DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	Config. Mgmt. Systems	Date 12/2/94
Project Title/Work Order		EDT No. 609828
~~K Basins~~ KN Field Verificaton Program for K Basins		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
R.V. Atwood (3)	X0-20	X			
H.W. Booth	L4-89	X			
G.M. Davis	X1-80	X			
W.A. Frier	X3-74	X			
B.J. Hutchins	X3-74	X			
T. Laney	L4-89	X			
P.R. Kelly	X3-74	X			
J.M. Kurta	X3-74	X			
M.J. Langevin	X3-74	X			
R.L. Martell	S2-01	X			
D.W. Medford	X3-74	X			
M.A. Meier	X3-74	X			
J.G. Reder	L4-89	X			
J.B. Roberts	X3-74	X			
D.L. Schifferl	X3-74	X			
S.A. Slinn	X3-74	X			
G.W. Snyder	T7-28	X			
D.J. Thompkins	X3-74	X			
S.C. Wallace	X3-74	X			
W.R. Weir	L4-89	X			
Central File (2)	L8-04				
OSTI (2)	L8-07	X			

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ENGINEERING DATA TRANSMITTAL

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1. EDT 609828

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K Basins Cognizant Engineering	Configuration Mgmt Systems	N/A
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1	WHC-SD-SNF-FVP-001	1 - 26	0	~~K Basins~~ Field Veritificaton Program for K Basins	N/A	2	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
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2	1	Cog.Eng. H.W. Booth	~~H.W. Booth~~ for	12-1-94	L4-89	OSTI (2)			28-07		
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		Env.									
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2	1	S.A. Slinn		12/1/94	X3-74						

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H.W. Booth ~~H.W. Booth~~ for 12-1-94 Signature of EDT Originator Date	S.A. Slinn 12/1/94 Authorized Representative for Receiving Organization Date	W.R. Weir ~~W.R. Weir~~ 12-1-94 Cognizant Manager Date	[] Approved [] Approved w/comments [] Disapproved w/comments

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RELEASE AUTHORIZATION

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

APPROVED FOR PUBLIC RELEASE

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Niki L. Solis

KN

SUPPORTING DOCUMENT

1. Total Pages 26 ~~18~~

2. Title	3. Number	4. Rev No.
KN ~~K Basins~~ Field Verification Program for K Basins	WHC-SD-SNF-FVP-001	0

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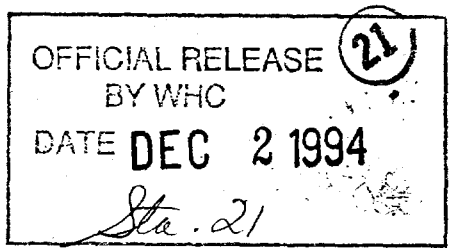
7. Abstract

The Field Verification Program establishes a uniform and systematic process to ensure that technical information depicted on selected engineering drawings accurately reflects the actual existing physical configuration. This document defines the Field Verification Program necessary to perform the field walkdown and inspection process that identifies the physical configuration of the systems required to support the mission objectives of K Basins. This program is intended to provide an accurate accounting of the actual field configuration by documenting the as-found information on a controlled drawing.

8. RELEASE STAMP



FIELD VERIFICATION PROGRAM

for

K BASINS

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FOREWORD

The Field Verification Program establishes a uniform and systematic process to ensure that technical information depicted on selected engineering drawings accurately reflects the actual existing physical configuration. This document defines the Field Verification Program necessary to perform the field walkdown and inspection process that identifies the physical configuration of the systems required to support the mission objectives of K Basins. The information obtained from the field inspection process, identified as-found, reflects the actual physical configuration and identifies any discrepancies discovered between the field condition and existing approved drawings. This program is intended to provide an accurate accounting of the actual field configuration by documenting the as-found information on a controlled drawing. The as-found drawing is the product of the Field Verification Program and is then used as the basis for a separate engineering evaluation process that will reconcile any discrepancies and verify compliance with design requirements.

The Field Verification Program for K Basins is based upon principles successfully implemented at the Tank Waste Remediation System and the Plutonium Finishing Plant. This program also aligns with the guidance criteria in the Assessment element for walkdowns and as-building process specified by DOE-STD-1073-93, "*Guide for Operational Configuration Management Program.*"

Because of the age of K Basins and the known deficiencies in the engineering documents, a Design Reconstitution Program will be developed and issued to address the engineering evaluation process and provide a methodology to upgrade or, where necessary, recreate required documentation. The Design Reconstitution Program will be coupled with the Field Verification Program to ensure that the as-found physical configuration is verified, through a design verification, to be consistent with the design requirements. The integration of the Field Verification Program, the engineering design verification process, and the Design Reconstitution Program will be defined in the Configuration Management Plan for K Basins.

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1.0 PURPOSE

This document defines the K Basins Field Verification Program (FVP) on selected drawings for systems required to support successful completion of the Operational Readiness Review (ORR). This program (1) documents, via as-found drawings (which includes newly-generated drawings), the physical configuration of the facility and (2) identifies any discrepancies between the as-found configuration and associated approved and released engineering drawings.

2.0 OBJECTIVE

The FVP establishes an accurate accounting (as-found) of the existing physical configuration that enables the engineering process (through an as-building program) to validate this as-found condition to be consistent with the design requirements. The FVP is the first major element that documents the existing physical condition and integrates this with the engineering verification process that will establish accurate (as-built) K Basins engineering drawings.

3.0 SCOPE

This FVP consists of the processes necessary to document and to independently verify the field configuration of specified structures, systems, and components (SSC) within K Basins.

This FVP will:

- Establish task responsibilities.
- Specify the method for conducting a walkdown (field inspection).
- Identify and document discrepancies among existing K Basins' hardware, established as SSCs, and their associated drawing(s).
- Disposition configuration discrepancies.
- Provide the process to establish field verified drawings that accurately depict the configuration of SSCs.
- Develop quality records that attest to the integrity between SSCs and their associated drawings.
- Establish the necessary interfaces of the design verification process to create as-built drawings.
- Convert selected drawings from manual to computer-aided drafting (CAD) format.

The FVP produces as-found drawings that reflect the actual field condition and, when verified through the engineering process to be in agreement with the design requirements, will produce as-built drawings that will support the safe operation of K Basins.

This field verification effort is exempt from metrication requirements in accordance with DOE/RL-94-0070, Hanford Metric Implementation Plan, Appendix C, items 4 and 5.

4.0 DEFINITIONS

as-built drawing - an engineering drawing that has been validated through field inspection to reflect the actual (as-constructed/as-installed) configuration of an SSC and verified to be consistent with the design requirements.

as-found drawing - an engineering drawing that reflects the actual physical configuration and identifies any discrepancies with currently approved and released facility documentation.

check print - a copy of a drawing used for comparison or verification.

concealed component - components that are hidden from view, or those for which visual observation is not possible because of safety or physical constraints.

discrepancy - a physical difference between what is (is not) shown on the drawing when compared to what is actually in the field and includes differences in labeling information and component identifier.

engineering drawing - a document that depicts by means of graphics, pictorial, and/or textual presentations the form, fit, and function requirements of SSCs.

field verification - the process of identifying the engineering drawings and all associated changes, performing a field walkdown, documenting the as-found condition, and reconciling any differences. This process may also include the testing of systems and components to ensure compliance with functional requirements.

independent checking - a review of the field verified drawings conducted by individuals who have not participated in the walkdown of the SSC.

mission-essential drawing - an engineering drawing (including essential) that depicts information that is identified as critical to the successful completion of the K Basins mission.

verification package - a quality record that documents the elements of the walkdown/field verification process.

walkdown (field inspection) - a visual inspection of SSCs to identify the as-found physical configuration and any discrepancies with currently approved facility documentation.

5.0 RESPONSIBILITIES

5.1 K Basins Cognizant Engineering Manager

The K Basins Cognizant Engineering manager is the design authority and is responsible for ensuring that the provisions of the FVP are implemented on systems/components under his/her cognizance. The responsibilities include:

- Developing, implementing, and controlling this FVP.
- Overall control of all K Basins drawings.

- Ensuring cognizant engineers support the field verification effort in accordance with this FVP and WHC-IP-1026, EPG-1.0 and EPG-2.0.

- Resolving or assigning responsibility for resolving discrepancies generated by the walkdown process.

5.2 K Basins Cognizant Engineer

In addition to the cognizant engineer duties identified in WHC-IP-1026, EPG-5.2, the K Basins cognizant engineer's responsibilities include:

- Preparing the Design Services Request (DSR) to identify the systems and system boundaries to initiate the field verification process described in this document.

- Assisting, where appropriate, in the walkdown activities of systems under his/her cognizance.

- Approving the completed verification package.

- Transmitting the verification package to the Records Holding Area as a life-time quality record in accordance with the Records Inventory and Disposition Schedule (RIDS).

5.3 100/200 Area Facility Design Services Manager

The 100/200 Area Facility Design Services Manager is responsible for the control of all original drawings (new and revised) during the field verification process. The responsibilities include:

- Ensuring that all walkdown personnel are qualified and trained to perform walkdown functions and, if necessary, imposing additional training and require proficiency demonstration before allowing individuals to work independently.

- Assigning drafters/designers for the preparation of drawings.

- Conducting an oversight review of revised drawings before submitting the drawings to the cognizant engineer or to the independent checker.

- Ensuring completed verification packages are assembled and submitted to the cognizant engineer for approval as the quality record for the verification effort.

- Coordinating with Checking Services on independent checking requirements and scheduling.

- Scheduling and coordinating personnel, as specified in this FVP, to open specific panels, cabinets, motor control centers, etc., to support visual observation for verification.

5.4 Checking Services

Checking Services is responsible for:

- Providing qualified and trained individuals to perform the independent checking task in accordance with WHC-CM-6-3.
- Ensuring that all independent checkers are qualified and trained.
- Coordinating the independent checking effort with other plant activities.

5.5 Quality Assurance

Quality Assurance (QA) is responsible for (1) reviewing this program to ensure compliance with WHC-CM-4-2, and (2) providing oversight surveillance of the FVP.

5.6 Work Management (Job Control System)

The K Basins Work Control Center is responsible for planning, controlling, and scheduling JCS work requests required for the field walkdown activities.

6.0 FIELD VERIFICATION PROCESS

This process includes scope definition, pre-walkdown activities, walkdown activities, results review, preparing as-found drawings, and verification package close-out. See Appendix A for the FVP flow process.

6.1 Defining the Scope of the Verification Package

The technical information that essential or support drawings present is system dependent and is based on the need to meet the facility mission, the final safety analysis report (FSAR), and the needs of the operations and system users (e.g., "mission-essential"). This information is developed by the cognizant engineer and transmitted to Design Services via a DSR. The cognizant engineer indicates the type of drawing (e.g., general arrangement drawing, piping and instrumentation diagram (P&ID), instrument engineering flow diagram (IEFD), etc.), the boundaries of the systems, components, equipment labeling data, piping sizes, instrumentation information, etc. On drawings with dimensional information, the dimensional accuracy to which components should be located will also be specified.

6.1.1 Developing Drawing Lists and Information Required on Drawings

K Basins (engineering) drawings shall present top level, system information using general arrangement, flow, piping and instrumentation, one-line drawings, etc. The specific informational requirements for verification shall be specified on the DSR and include as a minimum (optional requirements are identified with an asterisk):

- Type of drawing
- Identification of the drawing as essential, support, or general
- Boundaries of the system
- The extent to which the components are to be verified

- System number* (recommended for verification package tracking and interface)
- Safety classification of the system and/or equipment*
- Interfaces (functional/physical).*

This direction shall address disposition of special operating information such as operating modes (e.g., normally open), failure modes (e.g., fail closed), setpoints, and other information that cannot be verified through the walkdown process.

6.1.2 Producing the System Description

A system description should be developed by the cognizant engineer and approved by the K Basins Cognizant Engineering manager. The system description provides written information on the system to be verified and may apply to one or more verification package.

6.2 Conducting Pre-Walkdown Activities

6.2.1 Compiling the Verification Package

The cognizant engineer should perform a document search of his/her system before submitting the DSR to Design Services. For instance, all noted reference drawings should be examined for outstanding ECNs. This may mitigate having to disposition a later field discrepancy for lack of documentation. This may also reduce the need to continue to revise the DSR as new documents are discovered during the discrepancy resolution phase (see paragraph 6.3.3). Design Services will review the DSR for adequacy of instructions and completeness, resolve any questions, and compile any additional drawings and ECNs.

6.2.2 Incorporating Work-Completed ECNs Onto the Drawing

Incorporating work-completed ECNs onto a drawing (whether by CAD or marked-up drawing) before the walkdown, should only be accomplished when there is clearly a benefit to doing so. The decision to incorporate work-completed ECNs should be between the cognizant engineer and the walkdown team.

NOTE: Before incorporating a work-completed ECN, the cognizant engineer should conduct an ECN review to ensure that the only work-completed ECNs that are incorporated are those that should reflect the as-found configuration (i.e., do not incorporate a work-completed ECN when a later work-completed ECN cancels or changes the work that was previously completed).

6.2.3 Scheduling the Walkdown

If necessary, Design Services will schedule the walkdown through JCS of Work Management who will schedule operations support, craft personnel, health physics technologists, and ancillary support necessary to conduct the system walkdown. Design Services will prepare the necessary JCS work request to conduct the verifications.

6.2.4 Conducting the Facility Pre-Walkdown Briefing

Before commencing a field walkdown assignment, a pre-walkdown briefing with facility personnel may be performed (at the cognizant engineer's discretion) on the system to be inspected. This pre-walkdown briefing should address facility- or system-specific hardware attributes, major

components, system boundaries, level of detail required, safety hazards, and zone requirements. Walkdown personnel should have general knowledge on basic component types, system layouts, and standard symbols used on K Basins drawings.

6.3 Conducting the Walkdown

6.3.1 Visually Tracing the System

The walkdown shall be conducted by qualified and trained individuals. A comparison will be made between the physical configuration and the drawing configuration. Each portion, branch, and sector of a system will be visually traced to the system boundary to the fullest extent practicable. The verification team will perform a systematic, "hand-over-hand" walkdown of the system. Within the scope of the verification package (see paragraph 6.1.1), the team will clearly indicate on the drawing 1) areas that are inaccessible or under construction and 2) equipment that has been abandoned or is not in service.

NOTE: Unless otherwise specified in the DSR, walkdown surveillance methodology shall be used to conduct a field verification of the system to the fullest extent practicable. ALARA principles shall be applied and a JCS work request shall be used when methods other than walkdowns are required to physically verify field configuration.

6.3.2 Marking the Drawing

Marked-up drawings shall be used to identify the differences between the drawing and the physical configuration, and shall be signed and dated by the individuals who conducted the walkdown. The signatures attest to the fact that the individuals have visually observed and indicated concurrence that the marked-up drawing accurately documents the existing plant configuration for the parts of the drawing, not noted as inaccessible, contained within the boundaries being verified.

Highlighting of the drawings should not be construed to indicate that the component is correctly installed or that sub-components (resistors, capacitors, contacts, line connections, etc.) are correct. However, any observed material condition discrepancies in these areas shall be documented. See Appendix B for Drawing Mark-Up Standards.

Reference drawings may be used to assist walkdown personnel in the location of components within the boundaries of the walkdown. These reference drawings may provide information that show layout, elevation, or alternate system perspectives.

NOTE: The information on the marked-up field copy of the drawing may be transcribed onto a consolidated drawing if required for readability. The same mark-up convention will be used (see Appendix B).

6.3.3 Documenting the Differences

Noted discrepancies are reported on a discrepancy data sheet (DDS) (see Appendix C). Also recorded as discrepancies are those items that cannot be physically verified, including functional data and operating parameters such as set points and valve normal operating positions. The DDS item number is cross-referenced between the marked-up drawing and the DDS form for readability. The drawing number and zone location is included on the DDS to identify the location of each discrepancy

on the marked-up drawing. This will enable a reviewer to readily locate the discrepancy on the drawing. Each discrepancy shall be dispositioned by the cognizant engineer. See Appendix D for examples that may be verified.

For components that are not labeled in the field, the walkdown member notes the condition on the DDS. Components such as motors, flux monitors, transmitters, etc., may be inspected as "black boxes." No attempt will be made to inspect internal subcomponents except as requested by the cognizant engineer and as properly supported by an approved JCS work request.

Attention should be given to identifying support systems associated with major components (e.g., cooling water to pump bearings). This information, including a reference drawing, should be marked on the marked-up drawing and a system boundary flag indicated on the input/output side of the valve or component as directed by cognizant engineer.

During the walkdowns, general condition of facility material and housekeeping should also be observed and any irregularities or unusual conditions should be reported on the DDS. Examples of what to look for are as follows:

- Obvious physical damage to equipment
- Missing or illegible labels or tags
- Loose, bent, or missing supports and/or anchors
- Valve packing glands "bottomed out" or asymmetrical
- Leaks, e.g., water, oil, steam, etc.
- Missing, bent, or broken valve handwheels
- Missing or loose cover plates
- Gagged relief valves
- Unterminated cables showing bare wire
- Missing fuses
- Unauthorized temporary modifications
- Debris.

6.3.4 Justifying the Documented Difference

There needs to be an effort to substantiate or justify the difference(s) between the drawing and the field configuration (e.g., ECNs, JCS work requests, modification drawings, etc.). If the difference(s) cannot be resolved via the documents already in the verification package (see paragraph 6.2.1), a document search needs to be initiated.

1. If the documents can be found justifying the difference(s), determine the following:

   Are the documents part of an open JCS work request?

   - If YES, **is the configuration operating or in use by operations** (e.g., pressurized)? If so, the cognizant engineer work-completes the entire document, or initiates a new ECN to separate and supersede the work-completed portion from the non-work-completed portion on the affected governing document(s). If the configuration **is neither operating nor in use by operations**, then suspend incorporation of the difference into the as-found drawing pending completion of the work management package.

- If NO (e.g., the difference is substantiated by a work-completed ECN that has not been incorporated into the drawing), identify the document(s) for incorporation in the as-found drawing before release.

2. If the documents cannot be found justifying the difference(s), determine the following:

   Is the configuration **required for safe operation** of the system?

   - If NO, proceed to dispositioning the discrepancies.

     NOTE: *Normal safe operations requires accurate information and the expedited process provides this immediate update of information to allow operations to make decisions based on solid and verified design information. Since this scenario describes an unsubstantiated change to the field configuration that is not necessary for safe operations, the cognizant engineer should proceed with dispositioning the discrepancy.*

   - If YES, the cognizant engineer will determine if the configuration is **safe to operate**. If determined **not safe to operate**, then **shut down the process or take other immediate remedial action**. If the configuration **is safe to operate**, then disposition the discrepancy (i.e., discrepancy data sheet).

   Is the discrepancy disposition **accept-as-is**?

   - If YES, the cognizant engineer should prepare an ECN to justify or substantiate the revised drawing configuration. Sign the ECN as work-complete and incorporate the ECN into the as-found drawing.

   - If NO (i.e., the disposition is other that accept-as-is), determine the following:

     Should the hardware (physical configuration) be **restored to the drawing requirements**?

     - If YES, the cognizant engineer should ensure the preparation of a JCS work request to restore the configuration. An ECN is not required since the drawing is the governing document.

     - If NO, the cognizant engineer should prepare an ECN to describe the required changes (i.e., what should the configuration reflect?) and then ensure the preparation of a JCS work request to restore the configuration. For status of the "*current configuration*," contact the configuration documentation work stations.

6.4 Reviewing the Mark-Up Drawing

The cognizant engineer and design services review the discrepancies listed on the DDS and on the marked-up drawing and dispositions all noted discrepancies. For those discrepancies that involve areas that are inaccessible, determine if the condition is accept-as-is:

- If YES, Design Services documents the disposition and proceeds with converting the drawing to CAD format.

- If NO, the cognizant engineer attempts verification through **alternate means** (e.g., by surveillance, loop calibration, functional test, etc.).

6.5 Converting the Drawing to CAD Format

After disposition of all discrepancies is complete, the marked-up drawing(s) shall be used to develop a CAD drawing revision or a new CAD drawing in a format consistent with WHC-CM-6-3. Special emphasis on traceability between drawings is to be made to ensure that continuity and readability is achieved. The drawing generated at this phase is the "AS-FOUND" drawing. Design Services will conduct an internal peer review to verify that the drawing meets the requirements of the DSR, identifies all components with correct component identifiers, conforms to WHC-CM-6-3 requirements, and the CAD drawing accurately represents the marked-up drawing. After the information has been verified, the marked-up drawing is placed in the verification package. The CAD drawing will not be independently checked until all discrepancies are dispositioned.

6.5.1 Checking the Drawing

A check print will be developed after all walkdown information is incorporated into the drawing. This check print is used by the independent checker to ensure that the original walkdown and drawing incorporation are correct. This approved check print will be added to the verification package.

The cognizant engineer determines if the drawing is a product of the "*expedited as-built process*":

- If NO, proceed to selecting drawings for the reverification sample (see paragraph 6.5.2).

- If YES, **release** the drawing as an "**as-built**" ... **AND**

  1. Place the drawing into the design reconstitution program parallel with its release to enable a comprehensive document search to be initiated (see paragraph 6.7).

  2. Place the drawing into the population of drawings from which a reverification sample will be selected.

6.5.2 Reverifying Random Sample of Drawings

The intent of this "in-process self-assessment" is to provide management with an acceptable "level of confidence" in the FVP. Under direction of the cognizant engineer, selected as-found drawings shall be validated through a visual reverification process. The results of the process shall be recorded on a copy of the as-found CAD drawing stamped "DRAFT."

1. Drawings identified as "Essential" and Safety Classification 1 or 2 systems and/or equipment are to be visually reverified against the field configuration using a minimum 20% sampling size of the system represented by the drawing.

2. Drawings identified as "Essential" with Safety Classification 3 or lower system and/or equipment are to be visually reverified against the field configuration using a minimum 10% sampling size of the system represented by the drawing.

3. The actual data that constitutes the sample will be the decision of the cognizant engineer. Sampling may be selected by a percentage of sheets (e.g., 4 sheets of a 20 sheet drawing), by a percentage of each sheet (e.g., percentage defined by zones), by physical area or component locations (e.g., all of system in Building 105KE), by random selection of the components that make up the drawing, or by any other method that shows a percentage correlation between what is on the drawing and what is in the field.

Design Services provides the reverifier with a copy of the CAD drawing and the verification package. Based on the requirements of the DSR, this FVP, and WHC-CM-6-3, the reverifier performs a surveillance walkdown of a portion of each system, comparing the existing field configuration with the draft CAD drawing. Concealed components need not be verified except to ensure that the components are in fact concealed.

6.5.3 Incorporating Reverification Corrections

The reverifier will annotate the draft CAD drawing in the same manner as a field marked-up drawing. The area verified will be highlighted in yellow, corrections in red, unverified areas in green, and black reserved for signature and disposition annotations. The cognizant engineer signs the draft CAD drawing indicating that the portion of the drawing highlighted in yellow constitutes the correct percentage of the drawing that was to be verified. This annotated draft CAD drawing will be inserted into the verification package.

6.6 Closing Out the Verification Package

6.6.1 Assembling the Package

The verification package shall be retained by Design Services as a facility quality record for the drawings during the life of this FVP and upon completion of this program shall be transmitted by the cognizant engineer to the Records Holding Area as a life-time quality record in accordance with RIDS. The verification package contains:

- Verification package index
- Design Services Request
- Discrepancy Data Sheet
- Original check print(s) (signed)

- Annotated draft CAD drawing(s) (signed) if drawing chosen for random check
- Marked-up drawing(s).
- AS-FOUND drawing.

Each verification package shall be uniquely numbered. The verification package number shall be formatted as follows:

```
┌ Field Verification Program
│   ┌ System Number
│   │   ┌ Sequential number of the verification package assigned by Design Services
│   │   │
FVP-SS-XXX
```

The verification package number shall appear in the upper right corner of each page or in the space provided and the index shall be the first page of the package.

6.6.2 Transferring Outstanding ECNs to New Drawing

When new drawings are issued to consolidate or replace older drawings (with outstanding ECNs against them), an evaluation should be made to determine which of these ECNs will be retained against the new drawings.

ECNs that are currently in the Job Control System and are non-work-completed, including partially completed, shall be "transferred" (or reassigned) to the new drawings using a change ECN (in accordance with WHC-CM-6-1, EP-2.2).

6.6.3 Canceling Superseded Drawings and Associated ECNs

Drawings that have been consolidated or replaced by a new CAD drawing (i.e., new drawing number is issued) and all associated ECNs that will not be "transferred" (see paragraph 6.6.2), shall be canceled in accordance with WHC-CM-6-1, EP-2.2.

6.7 Interface With the Design Reconstitution Program

Each of the "AS-FOUND" drawings requires an engineering evaluation to ensure consistency with the design requirements before being authorized for formal release as an "AS-BUILT" drawing. This design verification element will be established as part of the design reconstitution program to ensure an adequate engineering assessment and complete documentation to support the system's design, operating, and maintenance requirements. The expedited as-built process provides a "bridge" or "interim as-built" to allow operations to continue with the safe operation of mission-essential systems until the design reconstitution program is invoked to restore complete and supportable documentation (e.g., design inputs, accurate operating and maintenance procedures, etc.).

7.0 REFERENCES

DOE-STD-1073-93, "Guide for Operational Configuration Management Program."

DOE/RL-94-0070, Hanford Metric Implementation Plan.
Appendix C, "Exception Guidance."

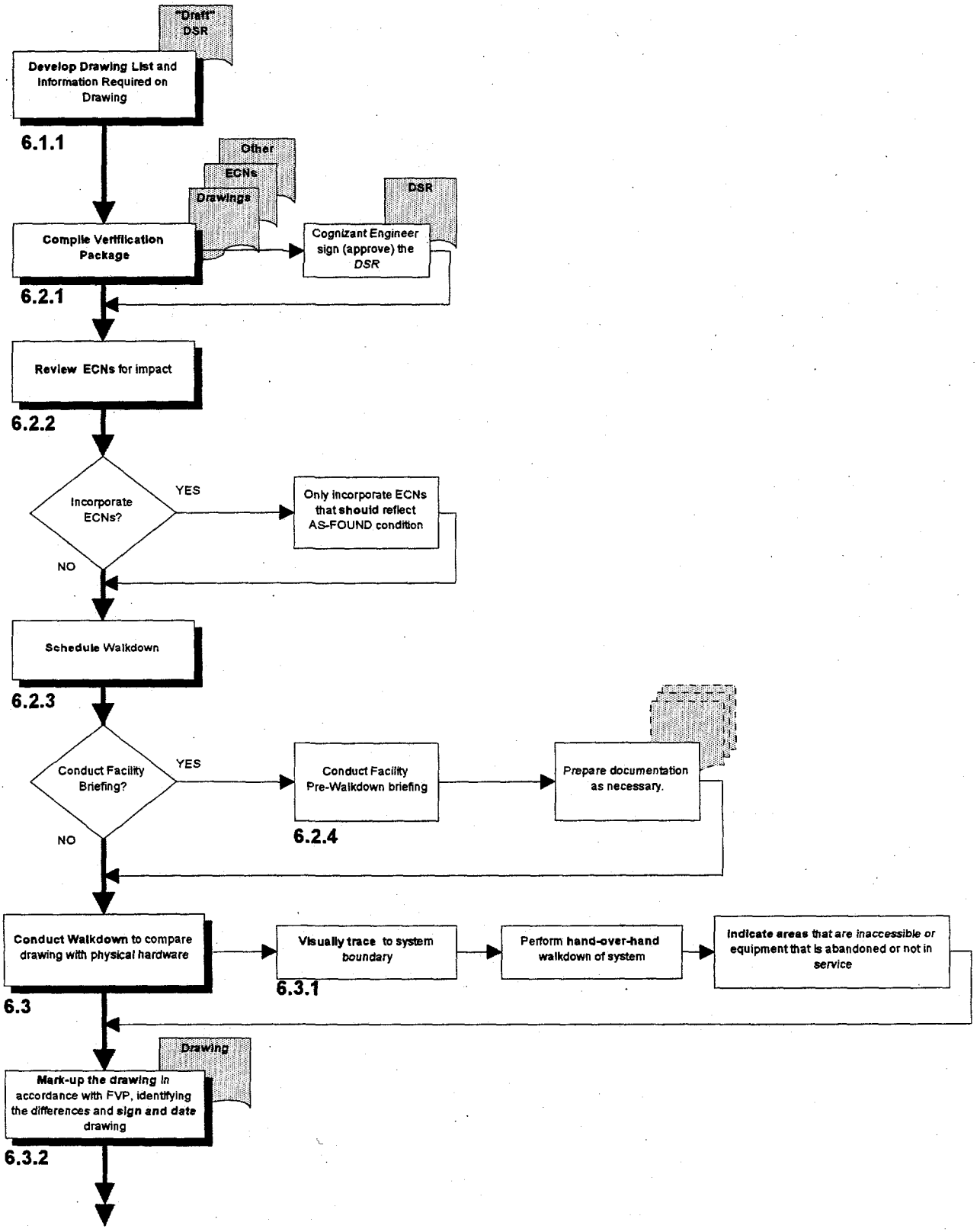
WHC-CM-4-2, Quality Assurance Manual.

WHC-CM-6-1, Standard Engineering Practices.
EP-2.2, "Engineering Document Change Control Requirements."

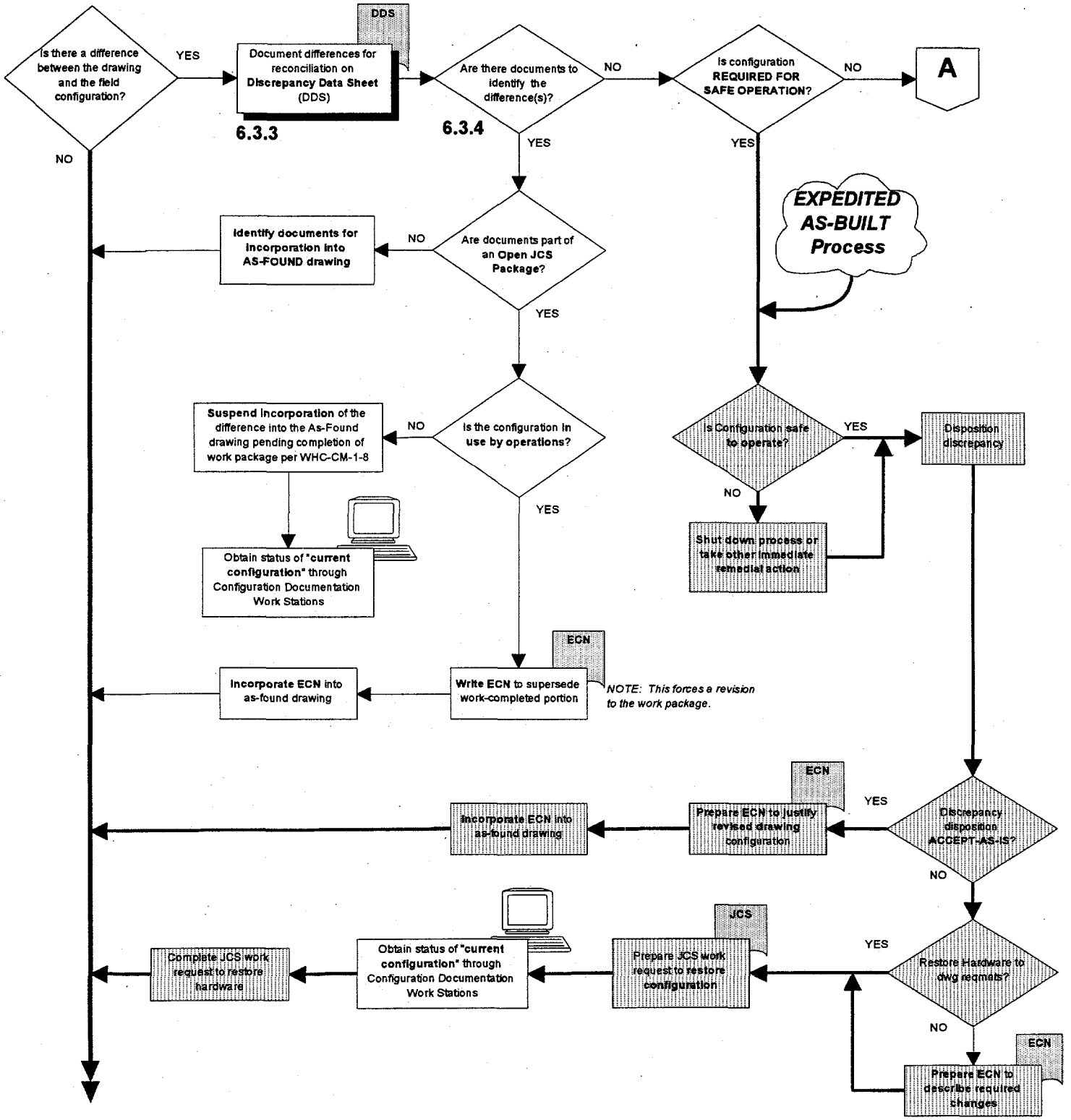
WHC-CM-6-3, Drafting Standards Manual.

WHC-IP-1026, Engineering Practice Guidelines.
EPG-1.0, "Engineering Process."
EPG-2.0, "Engineering System Design Control."
EPG-5.2, "Typical Cognizant Engineer Responsibilities."

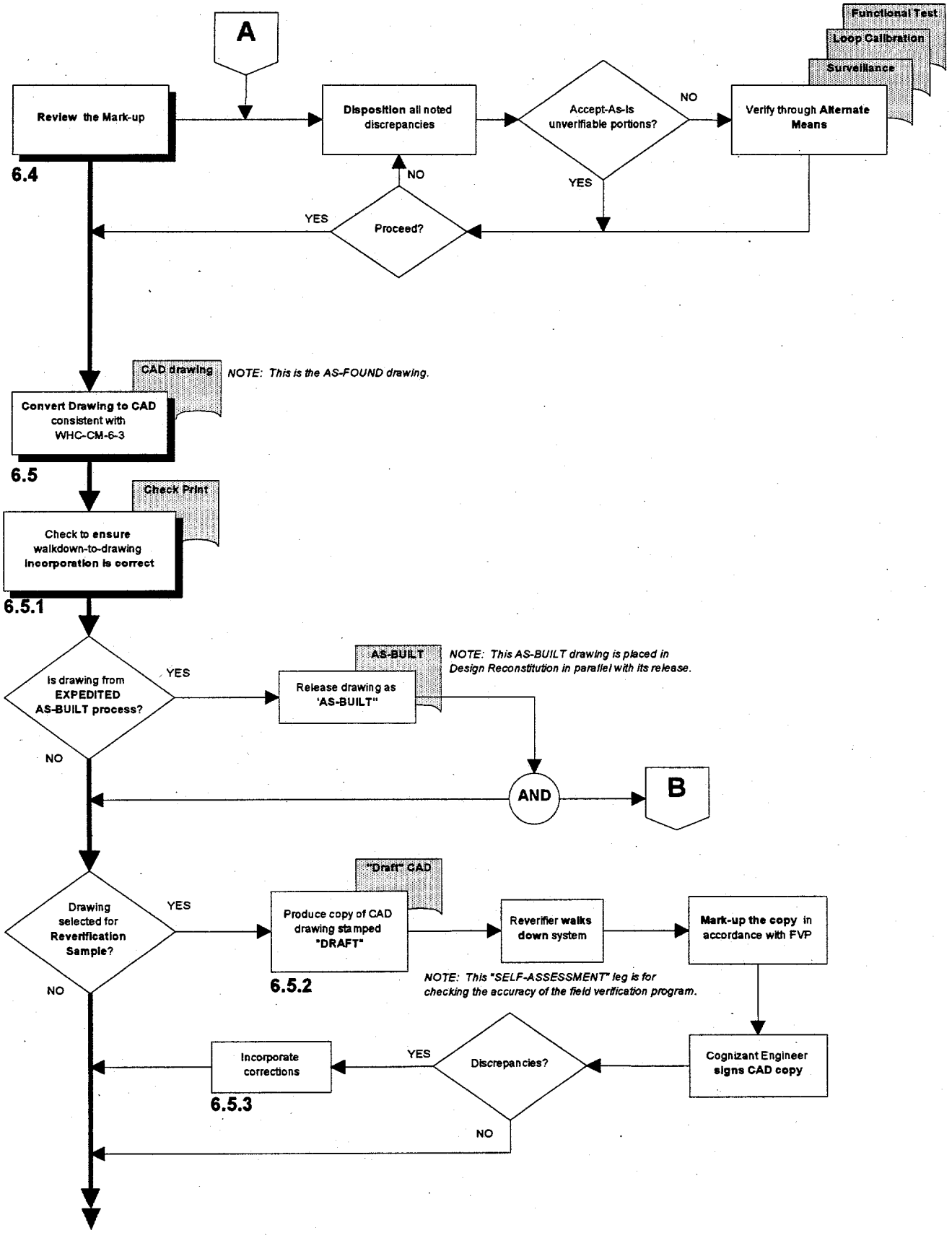
APPENDIX A


"Draft" DSR
Develop Drawing List and Information Required on Drawing
6.1.1
Other
ECNs
Drawings
DSR
Compile Verification Package
Cognizant Engineer sign (approve) the DSR
6.2.1
Review ECNs for impact
6.2.2
Incorporate ECNs?
YES
Only incorporate ECNs that should reflect AS-FOUND condition
NO
Schedule Walkdown
6.2.3
Conduct Facility Briefing?
YES
Conduct Facility Pre-Walkdown briefing
Prepare documentation as necessary.
6.2.4
NO
Conduct Walkdown to compare drawing with physical hardware
Visually trace to system boundary
Perform hand-over-hand walkdown of system
Indicate areas that are inaccessible or equipment that is abandoned or not in service
6.3
6.3.1
Drawing
Mark-up the drawing in accordance with FVP, identifying the differences and sign and date drawing
6.3.2

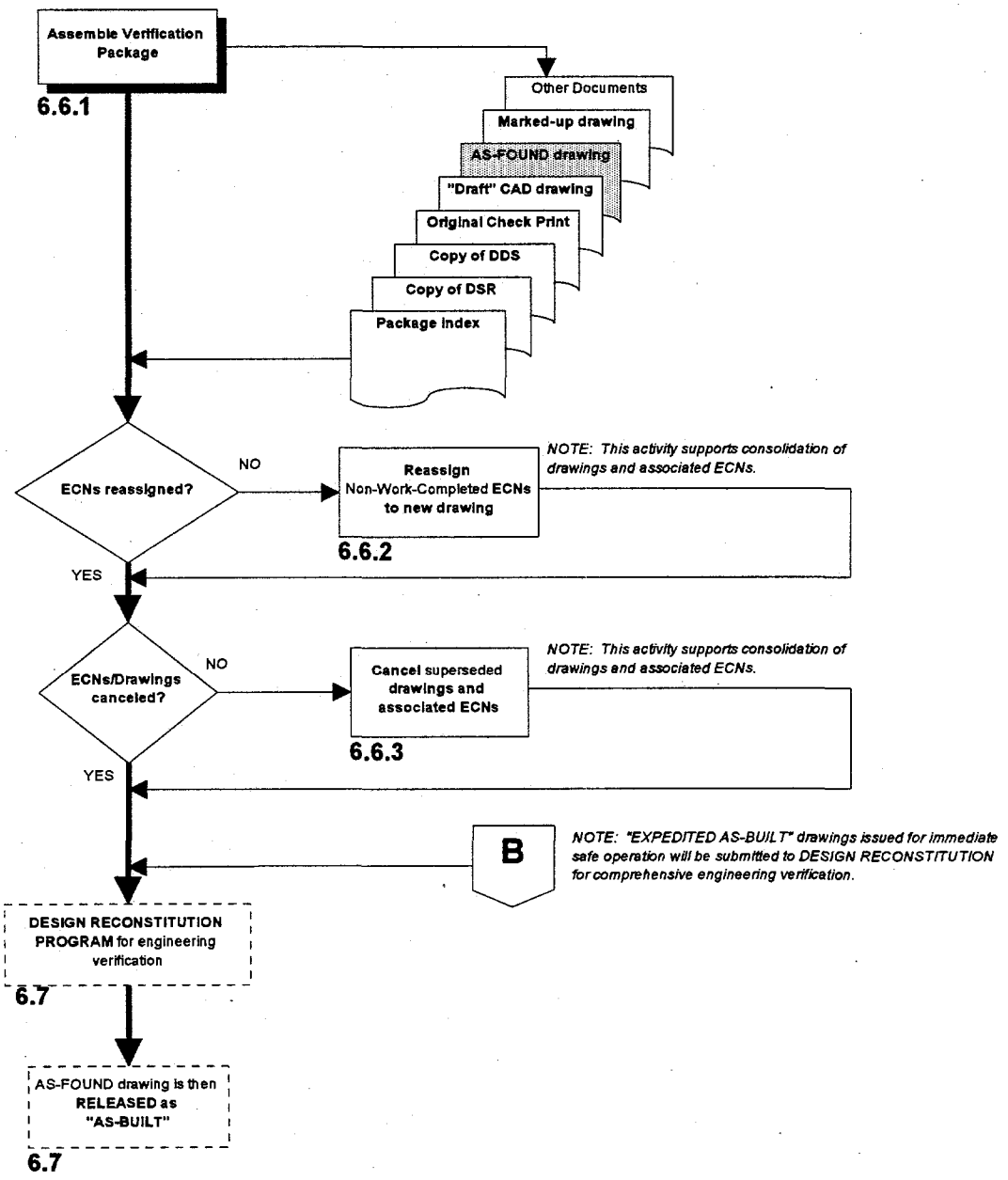
APPENDIX A


Is there a difference between the drawing and the field configuration?
YES
NO
DDS
Document differences for reconciliation on Discrepancy Data Sheet (DDS)
6.3.3
Are there documents to identify the difference(s)?
6.3.4
NO
YES
Is configuration REQUIRED FOR SAFE OPERATION?
NO
A
YES
EXPEDITED AS-BUILT Process
Are documents part of an Open JCS Package?
NO
YES
Identify documents for incorporation into AS-FOUND drawing
Is the configuration in use by operations?
NO
YES
Suspend incorporation of the difference into the As-Found drawing pending completion of work package per WHC-CM-1-8
Obtain status of "current configuration" through Configuration Documentation Work Stations
Is Configuration safe to operate?
YES
NO
Disposition discrepancy
Shut down process or take other immediate remedial action
ECN
Write ECN to supersede work-completed portion
NOTE: This forces a revision to the work package.
Incorporate ECN into as-found drawing
ECN
Prepare ECN to justify revised drawing configuration
YES
Discrepancy disposition ACCEPT-AS-IS?
NO
Incorporate ECN into as-found drawing
JCS
Prepare JCS work request to restore configuration
YES
Restore Hardware to dwg reqmts?
NO
Obtain status of "current configuration" through Configuration Documentation Work Stations
Complete JCS work request to restore hardware
ECN
Prepare ECN to describe required changes

APPENDIX A


A
Review the Mark-up
6.4
Disposition all noted discrepancies
Accept-As-Is unverifiable portions?
NO
YES
Verify through Alternate Means
Functional Test
Loop Calibration
Surveillance
NO
YES
Proceed?
YES
CAD drawing
NOTE: This is the AS-FOUND drawing.
Convert Drawing to CAD consistent with WHC-CM-6-3
6.5
Check Print
Check to ensure walkdown-to-drawing incorporation is correct
6.5.1
Is drawing from EXPEDITED AS-BUILT process?
YES
AS-BUILT
Release drawing as "AS-BUILT"
NOTE: This AS-BUILT drawing is placed in Design Reconstitution in parallel with its release.
NO
AND
B
Drawing selected for Reverification Sample?
YES
"Draft" CAD
Produce copy of CAD drawing stamped "DRAFT"
6.5.2
Reverifier walks down system
Mark-up the copy in accordance with FVP
NOTE: This "SELF-ASSESSMENT" leg is for checking the accuracy of the field verification program.
NO
Incorporate corrections
6.5.3
YES
Discrepancies?
Cognizant Engineer signs CAD copy
NO

APPENDIX A


Assemble Verification Package
6.6.1
Other Documents
Marked-up drawing
AS-FOUND drawing
"Draft" CAD drawing
Original Check Print
Copy of DDS
Copy of DSR
Package Index
ECNs reassigned?
NO
YES
Reassign Non-Work-Completed ECNs to new drawing
6.6.2
NOTE: This activity supports consolidation of drawings and associated ECNs.
ECNs/Drawings canceled?
NO
YES
Cancel superseded drawings and associated ECNs
6.6.3
NOTE: This activity supports consolidation of drawings and associated ECNs.
B
NOTE: "EXPEDITED AS-BUILT" drawings issued for immediate safe operation will be submitted to DESIGN RECONSTITUTION for comprehensive engineering verification.
DESIGN RECONSTITUTION PROGRAM for engineering verification
6.7
AS-FOUND drawing is then RELEASED as "AS-BUILT"
6.7

APPENDIX B

Drawing Mark-Up Standards

The following drawing markup standards shall be used for walkdowns:

- Yellow - Indicates that the field configuration agrees with the drawing.
- Red - Indicates differences between the field configuration and the drawing. Additions/corrections to the drawings are shown in red.
- Green - Indicates areas that were not verified through the field verification and is used to show the boundary of the walkdown.
- Black - Used to indicate non-engineering notes and annotations such as DDS reference numbers, signatures, and other information not covered by other color coding.
- The marked-up field copy of the drawing is to clearly show the portion of the drawing that was visually verified and the areas that were not verified during the field verification with an explanation of why the area was not verified.

APPENDIX C

DISCREPANCY DATA SHEET

FVP-____-____	**DISCREPANCY DATA SHEET**	Page __ of __
System _____ _____ Safety Classification _____		Dwg. No. _____ Sheet No. _____ Revision No. _____
Item No.	Discrepancy Description	Disposition
Walkdown Member: _____ (Signature) (Date)		Cognizant Engineer: _____ (Signature) (Date)

APPENDIX D

EXAMPLES OF ITEMS THAT MAY BE VERIFIED

- Piping arrangements are as represented on engineering drawings.
- Component identification numbers found in the field agree with the drawing.
- Component is correctly identified with the correct symbol.
- Components are located in correct relative position within the system.
- Components shown on the drawings are actually installed in the plant.
- Components are accurately reflected on the drawing (e.g., building, room number, elevation).
- Components are identified with appropriate scale, ratings, flow, etc.