change control documents.

3.3 Primary Order Interfaces

3.3.1 CM activities such as design change control, drawing and document change control, and assessments support DOE program implementation through the following:

- [A] CM provides mechanisms to maintain facility safety requirements related to nuclear safety design, criticality

safety, fire protection and natural phenomena hazards mitigation as required in DOE O 420.1B, *Facility Safety*.

- [B] CM provides for SSC identification and labeling, and provides for control of design and facility information that is important to operation as required by DOE 5480.19, *Conduct of Operations Requirements for DOE Facilities*, and 10 CFR 830.122, *Quality Assurance Criteria*.
- [C] CM provides change control mechanisms that identify and review changes to the design, physical configuration or facility documentation as required by DOE O 414.1.
- [D] CM provides the design basis documents and configuration control mechanisms needed to support the Quality Assurance and Safety Basis activities and requirements as set forth in 10 CFR 830, *Nuclear Safety Management*.

3.4 Organizational Responsibilities and Interfaces

3.4.1 CM is integral to a culture of safety and in meeting CCP's performance objectives. Responsibilities for the CM of CCP-owned and vendor-owned equipment apply to each employee and subcontractor.

3.4.2 The CCP organization is unique in that its activities take place on multiple Host sites of different types and hazard categories and for widely varying time frames.

3.4.3 CCP utilizes the Host sites, subcontractors, equipment vendors, and outside consultants for support.

3.4.4 CCP's area of expertise is in the characterization and transportation activities related to the following documents:

- [A] DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*
- [B] U. S. Department of Energy, *Contact Handled Transuranic Waste Authorized Methods for Payload Control* (CH-TRAMPAC), Carlsbad Field Office, Carlsbad, NM
- [C] *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Attachments C-C6, Waste Analysis Plan*

- [D] DOE/WIPP 06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*
- [E] DOE/WIPP 01-3187, *Quality Assurance Program Plan for TRUPACT-II Gas Generation Test Program*
- [F] DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*

3.4.5 Any work outside of these areas may require CCP to draw expertise from other organizations located at either the Waste Isolation Pilot Plant (WIPP) site or elsewhere. Areas that may require outside support include but are not limited to the following:

- [A] Engineering
- [B] Environment, Safety and Health
- [C] Quality Assurance
- [D] Industrial Safety
- [E] Radiation Safety
- [F] Nuclear Safety
- [G] Operations
- [H] Fire Protection
- [I] Procurement
- [J] Industrial Hygiene
- [K] Emergency Management

3.4.6 CCP personnel must have an in-depth knowledge of the Host site's processes and procedures.

3.4.7 All CM activities are coordinated through the Engineering group and facilitated by a CM Engineer (CME) and a CMC. The following list defines the responsibilities and the interfaces:

- [A] The Engineering group maintains responsibility for CM by the following:

- [A.1] Facilitates the review of proposed equipment changes for operational impact and, as applicable, assists the overall CCP organization and Host site in incorporating those changes into operations, calibration, and maintenance procedures.
- [A.2] Coordinates equipment changes through CCP-CM-001, *CCP Equipment Change Authorization and Documentation*.
- [A.3] Facilitates equipment procurements including designs, refurbishments, etc., in accordance with CCP-QP-015, *CCP Procurement*.
- [A.4] Coordinates design verifications of CCP equipment in accordance with CCP-CM-031, *Verification of Designs Produced by External Agencies*.
- [A.5] Provides a graded approach to the level of review and approval per CCP-QP-001, *CCP Graded Approach* required for proposed changes or new designs.
- [A.6] Coordinates the evaluation of new characterization equipment designs and design changes for compliance with applicable safety and environmental regulations including Occupational Safety and Health Administration (OSHA), Fire Protection Code, National Environmental Policy Act (NEPA), and as low as reasonably achievable (ALARA). Coordinates design verifications of CCP SSCs based on aspects which include but are not limited to design class and radiological control, DSA, industry codes and standards, applicable DOE Orders, Occupational Safety and Health Act (OSHA), and compliance issues such as Resource Conservation and Recovery Act (RCRA) permit requirements, and National Environmental Policy Act (NEPA).
- [A.7] Oversees the compliance of CCP operations with CM change procedures, both on CCP-owned and vendor-owned equipment through the use of assessments and surveillances.
- [A.8] Coordinates the identification of startup and post modification testing requirements.

[A.9] Interfaces with CCP's Quality Assurance and Procurement departments in managing the configuration of new equipment and the refurbishment of existing equipment.

[A.10] Maintains a complete database of documents deemed necessary for a CM Program.

3.5 Procedures

3.5.1 CCP utilizes Host sites, subcontractors, equipment vendors, and outside consultants for support when necessary. Because of this, it is imperative that CCP personnel, subcontractors, and consultants are trained in and follow not only CCP procedures but the applicable Host site procedures as well.

3.5.2 CCP procedures are initiated, maintained, and modified through CCP-approved Document Control processes, which include mechanisms for review by affected organizations, to include the Host sites and CCP subcontractors.

3.6 Training

3.6.1 CCP personnel will receive varying degrees of training on CCP CM. The general approach will be for the CME or Designee to perform Train-the-Trainer training for the Project Managers, Vendor Project Managers (VPMs) and Lead Operators (LOs) at each site who will then take the lead in ensuring their personnel, subcontractors, or consultants at each Host site are trained in CM to an appropriate level.

4.0 DESIGN REQUIREMENTS

- 4.1 Design requirements reflect those functional and operational features which are engineered to 1) prevent or mitigate consequences for non-radiological or radiological hazards to personnel whether located on or off the site. 2) provide worker health and safety, or protect the environment, and 3) demonstrate compliance with applicable safety or environmental requirements (e.g., OSHA, Resource Conservation and Recovery Act (RCRA), NEPA).
- 4.2 Design requirements for new or refurbished CCP equipment are established through the procurement process in accordance with CCP-CM-031.

5.0 CHANGE CONTROL

5.1 Design Modifications

5.1.1 Changes in the physical configuration of CCP SSCs are controlled through CCP-CM-001.

5.1.2 The Equipment Change Authorization (ECA) is the change control document which details the changes in an MCU's equipment or documentation. The ECA is used to gain approvals and invoke the Host site's unreviewed safety question (USQ) process for non like-for-like equipment repairs, drawing changes, changes to the System Design Descriptions (SDD), changes to specifications, changes to Operation and Maintenance (O&M) manuals, etc.

5.1.3 Work instructions to detail the installation and subsequent testing of a modification are documented on the Work Order (WO) using the Host site's work processes and procedures. The Host site's USQ process will be used to ensure the integrity of the safety basis is maintained when making a modification.

5.2 Modification Approvals

5.2.1 Approval levels for modifications are based on the complexity of the modifications, the impact on the Host site's safety basis, regulatory permits, applicability of quality assurance requirements, cost, and impact to occupational safety.

5.2.2 All ECAs are routed through the CMC and CME to coordinate the review of the proposed change by the appropriate personnel and organizations. Depending on the complexity or purpose of a design modification, the proposed design may require design verification in accordance with CCP-CM-031 prior to placing into service.

5.3 Design Verification

5.3.1 Design verification for a new piece of equipment or a proposed equipment change, if required, will be performed in accordance with CCP-CM-031. It is the responsibility of the CME to bring together the resources required to perform the work.

5.4 Post-Modification Testing

5.4.1 Startup testing and post-modification testing will be coordinated by the CME working with CCP and subcontractor site personnel, Host site personnel, and the equipment vendor as needed. CCP and subcontractor personnel will take the lead in performing the actual tests.

5.5 Operational Retests after Maintenance or Modifications

- 5.5.1 CCP and subcontractor personnel are responsible for ensuring systems are retested after maintenance, repair, modification, or rework. Operations procedures and other equivalent tests are performed after work completion to establish operability. Personnel designating a retest ensure that the retest is comprehensive and tests any part of a system that was affected by the work activity.

6.0 DOCUMENTS AND DOCUMENT CONTROL

- 6.1 Design documents such as SDDs, vendor drawings, Design Specifications, and Equipment Specifications establish the required and approved physical configuration and detailed performance criteria for an SSC. Any changes to these documents require prior approval.
- 6.2 Equipment Descriptions for the MCUs that contain information from the design documents and vendor drawings are controlled under CCP-QP-010. These documents include information on the actual physical configuration of the equipment and are updated to reflect equipment changes.
- 6.3 Host site specific process documents

NOTE

The following information may be included in the applicable Host site's DSA or work control processes.

- 6.3.1 A Health and Safety Plan (HSP) that specifies the basic health and safety standards and requirements applicable to CCP operations including Industrial Hygiene considerations for CCP operations.
- 6.3.2 A Hazards Analysis (HA) for the MCUs operated by CCP containing the following elements or referencing the appropriately approved document(s) containing the elements:
 - [A] Process Hazard Review
 - [B] Fire Hazards Analysis
 - [C] Radiological/ALARA Design Considerations
 - [D] Nuclear Criticality Safety Evaluation
 - [E] Functional Classification Report
 - [F] A Job Hazard Analysis (JHA) for the MCUs operated by CCP.
 - [G] Emergency Planning Hazards Assessment

6.4 CCP configuration documents are located at the CCP Records.

6.4.1 Each equipment file contains the baseline documentation listed below, as applicable:

[A] The purchase order/property transfer/credit card purchase under which the equipment was first purchased, if available.

[B] Other contract documents generated during procurement/acceptance and operation of the equipment, such as:

[B.1] O&M Manuals.

[B.2] Test and Calibration Documentation.

[B.3] Certificate of Compliance (C of C).

[B.4] Modification Documentation.

[C] Vendor Electrical and Mechanical Drawings.

[D] As-Built Drawings.

[E] A manufacturer recommended Spare Parts List.

[F] An Equipment Design Description.

[G] Subcomponent Technical Documents.

[H] Documents Containing Design Specifications.

[I] CCP-CM-001, Attachment 1, CCP Characterization Equipment Change Authorization, supporting documentation including comments and resolution.

[J] Other supporting documents as required that reflect the unit's performance criteria and associated design basis.

7.0 ASSESSMENTS

- 7.1 Periodic Management Assessments will be conducted to measure the extent to which CM elements are effective.

8.0 RECORDS

- 8.1 Records are generated during the implementation of procedures referenced in this document. These records are maintained as QA records in accordance with CCP-QP-008, *CCP Records Management*. No additional records are generated as a result of this document.