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1. ECN No 704567

ENGINEERING CHANGE NOTICE

Page 1 of 2

Proj.
ECN

2. ECN Category (mark one) Supplemental ☐ Direct Revision ☒ Change ECN ☐ Temporary ☐ Standby ☐ Supersedure ☐ Cancel/Void ☐		3. Originator's Name, Organization, MSIN, and Telephone No. WILLIAM R. DUERR 57660 S2-01 373-4331		4. Date 10-12-94																									
5. Project Title/No./Work Order No. ENG DWG FLD VERIF PROG (N3164)		6. Bldg./Sys./Fac. No. 200E/200W TANK FARMS		7. Approval Designator 3 SQ																									
8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-WM-WP-072 REV 2		9. Related ECN No(s). NA		10. Related PO No. NA																									
11a. Modification Work ☐ Yes (fill out Blk. 11b) ☒ No (NA Blks. 11b, 11c, 11d)		11b. Work Package No. NA		11c. Modification Work Completed NA Cog. Engineer Signature & Date																									
				11d. Restored to Original Condition (Temp. or Standby ECNs only) NA Cog. Engineer Signature & Date																									
12. Description of Change THIS SUPPORTING DOCUMENT HAS BEEN COMPLETELY REVISED, WITHOUT REVISION BARS, TO REFLECT UPDATE INFORMATION FROM QUALITY ASSURANCE, CONFIGURATION MANAGEMENT AND NUCLEAR SAFETY ASSURANCE.																													
13a. Justification (mark one) Criteria Change ☒ Design Improvement ☐ Environmental ☐ As-Found ☐ Facilitate Const. ☐ Const. Error/Omission ☐ Design Error/Omission ☐		13b. Justification Details REVISED TO INCLUDE UPDATED TRAINING REQUIREMENTS AND TO IMPROVE WORKER PROTECTION REQUIREMENTS.																											
14. Distribution (include name, MSIN, and no. of copies) <table border="0"><tr><td>W.D. COLEMAN</td><td>S2-01</td><td>D.C. BOOTHROYD</td><td>R1-30</td></tr><tr><td>P.F. ULK</td><td>S2-01</td><td>T. MOLEFF</td><td>R1-30</td></tr><tr><td>P.J. ELMENDORF</td><td>T4-09</td><td>M.N. ISLAM</td><td>W5-85 R3-08</td></tr><tr><td>W.R. DUERR</td><td>S2-01</td><td>OSTI (2 COPIES)</td><td>L8-07</td></tr><tr><td>R.L. MARTELL</td><td>S2-01</td><td>CENTRAL FILES</td><td>L8-04 (2)</td></tr><tr><td>J. WEBER</td><td>S1-57</td><td></td><td></td></tr></table>				W.D. COLEMAN	S2-01	D.C. BOOTHROYD	R1-30	P.F. ULK	S2-01	T. MOLEFF	R1-30	P.J. ELMENDORF	T4-09	M.N. ISLAM	W5-85 R3-08	W.R. DUERR	S2-01	OSTI (2 COPIES)	L8-07	R.L. MARTELL	S2-01	CENTRAL FILES	L8-04 (2)	J. WEBER	S1-57			RELEASE STAMP <div style="border: 1px solid black; padding: 5px; text-align: center;">OFFICIAL RELEASE 58 BY WHC DATE OCT 12 1994 #3 MASTER</div>	
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RELEASE AUTHORIZATION

Document Number: WHC-SD-WM-WP-072, REV 3

Document Title: ENGINEERING DRAWING FIELD VERIFICATION PROGRAM

Release Date: 10/12/94

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This document was reviewed following the
procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

* * * * *

WHC Information Release Administration Specialist:

Kara Broz

(Signature)

October 12, 1994

(Date)

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WHC-GD-WM-WP-072 Rev.3

ENGINEERING DRAWING FIELD VERIFICATION PROGRAM

SEPTEMBER 1994

Prepared by Facility Design Services

FIELD VERIFICATION PROGRAM

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FORWARD

Safe, efficient operation of waste tank farm facilities is dependent in part upon the availability of accurate, up-to-date plant drawings. Accurate plant drawings are also required in support of facility upgrades and future engineering remediation projects.

This supporting document establishes the procedure for performing a visual field verification of engineering drawings, the degree of visual observation being performed and documenting the results. A copy of the drawing attesting to the degree of visual observation will be paginated into the released Engineering Change Notice (ECN) documenting the field verification for future retrieval and reference.

All waste tank farm essential and support drawings within the scope of this program will be converted from manual to computer aided drafting (CAD) drawings.

A permanent reference to the field verification status will be placed along the right border of the CAD-converted drawing, referencing the revision level, at which the visual verification was performed and documented.

ENGINEERING DRAWING FIELD VERIFICATION PROGRAM

1.0 PURPOSE

The purpose of the Engineering Drawing Field Verification Program is to provide accurate drawings of single and double shell waste tank farm facilities.

2.0 SCOPE

The program consists of updating to actual field configuration all essential and selected support drawings necessary for safe operations, training and maintenance of 200E and 200W waste tank farm facilities.

This program also includes the conversion of selected drawings from manual to computer aided drafting (CAD) format.

3.0 DEFINITIONS

Approval Designators

An indicator of the reviews and approvals required by the DOE and WHC to verify that Environmental, Safety and Quality Assurance requirements are addressed (see WHC-CM-3-5, Document Control and Record Management Manual).

Component Identification Work Sheet

The Component Identification Work Sheet is for recording field verified components, numbering and tag status (see Attachment 4).

Concealed Components

Components depicted on engineering drawings that are concealed from view, i.e., underground, internal parts, in pits, vaults, diversion boxes, or where visual observations are not possible due to radiation exposure limitations or physical barriers.

Customer Document Release Information

The Customer Document Release Information is a departmental form required by Configuration Documentation North, to properly release documents through the release station (see Attachment 5).

Engineering Change Notice (ECN) Print-out

The Engineering Change Notice Print-out lists those modification ECNs affecting particular drawings, indicates the document status level and can be obtained through Configuration Documentation.

Field Verification

A physical verification through visual observations that components and routing depicted on the drawings are located in their defined location. Reasonable assumptions will be made that point evidence, i.e., piping entering and exiting or wire numbers/color code comparisons agree with the drawing depictions.

Functional operation is not being field verified, although at the option of the cognizant engineer, a functional operation test may be used as a means to verify the continuity of concealed components. Testing results shall be documented in accordance with WHC procedures.

Field Verification - Activity Log

The Field Verification - Activity Log is a departmental form that provides a written record of package movement and status during the verification process (see Attachment 1).

Field Verification Package

The Field Verification Package consists of all pertinent information compiled through the field verification process (see Section 5.2).

Field Verification Team

Design Field Verification Service personnel trained per Section 5.6 to perform the functions outlined in Section 6.2.1.

Field/Drawing Discrepancy Team

Facility Cognizant Engineer, Design Field Verification Service and Quality Assurance (if requested by cognizant engineer).

Nonconformance Report (NCR)

A document used to identify, record and disposition nonconforming items. NCRs will be written against nonconforming items which cannot be traced to acceptable documentation, i.e., drawings, history files, vendor information files, projects, procedures etc. (see Section 5.5).

Observer's Report of Training

The Observer's Report of Training is an internal departmental form for documenting each field verifiers formal, informal and on-the-job (OJT) training requirements (see Attachment 2).

Receipt Acknowledgement

The receipt acknowledgement is a WHC form utilized to track routing of original documentation, drawings, work packages, redline markups and ECNs, for cognizant reviews and signature approvals (see Attachment 3).

Unreviewed Safety Questions (USQ)

An evaluation performed by the Cognizant Engineer in compliance with WHC-IP-0842, Unreviewed Safety Questions.

Verification Test

An independent test, performed by operation support service personnel, that provides accuracy of drawing depiction and continuity of concealed or inaccessible items. Actual routing is not being verified except where accessibility is possible.

4.0 RESPONSIBILITIES

4.1 Cost Account Manager, Engineering Drawing Field Verification Program

The Cost Account Manager is responsible for assuring the program is structured in order to comply with:

- o Overall milestones, costs, schedules and performance.
- o Funding.
- o Program review, control and reporting requirements.

4.2 Manager, Design Field Verification Service

The manager, Design Field Verification Service is responsible for assuring the program is managed in order to comply with:

- o The scope of work defined in the Engineering Drawing Field Verification Program.
- o First-line management of Field Verification Team activities.

- o Assuring support personnel are provided.
- o Implementing the program plan/procedure as defined.
- o Designating responsible personnel to conduct self-assessments of randomly selected drawings as follows:

Five percent of designated program drawings during the first half of the fiscal year and five percent during the second half. These self-assessments are to be documented and are separate from the random reviews conducted by Quality Assurance (see Attachment 1).

- o Providing for and/or conducting program training requirements and assuring team members are trained to waste tank farm entry requirements per Tank Farm Health and Safety Plan (HASP).
- o Providing weekly/monthly function status reports and charts to upper management.
- o Meeting program costs, milestones and schedules.
- o Maintaining field walkdown packages in a secure location.

4.3 East/West Systems Engineering & Projects

East/West Systems Engineering & Projects cognizant engineers are responsible for:

- o Reviewing field verification packages and direct revision ECNs for document content, Approval Designators and assuring signature approval routing (see WHC-CM-6-1, Standard Engineering Practices).
- o Evaluation of temporary ECNs, CEOs and FCN documentation for incorporation as a permanent change or removal from the facility as required (see WHC-CM-6-1, Standard Engineering Practices).
- o Providing applicable WHC testing documents, plans and schedules.
- o Providing resolutions and acceptance documentation for program-generated NCRs (see WHC-CM-4-2, Quality Assurance Manual). Disposition of an NCR shall be defined by the Cognizant Engineer within ten (10) days after receiving the deficiency/NCR notice. Closure of the NCR shall be completed thirty (30) days after initial disposition.

- o Providing final review and signature approval of program revised drawings.
- o Meeting program costs, milestones and schedules.

4.4 Waste Tank Quality Engineering

Waste Tank Quality Engineering is responsible for:

- o Reviewing program-generated direct revision ECNs according to cognizant engineer-assigned Approval Designators (see WHC-CM-6-1, Standard Engineering Practices).
- o Assisting the Field Verification Team and responsible cognizant engineer for program-generated NCR document reviews, tracking disposition and close out (see WHC-CM-4-2, Quality Assurance Manual).
- o Approving WHC test-related documents, establishing Quality Assurance hold points and witnessing test, to ensure results comply with the established requirements (see WHC-CM-6-1, Standard Engineering Practices and WHC-CM-4-2, Quality Assurance Manual).
- o Performing a random review of verified drawings and documentation for compliance with this program and other referenced procedures (see WHC-CM-4-2, Quality Assurance Manual).

4.5 Waste Tank Farm Operations and Production Control

Waste Tank Farm Operations and Production Control is responsible for:

- o Assisting field verification program management in developing tank farm access plans/schedules.
- o Providing escort personnel for the Field Verification Team as required.
- o Providing operator and electrical personnel to open specific panels, cabinets, MCCs, buildings, etc., to allow visual verification of drawing depictions.
- o Providing a Safety Briefing when required prior to waste tank farm/facility entry (see Section 5.4.1).
- o Providing qualified testing personnel (as required) to meet the objectives/schedules of this program.

5.0 REQUIREMENTS

5.1 General

The general requirements of this supporting document are applicable to those drawings identified in WHC-SD-WM-PC-002, "Tank Farms' Essential Drawing Plan," for which the Engineering Drawing Field Verification Program is being implemented. However, not all drawings identified within the document are to be field verified. Drawings such as Logic Diagrams, Circuit Board Diagrams and Printed Circuit Board Assemblies do not lend themselves to the field verification process and are excluded from this program. The Cognizant Engineer (Section 6.1) has final determination of drawings to be field verified.

Current practices for control of engineering documentation will be reviewed and, if required, recommendations for improvement will be developed for implementation.

5.2 Field Verification Package

The documentation contained in each work package upon completion shall, as a minimum, contain the following documents:

- o Two legible, half-size plain paper copies of the identified waste tank farm essential or support drawing (see WHC-SD-WM-PC-002).
- o Copy of the Field Verification - Activity Log form.
- o Copy of the current Engineering Change Notice Printout.
- o Copy of "work complete" Engineering Change Notices that require incorporation prior to releasing the drawing.
- o Copy of Design Service Request (DSR) form.
- o Copy of Component Identification Work Sheet, (see Attachment 4).
- o Copy of the released direct revision ECN, documenting the degree of visual observation, which was accomplished by the walkdown.
- o Copy of completed Pre-job Safety Briefing form or Job Hazard Analysis form for non-routine jobs (See WHC-CM-4-3, Industrial Safety Manual, Standard A-3, Pre-job Safety Planning/Job Hazard Analysis).

5.3 Direct Revision ECN

Each direct revision ECN is to specify the following in Block 12 of the ECN:

- o This direct revision ECN updates drawing H-_____ SH _____
Rev _____ per WHC-SD-WM-WP-072, REV 3, ENGINEERING DRAWING
FIELD VERIFICATION PROGRAM.

The attached copy of the drawing documents the field verification status:

YELLOW: Indicates field configuration agrees with the drawing.
GREEN: Indicates unable to verify due to underground, in conduit/ cable
trays, concrete, etc.
RED: Indicates changes between the field and the drawing.

NOTE: NEXT HIGHER REVISION OF THE DRAWING IS LIMITED TO
THOSE ITEMS/AREAS IDENTIFIED AS RED.

Required Changes: All changes to each drawing shall be specified.

- o Field verification team members shall utilize the indicated color code during the field walkdown process indicating actual verified configurations, changes or areas which are inaccessible.
- o A copy of the color-coded (marked-up) drawing shall be retained in each field verification work package.
- o A down sized copy of the verified drawing shall be paginated into the direct revision ECN attesting to the level of verification by indicating which portion of the drawing is red, yellow and/or green.

5.4 Field Verification Walkdowns

Due to the complexity and configuration of many of the systems, a 100% hand-over-hand visual verification is not possible. Many piping systems are buried, wire runs are in conduit/cable trays, jumpers are located in high radiation zone pits, vaults or diversion boxes. These conditions make components and systems inaccessible for field verification.

To the fullest extent possible, under the direction of the cognizant engineer, the field verification walkdown is to verify engineering information on the drawing that is critical to the operation and maintenance of systems and components. The following is provided as examples of information that may be considered critical.

- o Dimensions that locate system/components.

- o Circuit breaker/fuse ratings.
- o Motor Ratings.
- o Component identification (labels/tags).
- o Equipment/component orientation (i.e., flow diagram information).

The results of the field verification are to be documented in accordance with section 5.3 and maintained in the field verification package. The field verification package file is to be retained for a minimum of one year from the date of the field verification walkdown completion at a location controlled by Design Field Verification Service.

An Engineering Change Notice (ECN) is to be used to revise engineering drawings to reflect the results of the field verification effort. A copy of the drawing is to be paginated into the ECN indicating the areas/items that were visually inspected, areas/items which were inaccessible and noting required changes resulting from the field verification walkdown.

5.4.1 Worker Protection

Work requiring entry into Radiologically Controlled Areas shall be performed in accordance with WHC-CM-1-6, WHC Radiological Control Manual, Chapter 3, Conduct of Radiological Work.

Work requiring entry into Waste Tank Farm respiratory protection zones shall be performed in accordance with WHC-SD-WM-HSP-002, Tank Farm Health and Safety Plan, Safe Work Practice.

Should non-routine, potentially hazardous conditions exist at or near the work location or should the scope of work vary significantly from that described in this work plan, a Job Hazard Analysis will be developed per Industrial Safety Manual, WHC-CM-4-3, Vol. 1, Section A-3.

Support from maintenance electricians is often required to provide access to electrical equipment. The following is a description of typical tasks they may be required to perform in support of the field verification walkdowns (during which all equipment is assumed to be energized):

- o Opening compartments in substations and MCCs (may be necessary to remove toggle extension from breaker to verify frame size).
- o Opening disconnects, relay cabinets, instrument enclosures, junction boxes or instruments.
- o Removing front covers of panelboards.

Although most verification can be done without penetrating the entrance plane of the electrical enclosure, it will occasionally be necessary to rotate wire markers and/or unbundle wires to trace. (Note: There will be no breaking of this plane into equipment where voltage over 480VAC is present). In accordance with Industrial Safety Manual, WHC-CM-4-3, Vol. 1, Section E-2, work near exposed energized equipment shall be performed by qualified employees using proper protective equipment and safe work practices.

During each shift and prior to initiating a walkdown in a facility, the Design Field Verification Service/Quality Control representative conducting the walkdown shall obtain approval from the Shift Manager and the appropriate facility operator. Work location and scope, work area conditions, safety precautions and requirements will be discussed and all personnel involved (e.g. electrician, RPT) will be informed of them.

5.5 Project/Nonconformance Report (NCR) Impacted Drawings

Should nonconforming items and/or configuration discrepancies be discovered during a walkdown by Design Field Verification Service, a Field/Drawing Discrepancy Team shall determine the required action per section 6.3.

Per the direction of the cognizant engineer, field verified drawings impacted by a "not work completed" Project(s) or unresolved NCR(s) will not be restricted from being released and the following as a minimum will be incorporated via a direct revision ECN:

- o The affected drawings will have the area clouded and an Engineering Hold identification number issued per WHC-CM-6-1, EP 1.10, and below the Hold Number in brackets identify the "(Project number)" or "(NCR number)."
- o Above or near the Title Block, in 1/4 inch minimum letters, print "THIS DRAWING MODIFIED BY PROJECT (number) SEE DRAWING (number) or "THIS DRAWING IMPACTED BY NCR (number)."
- o A copy of the NCR will be paginated into the direct revision ECN and a note on the ECN copy will identify that the original NCR is located in the Quality Assurance Department.

5.6 Qualification Training

The requirements and objectives of the field verification program are to establish quality field-verified drawings. Field Verification Team members shall be trained and qualified by Design Field Verification Service OJT Observers.

The OJT Observers are selected and qualified based on background work experience/education and must have 3-5 years of field verification experience at

an engineering designer or equivalent level and have completed reading requirements of this program in addition to all other WHC required training.

Training may be conducted by program personnel, other WHC departments or existing WHC training capabilities in qualifying and documenting field verifier training. Team members shall be trained and qualified according to the following format (see Attachment 2).

o Environment Training:

<u>Course Number</u>	<u>Course Title</u>
350710	Waste Tank Farm Facility Orientation 200E/200W
020001	Radiation Worker Initial Training
020003	Radiation Worker Requalification
HEHF	Hazardous Waste Physical
031110	RCRA TSD Hazardous Waste Training with SKA-PAK
020005	Criticality Safety Training-Non Fissile
044480	Medium Risk Electrical Safety
032030	Hazardous Waste Operations Refresher
020197	Medic First Aid

o Design Service Training:

<u>Manual Number</u>	<u>Procedure</u>	<u>Title</u>
WHC-SD-WM-WP-072	Current Revision	Engineering Drawing Field Verification Program

WHC-CM-6-3	Section 1	Purpose, Scope, and Responsibilities
	Section 2	Drafting Fundamentals
	Section 3	Drafting Conventions
	Section 4	Computer Aided Design Drafting
	Section 5	Drawing Revisions
	Section 6	Standards and References

WHC-IP-0842	Section 5.18.1	Equipment/Component Identification
	Section 15.9	Unreviewed Safety Questions

o Standard Engineering Practices Training:

<u>Manual</u>	<u>Procedure</u>	<u>Title</u>
WHC-CM-6-1	EP 1.3	Drawing Requirements
	EP 1.6	Engineering Data Transmittal Requirements
	EP 1.7	Engineering Document Approval and Release Requirements
	EP 1.10	Engineering TBDs/Holds Requirements
	EP 2.2	Engineering Document Change Control Requirements
	EP 4.1	Design Verification Requirements
	EP 4.2	Testing Requirements

o Quality Assurance Training:

<u>Manual</u>	<u>Procedure</u>	<u>Title</u>
WHC-CM-4-2	QR 15.0	Control of Nonconforming Items
	QR 15.1	Nonconforming Item Reporting
	QR 15.2	Nonconformance Report Processing

o Industrial Safety Training:

<u>Manual</u>	<u>Procedure</u>	<u>Title</u>
WHC-CM-1-6	Chapter 3	Conduct of Radiological Work
WHC-CM-4-3	A-3	Pre-Job Planning/Job Hazard Analysis
	E-2	Electrical Safety Practices
WHC-SD-WM-HSP-002	Current Revision	Tank Farm Health and Safety Plan

o ALARA Program Training:

<u>Manual</u>	<u>Procedure</u>	<u>Title</u>
WHC-CM-4-11	Section 7.0	Integrating ALARA Controls into the Workplace

o On-The-Job Training:

<u>Mechanical Drawings</u>	Flow Diagrams, Sections, Elevations and Details, Process Routing Boards 272AW and 272WA, Jumper Configurations, Equipment Location, Identification and Logging.
<u>Electrical Drawings</u>	One Line Diagrams, Connection Diagrams, Control Systems, Component Location, Identification and Logging.

Instrument Drawings Instrumentation Engineering Flow Diagrams (IEFD Drawings), Control Diagrams, Arrangement and Termination Details, Component Location, Identification and Logging.

6.0 PROCEDURE

This procedure identifies minimum organizational requirements, responsibilities and processes associated with the field verification of waste tank farm essential and support drawings (see Attachment 6).

6.1 Cognizant Engineer

- o Determines essential and support waste tank farm facility drawings requiring field verification (see WHC-SD-WM-PC-002).
- o Reviews and approves drawing changes per WHC-CM-6-1, EP-1.3.
- o Determines need for further field investigation or verification testing.
- o Evaluates temporary engineering changes, old CEOs and FCNs for incorporation into the drawings.
- o Assigns Approval Designators to the ECN as required.
- o Provides reviews and approvals for ECNs and drawing revisions.
- o Obtains approval of Cognizant Engineering Manager.
- o Following checking approval, reviews and signs revised drawings.
- o Provides resolution and acceptance documentation for program generated NCRs per section 4.3.
- o Provides USQ evaluation, if required, per WHC-IP-0842, Waste Tanks Administration, Section 15.9, Unreviewed Safety Questions.

6.2 Design Field Verification Service

6.2.1 Field Verification Personnel

- o Obtains copies of program-identified drawings from Configuration Documentation.

- o Performs a review of unincorporated ECN documents affecting the drawings.
- o Assembles the verification packages by facility, drawing category, and priority schedule.
- o Performs the field walkdown and develops marked up drawings depicting current field configurations.
- o Initiates direct revision ECN and/or NCR documents depicting current field conditions.
- o Prepares component lists documenting missing, incorrect, or inadequate labelling.
- o Submits program generated NCRs to Quality Assurance for proper tracking, disposition and closure.
- o Paginates a copy of the NCR into the direct revision ECN and marks it with the following:
"ORIGINAL NCR IS LOCATED IN THE QUALITY ASSURANCE DEPARTMENT."
- o Submits direct revision ECNs to the cognizant engineer for review and approval.

6.2.2 Manual to CAD Conversion Personnel

- o Coordinates drawing conversion activities with the Field Verification Team Leader for facility and drawing priorities.
- o Obtains current revision copy of priority drawings and performs the manual to CAD data set drawing conversion.
- o Obtains a peer review of each converted drawing for conformance to established WHC standards and program requirements.
- o Insures that the proper AutoCAD layering convention standards are used in the preparation of WHC engineering drawings.
- o Revises drawing original and CAD data sets in accordance with program-approved ECN documentation.
- o Adds field verification status reference to drawings Zone-E along the right hand border.
- o Obtains designers review of the drawings following revision.

- o Prepares a drawing check package and submits it to the checking department for review and signature approval.
- o As needed, fills out a receipt acknowledgement form and issues it to the cognizant engineer, along with the direct revision ECN and revised drawings for review and final signature approval.
- o Submits drawing and associated documentation to the manager, Design Field Verification Service for drafting signature approval.
- o Completes customer document release information form and submits it, the revised drawings, approved direct revision ECN and the old manual drawing to Configuration Documentation for release.

6.3 Field/Drawing Discrepancy Team

After Design Field Verification Service completes the walkdown, the Field/Drawing Discrepancy Team evaluates if the discrepancies are in the field or on the drawings. If the discrepancies are determined to be in the field, then they are identified on an NCR per section 5.5. But if the discrepancies are determined to be on the drawings, then they are identified on an ECN per section 5.3.

6.4 Quality Assurance

The Quality Assurance department is responsible for providing the following in support of the field verification program.

- o Reviews and approves program-generated ECNs to ensure completeness and accuracy based on assigned Approval Designators.
- o Provides reviews, verifications, tracking and disposition acceptance for program-generated NCRs.
- o Providing quality overview of verification test documentation and ensuring compliance with WHC testing plans and schedules.
- o Performs random (field verification) sample surveillance of program documentation and field activities.
- o Ten percent (10%) of the drawings, which have been walked down and released by Design Field Verification Service, will be randomly chosen to conduct independent field verification by the Quality Control Inspector. The Quality Control Inspector will verify that all items on the drawing, which are accessible with reasonable effort, match the field.

- o If the observations are found to be unsatisfactory, which include any technical, administrative, drafting and clerical errors, Design Field Verification Service will be notified of the results in writing. Upon receiving the results, Design Field Verification Service will have thirty (30) calendar days to resolve/correct the findings.
- o Resolutions/corrections made by Design Field Verification Service will be reviewed by Quality Assurance.
- o If Quality Assurance fails to see improvements in the accuracy of the programmed generated drawings, a Corrective Action Report (CAR) shall be generated by Quality Assurance.

7.0 REFERENCES

<u>Manual</u>	<u>Title</u>
WHC-CM-1-3	Management Requirements and Procedures
WHC-CM-1-6	Conduct of Radiological Work
WHC-CM-3-5	Document Control and Record Management Manual
WHC-CM-4-2	Quality Assurance Manual
WHC-CM-4-3	Industrial Safety Manual
WHC-CM-4-11	ALARA Program Manual
WHC-CM-6-1	Standard Engineering Practices
WHC-CM-6-3	Drafting Standards Manual
<u>Document</u>	<u>Title</u>
WHC-SD-WM-PC-002	Tank Farms' Essential Drawing Plan
WHC-SD-WM-HSP-002	Tank Farm Health and Safety Plan
WHC-IP-0842	Waste Tanks Administration

FIELD VERIFICATION - ACTIVITY LOG

Drawing Number: _____ Sheet: _____ Revision: _____

Drawing Title: _____

Facility: _____ Location: _____ COG Engineer: _____

Drawing Category:

☐ Essential ☐ Support ☐ General ☐ New Drawing ☐ Consolidation

ACTIVITY AND DATES	START	COMPLETION	SELF ASSESSMENT
Develop Field Verification Drawing Package			
CAD Conversion (Optional)			
Field Verification Walkdown			
Preparation of Redline, ECN and/or NCR			
Drawing Revision/Peer Check			
Drawing Package Review by Designer			
Drawing Package Review by Checking Services			
Drawing Package Review by Cognizant Engineer			
Approvals-Cog Engr, Cog Engr Mgr.			
Configuration Documentation Workstation-Release			

FIELD WALKDOWN:

Member(s): _____ / _____ Date: _____

SELF-ASSESSMENT:

Team / Member(s): _____ / _____ Date: _____

DESIGN FIELD VERIFICATION SERVICE OBSERVER'S REPORT OF TRAINING				
JOB ASSIGNMENT DESCRIPTION: <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <u>TECHNICAL:</u> ☐ Mechanical ☐ Electrical ☐ Instrumentation ☐ Planner/Scheduler </div> <div style="width: 45%;"> <u>SPECIALIST:</u> ☐ Observer, Mechanical ☐ Observer, Electrical ☐ Observer, Instrumentation ☐ Program Coordinator </div> </div> NAME: _____ EMPLOYEE NO. _____				
TRAINING REQUIREMENTS AND TYPE: DESIGNATE: (F) FORMAL, WHC REQUIRED (R) RECERTIFICATION (I) INFORMAL, DFVS REQUIRED (OJT) ON-THE-JOB TRAINING, DESIGN SERVICE				
Procedure / Course Title	Course No.	Hours	Type	Observer's Initials
ENVIRONMENTAL TRAINING				
RCRA TSD Hazardous Waste Training W/ SKA-PAK	031110	24	F	
Hazardous Waste Opn w/SKA-PAK Refresher	032030	8	R	
Rad Worker Initial Tng	020001	20	F	
Rad Worker Requal	020003	8	R	
Hazardous Waste Physical	HEHF		F	
WTF Facility Orientation	350710	1	F	
Criticality Safety Training Non Fissile	020005	2	F	
Med Risk Elec Safety	044480	8	F	
Medic First Aid	020197	8	F	

Procedure / Course Title	Course No.	Hours	Type	Observer's Initials
DESIGN SERVICE TRAINING				
WHC-SD-WM-WP-072	ALL	Read	I	
WHC-CM-6-3	Sect. 1	Read	I	
	Sect. 2	Read	I	
	Sect. 3	Read	I	
	Sect. 4	Read	I	
	Sect. 5	Read	I	
	Sect. 6	Read	I	
WHC-IP-0842	Sect. 5.18.1	Read	I	
	Sect. 15.9	Read	I	
ON-THE-JOB TRAINING				
Mechanical	Flow Diag		OJT	
	Elec Sect Details		OJT	
	Process Boards		OJT	
	Jumper Config		OJT	
	Equipment Location		OJT	
	Ident/Log	16-20	OJT	

Procedure / Course Title	Course No.	Hours	Type	Observer's Initials
Electrical	One line Diagrams		OJT	
	Connection Diagrams		OJT	
	Control Systems	16-20	OJT	
Instrumentation	IEFD Diag		OJT	
	Cont Diag		OJT	
	Arrangement Term/Det		OJT	
Engineering Practices				
WHC-CM-6-1	EP 1.3	Read	I	
	EP 1.6	Read	I	
	EP 1.7	Read	I	
	EP 1.10	Read	I	
	EP 2.2	Read	I	
	EP 4.1	Read	I	
	EP 4.2	Read	I	
Quality Assurance				
WHC-CM-4-2	QR 15.0	Read	I	
	QR 15.1	Read	I	
	QR 15.2	Read	I	
ALARA Program				
WHC-CM-4-11	Sect. 7.0	Read	I	

Procedure / Course Title	Course No.	Hours	Type	Observer's Initials
Industrial Safety				
WHC-CM-1-6	Chapter 3	Read	I	
WHC-CM-4-3	Sect. A-3	Read	I	
	Sect. E-2	Read	I	
WHC-SD-WM-HSP-002	All	Read	I	

Completion Signatures:

Training Observer

Date

Program Coordinator

Date

Manager, Design Field Verification Service

Date

RECEIPT ACKNOWLEDGEMENT				DSR No.	
Date _____ To _____ Bldg/Area _____ Phone _____			Originator _____ Bldg/Area _____ Phone _____		
Attached is a design package that includes:					
Type of Submittal		Original ☐		Mark up copy ☐	
Reason for Submittal		Review ☐		Approval ☐	
Document No.	Rev	Document No.	Rev	Document No.	Rev
Disposition is required within 10 working days of assigned date above. Extension requires approval of originator.					
Please Sign Acknowledging Receipt					
Signature _____				Date _____	

Distribution: White - Originator Yellow - Addressee When Design Package Returned
Pink - Addressee When Design Package Issued for Action

BC 5080 365 (11/89)

COMPONENT IDENTIFICATION WORK SHEET

Drawing Number: _____ Sheet: _____ Revision: _____

Drawing Title: _____

Facility: _____ Location: _____

☐ MECHANICAL

☐ ELECTRICAL

☐ INSTRUMENTATION

Identification Number	Component Description	Tagging Required ?		Comments
		Yes	No	

Page ____ of ____

THIS FORM MUST BE ATTACHED TO EACH ENGINEERING DRAWING PACKAGE PROCESSED THROUGH CONFIGURATION DOCUMENTATION.

ENGINEERING DRAWING FIELD VERIFICATION PROGRAM

WHC-SD-WM-WP-072 (REV 3)