CPCCo
Central Plateau
Cleanup Company

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Administrative Procedure, Level 1 - Company Wide

CPCC-PRO-EN-8017

PRC-PRO-EN-8017

As-Built Verification Process

Revision 0, Change 3

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Program: Engineering
Topic: Engineering Program

Technical Authority: Baker, Rachel K
Functional Manager: Kujath, Brett A

Use Type: Administrative

USQ Facility	USQ Review	Screener
Solid Waste Operations Complex	GCX-8 (Not in Safety Basis Compliance Matrices)	Masulonis, John
Canister Storage Building/Interim Storage Area	(Screening/Determination Performed (no issues)) *CSB-24-093*	Covey, Lori
Waste Encapsulation Storage Facility	(Screening/Determination Performed (no issues)) *WESF-24-167*	Covey, Lori
Transportation	**Exclusion Reason:** *N/A per Section 1.3.*	
Capsule Storage Area	(Screening/Determination Performed (no issues)) *CSA-24-103*	Covey, Lori
Below HazCat 3	GCX-8 (Not in Safety Basis Compliance Matrices)	Zyph, Stephanie
105 KW Facility	GCX-8 (Not in Safety Basis Compliance Matrices)	Meyer, Matthew
324 Building	GCX-7 (Minor Change)	Garrett, Robert
D4ES-Central Plateau	GCX-8 (Not in Safety Basis Compliance Matrices)	Griebel, Scott

JHA: Administrative
Periodic Review Due Date:05/25/2027
Rev. 0, Chg. 3

Change Summary

Description of Change

Convert to level 1

1.0 INTRODUCTION

1.1 Purpose

This procedure describes the requirements and process for field verification and as-building of drawings (and other engineering documents) as required in CPCC-PRO-EN-40271, *Engineering Design Process,* and CPCC-PRO-EN-2001, *Facility Modification Package Process*. The process describes how to perform field verification and as-building of engineering drawings to support configuration synchronization between the physical plant, design requirements, and the documentation.

1.2 Scope

This procedure describes field verification and as-building of engineering drawings used for configuration management purposes. It may also be used for other engineering purposes (design, procurement, testing, etc.) when it is determined that accurate field conditions need to be documented.

1.3 Applicability

This procedure applies to engineering drawings that are required to reflect actual field conditions. Other engineering documentation may also need to be revised as a result of the field verification activities.

All essential and support drawings (see CPCC-PRO-EN-20050, *Engineering Configuration Management*) shall be field verified and as-built when an action affects the configuration depicted on the drawing.

Previously released “Essential” and “Support” drawings and engineering documentation is “grandfathered” and does not require field verification until an action is performed which affects the depicted configuration. The exception to this is when a drawing is re-designated as an “Essential” or “Support” from a lower classification (e.g. Support to Essential, Reference to Essential, or Reference to Support).

This procedure also applies to engineering drawings and documentation used in a Construction Project. The Project Engineering Manager or Design Authority (DA) shall decide which drawings and documents will be designated as Essential or Support at turnover and others that need to be field verified and as-built. Drawings prepared and as-built by third party vendors that will be considered Essential or Support, or are otherwise required by the DA shall be field verified/as-built using this procedure or their equivalent company procedure.

1.4 Implementation

This document is effective on publication.

2.0 RESPONSIBILITIES

Responsibilities for engineering staff performing field verification and as-building tasks are identified below. For the purpose of this procedure, System Engineers are considered to be Design Authorities.

2.1 Design Authority

- Ensures baseline drawings and physical configuration of the facility are in sync.
- Identifies drawings and engineering documentation which needs to be field verified and as-built.
- Sets the expectations for field verification of drawings.
- Determines the Confidence Level to be applied to each drawing.
- Identifies members of the Field Verification Team.
- Reviews field verified mark-ups to determine if the field is correct and the drawing needs to be as-built, or if the field needs to be changed.
- Prepares change authorization to revise drawings to match the field verified configuration or correct the field configuration.

2.2 Designer

- Prepares drawings to be used in the field verification process.
- Updates and revises drawings with the results of the field verification per the appropriate change authorization.

2.3 Field Verification Team Member

- Reviews the documentation to be field verified.
- Determines the degree of accuracy required for each drawing as established by the Confidence Level.
- Walk-down and field verify the drawing in accordance with this procedure.
- Documents field conditions and discrepancies.
- Informs the DA of the results of the field verification.
- Signs field verified document with discrepancies noted and provides to the DA.

3.0 PROCESS

Configuration baseline drawings (i.e., Essential (E) and Support (S) drawings) are required to be field verified and as-built whenever a new drawing is released into the Document Management and Control System (DMCS), or an existing drawing is revised via an Engineering Change Request (ECR) or Construction Project. In addition, some drawings used for design, development, procurement, or testing may also need to be field verified and as-built.

The DA shall ensure that new or revised Essential or Support baseline drawings are not released into DMCS until the drawings reflect an As-Built condition. Facility modifications and new construction shall have all configuration-controlled baseline drawings field verified to ensure that the drawings accurately reflect the As-Built field configuration prior to release of the drawing into DMCS.

Field conditions that do not correspond to the engineering drawing must be identified and resolved prior to drawing release. Changes to drawings based on field conditions may be made only after a facility walk-down is complete and the field condition has been verified to be correct.

The DA shall designate the Confidence Level to be used for field verification of documentation. The Confidence Level Indicates the degree of assurance that items in the field are as depicted on the drawing. The Confidence Level selected is based on the engineering design, safety, operation, and maintenance requirements. The Confidence Level is not placed or identified on the drawing or referenced in the DMCS database.

The Confidence Level shall be designated for each document to be field verified. The DA may not require all data on a drawing to be verified at the designated Confidence Level. In this case, the DA will inform the Field Verification personnel as to what parts of document need the Confidence Level of verification.

The Confidence Level is then used by Field Verification personnel in performing the degree of verification needed on the drawing. Confidence levels are assigned by the DA as follows:

Confidence Level	Level Description
A	Verify, by detailed physical verification, the dimensional accuracy or accuracy of depiction. Concealed piping or wiring is positively verified for the flow path (example, continuity checks or flow test); actual routing is not required to be verified. Critical dimensions are verified within specified drawing tolerances. Equipment/component numbering and labelling is verified to be in place and correct.*

Confidence Level	Level Description
B	Verify, by detailed physical verification, the dimensional accuracy or accuracy of depiction. Concealed piping or wiring is not positively verified for flow path if there is sufficient reason to believe the drawing is correct (e.g., a 10-gauge blue wire enters and exits a conduit and is connected to a terminal as indicated on the drawing). Critical dimensions are verified within specified drawing tolerances. Equipment/component numbering and labelling is verified to be in place and correct.*
C	Physical verification by visual observation that depicted items are physically installed in their relative locations. Equipment/component numbering and labelling is verified to be in place and correct.*
D	Used for re-verification only. DA/SE reviews the drawing and accepts the drawing as correct based on the performance of the system. Confidence Level D shall not be applied to drawings depicting items that are safety class or safety significant.
	*Appendix A provides a convenient table which may be used to facilitate equipment and component labeling verification.

Unless otherwise approved by the Engineering Manager, Essential drawings and drawings for safety class and safety-significant structures, systems, and components (SSC) will be verified to Confidence Level A or B. Drawings designated as reference may be identified by the DA/SE for As-Built verification. The confidence level is selected based on the engineering design, safety, operation, and maintenance uses of the drawing.

Released drawings are controlled in DMCS. Those listed as configuration baseline shall be as-built in accordance with this procedure. Project drawings will be reviewed by the DA/SE prior to Operations turnover to determine which drawings are baseline and are required to be as-built.

Actionee	*Step*	*Action*
DA	1.	IDENTIFY the drawings to be issued as Essential or Support and any other documentation that is to be field verified and as-built.
	2.	For each drawing DETERMINE if there are any unincorporated work complete changes.
DA	3.	DETERMINE the Confidence Level to be used for field verification of each drawing AND IDENTIFY any additional verification criteria to be applied.

Actionee	Step	Action
DA	4.	PROVIDE the drawing number(s) and unincorporated work complete change information to the Designer.
Designer	5.	For each drawing provided by the DA, PRODUCE a draft drawing with the work complete changes incorporated.
	6.	PROVIDE hardcopies of the draft drawing(s) to the DA and Field Verification Team.
DA	7.	REVIEW the drawings, the associated Confidence Level for each, and any additional verification criteria with the Field Verification Team.
Field Verification Team	8.	REVIEW the draft drawing(s) provided and the Confidence Level required for each. a. ENSURE the degree of accuracy required by the assigned Confidence Level is understood.
	9.	WALK-DOWN the SSC AND COMPARE the field conditions to the drawing.
	10.	DETERMINE the following: a. Does the drawings reflect the field conditions? b. Have all outstanding changes been implemented correctly in the field? c. Are there any undocumented changes to the system or equipment?
	11.	To the level specified by the assigned Confidence Level, VERIFY dimensions, flow paths, and equipment labeling. As specified by the Confidence Level: a. TAKE measurements of critical dimensions. b. VERIFY electrical wiring and pipe runs. c. VERIFY correctness of equipment labeling.

Actionee	*Step*	*Action*
Field Verification Team	12.	MARK UP the field verification drawing(s). A recommended method for mark-up is as follows: a. HIGHLIGHT information on the drawing that has been verified to be accurate (i.e., the drawing and field are in agreement). b. REDLINE information on the drawing where the drawing and field do not agree. The redline reflects the field condition(s).
	13.	REVIEW the marked-up field verification drawing with the DA/SE.
DA	14.	For each condition where the drawing and field do not agree (redline), DETERMINE which configuration is correct -- drawing or field. a. IDENTIFY those redlines where the field is correct will be incorporated in the revised drawing. b. IDENTIFY redlines where the field is incorrect and a modification to the field is required.
	15.	PROCESS a change authorization (ECR or equivalent) to update the drawings and/or modify the field according to the determination made in step 14 above. ECRs that modify the field will need to be verified when work complete using this process.
Designer	16.	Using the field verification drawings and associated work completed ECRs, REVISE or UPDATE the drawing with any corrections identified in the field verification.
	17.	ROUTE the drawing for Approval.
DA	18.	ENSURE the revised or updated drawing incorporates the field verification AND, when satisfied, APPROVE the drawing.
Designer	19.	PROCESS the As-Built drawing through the DMCS drawing release process.

4.0 FORMS

None

5.0 RECORD IDENTIFICATION

None

6.0 SOURCES

6.1 Requirements

CPCC-RD- EN-1819, *Engineering Requirements*

6.2 References

CPCC-PRO-EN-2001, *Facility Modification Package Process*
CPCC-PRO-EN-20050, Engin*eering Configuration Management*
CPCC-PRO-EN-40271, *Engineering Design Process*

Appendix A - Component Identification Worksheet

A Component Identification Worksheet such as the one provided below may be used for system equipment and component labelling and tagging verification.

Component Identification Work Sheet				
Component Number	**Component Description**	**Tagging Required**		**Comments**
		Yes	No	

Appendix B - Glossary

Term	*Definition*
As-Built drawing	A record that shows the approved configuration of equipment or a system as it exists in the field.
As-Built process	The effort to field verify the configuration of equipment or a system as it exists in the field and ensure that the field configuration meets the design basis and documentation.
Configured	A term used in the Configuration Management Program to indicate which of the engineering documents are current, i.e., in the case of drawings, As-Built and field verified.
Confidence Level	The degree of assurance that field items and routing are as depicted on a drawing. Confidence levels are used to facilitate field verification.
Critical Dimensions	Dimensions relied on by a safety basis; a Criticality Prevention Limit (CPL), or critical dimension as specified by design.
Field Verification	The process of confirming that technical information depicted on selected engineering drawings accurately reflects the existing field configuration.
Field Verification Team	An individual or group of individuals who verify that selected engineering drawings and incorporated engineering change notices are accurately reflected in the field. The DA/SE sets expectations for the verification process.