WIPP Preparation Guide for Plant and System Design Description Documents

Cognizant Department: ENGINEERING

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Prepared for the

U.S. Department of Energy

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Westinghouse Electric Corporation

Waste Isolation Pilot Plant

Carlsbad, New Mexico

As of 04/02/91

WIPP PREPARATION GUIDE FOR PLANT AND SYSTEM DESIGN DESCRIPTION DOCUMENTS

WP 09-10

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Change History

Pages ii, II-2, II-3, IV-1, and Addendum - 04/02/91

4/2/91

00483

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Acronyms

ALARA - As Low as Reasonably Achievable
CAMS - Continuous Air Monitors
CC&D - Configuration Control and Drafting
CE - Cognizant Engineer
DBA - Design Basis Accident
DBE - Design Basis Earthquake
DBF - Design Basis Fault
DBFL - Design Basis Flood
DOE - Department of Energy
ECO - Engineering Change Order
HVAC - Heating, Ventilation and Air Conditioning
SDD - System Design Description
WIPP - Waste Isolation Pilot Plant

I. INTRODUCTION

This writer's guide defines the purpose, scope, organization, and content of the WIPP SDD documents and provides a unified approach to their preparation and use by the Project as a principal means of establishing and maintaining plant design requirements.

The primary responsibility for a SDD is that of the cognizant system design department. Within that organization, the assigned CE is responsible for the preparation and timely revisions of the document per WP 09-007.

Revisions shall be initiated per WP 09-007 and implemented by an ECO.

Revisions shall be documented within the individual SDDs by an ECO. CC&D shall maintain SDD documentation per WP 09-006.

Management of the document control (distribution, etc.) shall be controlled by WP 15-103.

II. SDD FORMAT

Seven major topics shall be subdivided and numbered as follows:

SUMMARY

1.0 PRIMARY FUNCTIONS

2.0 DESIGN REQUIREMENTS

- 2.1 General
- 2.2 Subsystem General Requirements
- 2.3 Operation
- 2.4 Structural
- 2.5 General Arrangement and Essential Features
- 2.6 Maintenance
- 2.7 Surveillance and In-Service Inspections
- 2.8 Instrumentation and Control
- 2.9 Interfacing Systems
- 2.10 Quality Assurance
- 2.11 Codes and Standards
- 2.12 Reliability Assurance

3.0 DESIGN DESCRIPTION

- 3.1 Summary
- 3.2 Detailed System Description
- 3.3 System Performance Characteristics
- 3.4 System Arrangement
- 3.5 Component Design Descriptions
- 3.6 Instrumentation and Control
- 3.7 System Interfaces

4.0 OPERATIONS

- 4.1 Startup
- 4.2 Normal Operations
- 4.3 Infrequent Operations
- 4.4 Shutdown

5.0 SYSTEM LIMITATIONS, SET POINTS, AND PRECAUTIONS

6.0 OFF-NORMAL EVENTS AND RECOVERY

- 6.1 Loss of Power
- 6.2 Loss of Pneumatics
- 6.3 Fire
- 6.4 Radioactive Particulate Release
- 6.5 Abnormal Atmospheric Conditions
- 6.6 Design Base Seismic/Tornado
- 6.7 Design Base Accidents

7.0 MAINTENANCE

7.1 Maintenance Approach
7.2 Corrective Maintenance
7.3 Preventive Maintenance
7.4 In-Service Inspection
7.5 Surveillance

Appendix - An appendix shall be provided after the major topics and shall include the following:

- References
- Definitions and Acronyms
- Equipment List
- Engineering Drawings
- List of SDDs
- List of Interfacing Systems

Numbering and Titles - SDDs shall be numbered and titled as indicated on the latest, controlled project systems and subsystems list. SDDs that include additional systems shall be numbered according to the primary system. They are as follows: 4/2/91

- AU00 - Underground Facility and Equipment
- CA00 - Compressed Air System
- CF00 - Confinement Facilities
- CM00 - Central Monitoring System
- CW00 - Chilled Water System
- ED00 - Electrical System - Surface and Underground
- EM00 - Effluent and Environmental Monitoring
- EU00 - Underground Testing and Monitoring
- FP00 - Fire Protection System
- GC00 - General Civil and Structural
- HV00 - HVAC
- PC00 - Plant Communications
- PP00 - Plant Protection
- PV00 - Plant Vacuum System
- RM00 - Radiation Monitoring
- UH00 - Underground Hoisting System
- VU00 - Ventilation
- WD00 - Water Distribution
- WH00 - Waste Handling Equipment

Where technically appropriate, interfacing systems may be described in a single SDD (for example, the Radiation Monitoring and Plant Vacuum Systems). In those cases, each system will be fully described; and the description will include the system and component interfaces in an integrated manner. In cases where more than one system is included in an SDD, one-to-one traceability between defined systems and SDDs will be maintained through a mapping document or index. The mapping index will be included as an appendix to the Configuration Management Plan (WP 09-9).

Subsystem(s) identification numbers will be incorporated into the [illegible] of the document as they apply to the description of the main system(s). Subsystem numbers shall not be used in a SDD title.

The title page shall list the SDD title, SDD number, document revision, and initiating ECO and ECP number. 4/2/91

The table of contents shall list the SDD title, SDD number, and title of each numbered major topic.

Figures and tables shall be integrated within the text near the page where they are discussed.

Numbering of the figures and tables shall be sequential within the section where located.

A simple flow diagram explaining the relationship of the primary system functions to the primary design requirements shall be developed. This figure will appear in the Primary Function Section.

III. SDD CONTENT

SUMMARY

This section contains a brief summary of the functions, scope, and numbering of the system. It is recommended not to exceed one page.

The minimum number of topics within an SDD shall be four and shall include the following:

- A Summary
- 1.0 Primary Functions
- 2.0 Design Requirements
- 3.3 System Performance Characteristics
- Other sections shall be used optionally at the discretion of a cognizant design manager

1.0 PRIMARY FUNCTIONS

This topic describes what the system must do to fulfill its mission in support of the project.

When writing function statements, it is essential not to confuse them with requirement statements. Functions are statements of the purposes of the system. Requirements are constraints which focus the design to achieve the purposes.

Several function statements are normally required to describe all relevant aspects. Properly constructed function statements are characterized by action verbs and satisfy the following general requirements:

- Function statements shall be concise and specific.
- Taken as a whole, the statements shall be a comprehensive set of purposes of the system.

2.0 DESIGN REQUIREMENTS

2.1 General and 2.2 Subsystem General Requirements

These topics establish the requirements which the design of the system must satisfy.

Specifying design requirements requires a delicate balance between too much detail and not enough. Care must be exercised not to over-specify requirements. Sufficient detail must be given such that the design basis is adequately defined in terms of constraints, while still allowing freedom for optimization of the design. Design requirements should be specific, definitive, and concise; generalities and platitudes should be avoided (i.e., "the system is to be reliable or safe," is too vague).

When conceptual or advanced design implementations already exist, it is essential that requirements reflect actual conditions, not a replication of a pre-existent design. A thorough review of unincorporated ECOs will be necessary.

Design requirements must be verifiable. Objective evidence must be obtainable and demonstrate that the requirement was satisfied by the design.

The technical basis for specific requirements shall be contained in supporting documents, and/or test data, and not be included in the SDD. The source of the requirement should be referenced immediately following the requirement statement.

Failure modes shall be considered when establishing system design require-ments. Some system failure modes may require, for example, installation of redundant equipment to prevent loss of a vital function upon equipment failure. Others may simply require that the system not damage itself or others upon failure.

Within the scope of design requirements, process requirement statements provide a supportive role. Process requirements are the process inputs and outputs manipulated by the system to perform its function.

Most process requirement statements will be quantitative in nature. These requirements are usually parametric limits placed on variables associated with the process being described or performed by the system (i.e., electrical power ratings, limiting pressures, temperatures, or flows).

Whenever a quantitative process requirement is given, a suitable tolerance or accuracy requirement must also be given.

2.3 Operational

This topic identifies requirements associated with unique functions of the system.

2.4 Structural

This subtopic provides such design requirements as: 1) design pressure and temperature; 2) load combinations; 3) seismic design requirements; 4) design for natural phenomena, such as wind loads; (include DBE, DBF, DBFL, and DBA) and 5) basic materials for construction.

2.5 General Arrangement and Essential Features

This subtopic provides requirements for the unique features, arrangements, con-straints, etc., that physically characterize the system configuration and its location.

2.6 Maintenance

This subtopic identifies items such as access and space requirements for maintenance and must address ALARA requirements relative to the system.

2.7 Surveillance and In-Service Inspections

This subtopic identifies items such as required access provisions and periodic inspection requirements.

2.8 Instrumentation and Control

This subtopic provides instrumentation and control requirements for system operation and control with identification of those specific access, redundancy, and calibration requirements or constraints that apply.

2.9 Interfacing Systems

This subtopic provides a list of the functions and services that are to be provided by interfacing systems.

2.10 Quality Assurance

This subtopic defines quality assurance requirements for design, construction, test, and operation of the system.

2.11 Codes and Standards

This subtopic provides a list of codes, standards, regulatory requirements, DOE Orders, etc., to be applied to the system design, construction, and operation and to the individual components of that system.

2.12 Reliability Assurance

Reliability requirements should be included for systems, subsystems, and components which are identified as items critical to reliability. These requirements should be stated as specifically as practical for the particular system involved (i.e., 100 percent redundant set of CAMS is to be provided at the Exhaust Shaft Outlet Effluent Monitoring Station).

3.0 DESIGN DESCRIPTION

This section contains a description of the system, its components, the system arrangement, and the system performance characteristics. The design description should be of sufficient depth to show how the design satisfies the system functions and design requirements. Specific design features and parameters (size, operating ranges, etc.) should be included in the text or by tabulations and drawings (volume and flow of air should be included when describing a ventilation system).

3.1 Summary

The summary gives a brief general description of the system and its configuration. The relationship of the system to the entire facility should be given, including plot plans, if available.

3.2 Detailed System Description

This subtopic contains a detailed discussion of the system design. The system flow paths for its various operating modes should be completely described to clearly show how the system functions and how it satisfies the design requirements. In this particular description, the operating and design data should be included, and reference should be made to the system process and instrument drawing, and to other drawings needed for effective design description.

3.3 System Performance Characteristics

This subtopic provides the system performance characteristics under the various normal and infrequent operating modes and off-normal operating conditions.

3.4 System Arrangement

This subtopic provides a description of the system arrangement with reference to include system drawings. Features such as piping arrangement, provisions for maintenance access, or inspection should be included.

3.5 Component Design Description

This subtopic provides a description of the individual system components. This design parameters and the principle design features of each component should be identified and component operation should be described. Simplified outline drawings of the components should be included in the text to facilitate understanding of the component design and operation. Detailed component drawings may be included in the list of references. Component data sheets may be included in the list of references. Component data sheets may be included in this section or referenced in the appendix.

Alignment, tolerances, and stackup of system components important to the system design should be identified in this subsection. Analyses and drawings that show how the system design satisfies these dimensional interfaces should be included as a reference or appendix to the SDD.

3.6 Instrumentation and Control

This subtopic provides a description of the system instrumentation, controls, and interlocks. The instrumentation associated with operation of the system should be defined, including the type, range, accuracy, set point, and location of sensor and instrument readout, with appropriate reference to the process and instrument drawing. Instrumentation readout and control location should be clearly identified. Component performance information should be provided, when it will aid in understanding the system design, operation and maintenance. Reference to an instrumentation list which itemizes the instrument sensing elements, type, range, set point (whether indicating, control or alarm, and readout location) should be included in the appendix.

3.7 System Interfaces

This subtopic identifies and describes the system interfaces with other systems. These interfaces impose functional and physical requirements on each of these associated systems, and identification in the SDD facilitates control of these system interfaces. This section should also indicate how the system design satisfies the system interfaces that impose the subject system. Detailed lists, in tabular form, may be included in the appendix.

4.0 OPERATION

This major topic includes subtopics that provide outlines for a[illegible]stems operating procedures. These subtopics should provide sufficient det[illegible] con-firm that the design provides for the required modes of system operation and al'so should be a sufficient basis for preparation of detailed operating procedures.

There should be a direct relationship between the individual operating procedures outlined in the SDD and corresponding, detailed operating procedures.

Each operating procedure outlined in the SDD should be sufficiently detailed to clearly identify the individual flow paths used, the instruments used to control these operations, the proper sequence of steps to accomplish the operations, and the detail of training required for personnel working with the system. The operating stations where the procedures are performed should be identified.

The operating procedure outline should be written in an itemized step-by-step format. Reference should be made to the system schematic diagram (component name and number) and to tabular summaries and graphs of operating conditions, as may be required.

System operating modes do not necessarily correspond to plant operating modes. Some systems will normally be operating during normal project operations while others (i.e., safety systems) may not. Some systems will have more than one operating mode to support both normal and off-normal plant operating conditions. Other systems are designed to operate primarily during plant emergencies, but may also support normal and off-normal project operations.

4.1 Startup

This subtopic outlines the operations necessary to bring a system from startup to normal operating conditions. Depending upon the particular system, several procedures may be necessary to satisfy the startup operation.

4.2 Normal Operation

This subtopic outlines the procedures associated with operation and design maneuvering conditions. Operating condition envelopes showing allowable operating ranges and appropriate limitations should be included.

4.3 Infrequent Operations

This subtopic covers those operations which are used infrequently or under unique conditions. Off-normal operations can be classified under this topic. Off-normal operations are operating procedures under which the project is not performing its primary mission. It may be in a state of transition, such as proceeding through a startup.

4.4 Shutdown

This subtopic outlines the procedures for system shutdown. Emergency operations (failure) occur when the project has lost one or more of the elements essential to maintaining normal control of the plant (such as loss of electrical input power) or a failure within the project has allowed a parameter vital to plant safety to exceed acceptable bounds.

5.0 SYSTEM LIMITATIONS, SET POINTS, AND PRECAUTIONS

This section of the SDD should provide a consolidated list of system limitations, set points, and precautions that will provide a better understanding of system operation and response to off-normal or emergency conditions, and maintenance which are described in later sections of the SDD. Under operating limits, the SDD should include, in summary form, the high and low limits for all controlled

variables. Appropriate limits, such as for relief valves and pressure switches, should be identified. The set points or nominal settings for automatic and manual controls for all anticipated operating modes should be provided.

This section should provide precautions to be observed by Operations and Maintenance personnel.

Design precautions, such as interlocks and alarms, should also be included. The system status checks needed for changing set points should be defined. Where appropriate, detailed tabular lists may be included in an appendix of the SDD and referenced in this section.

6.0 OFF-NORMAL EVENTS AND RECOVERY

This topic identifies off-normal events and those procedures necessary for recovery. An outline should be provided explaining the design features which provide protection and mitigate the effects of off-normal events and the actions that should be taken to confirm that the system and equipment are in a safe condition.

6.1 Off-Normal and Emergency Events

An off-normal event is defined as an abnormal system or plant condition which could affect the safety of site or off-site personnel; integrity or proper functional operation of the system or plant. In this subsection, the off-normal and emergency events which can be experienced by the systems should be identified. Examples of such events are:

- Loss of underground ventilation
- Waste cask leakage/breakage causing radiation alarm
- Loss of electrical power
- System or component malfunction
- Accidental shutdown of the system

6.2 Recovery Procedure

This subsection outlines the recovery procedures performed by plant operating personnel to restore the system or plant to a condition which prevents any off-site radiation release and ensures safety of personnel. The specific instrument indications, alarms, or both, which signal the abnormal event should be stated, and the applicable recovery procedure should be outlined. Any follow-up and diagnostic action necessary to identify and confirm the cause of the event and the required corrective action, should also be specified.

7.0 MAINTENANCE

This major topic defines the maintenance philosophy; outlines the procedures for corrective maintenance, the level of training for maintenance personnel, preventive maintenance, and in-service inspection and surveillance; and identifies interfacing systems needed to support maintenance operations. This section provides the basis for preparation of detailed maintenance procedures.

7.1 Maintenance Approach

This subsection defines the specific design approach that will be followed for system maintenance, such as adjust or repair in place, replace unit with a spare

unit, perform routine maintenance activities with system shut down and de-energized.

7.2 Corrective Maintenance

This subsection outlines the procedures for placing the system in a condition suitable for corrective maintenance or replacement of the individual system components. It also identifies those special tools and equipment needed to permit performance of the maintenance operation and to maintain system cleanliness and other specified conditions on the system and plant during the maintenance period. It references, but does not repeat, those system operating procedures in Section 4 of the SDD which are used to obtain the required system conditions (such as underground booster fans shutdown). The design requirements that are imposed on interfacing systems to enhance maintenance capability should be defined.

Individual corrective maintenance procedures should be outlined for each component of the system. This may be provided in tabular form. Reference should be made to the component operation and maintenance manual for those detailed steps and procedures dealing with maintenance within that component, such that there is no duplication of coverage.

7.3 Preventive Maintenance

An outline of preventive maintenance procedures for the system and each component in the system should be included. However, reference should be made to the appropriate component operation and maintenance manual for those detailed steps involving work within that component, such that there is no duplication of coverage. Periodic calibrations, tests, and checks that should be performed, as well as the frequency of performance, should be identified.

7.4 In-Service Inspection

The conditions for performing inspection of the system during operation or shutdown should be defined. The system design features to accomplish the required inspections should be identified; including specific equipment and access needed for the inspections.

7.5 Surveillance

The necessary instrumentation for surveillance of the system and its components during the lifetime of the project should be identified.

IV. REFERENCES

WP 09-006, Engineering Document Distribution
WP 09-007, Engineering and Design Document Preparation and Change Control
WP 09-022, Design Classification
WP 09-024, Configuration Control Board
WP 09-9, Configuration Management Plan
WP 15-030, Records Management
WP 15-103, Document Control

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V. ADDENDUM

WIPP Preparation Guide for Plant and System Design Description Documents

WP 09-10, Rev. 0

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List of Attachments

Title

REFERENCES

WP 09-006, Engineering Document Distribution
WP 09-007, Engineering Design Document Preparation and Change Control
WP 09-9, Configuration Management Plan

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DEFINITIONS

Configuration Control Board (CCB) - The group of persons designated to make decisions regarding the allocation of resources at WIPP for modifications including the evaluation of design changes for technical merit.

Cognizant Engineer (CE) - The WIPP engineer assigned responsibility for design, configuration control, engineering documentation; modification of equipment, systems, facilities or components, as well as for establishing requirements, evaluating the adequacy of protective and corrective maintenance, and spare parts level so that defined objectives of performance, safety, reliability, cost and schedule are satisfied. Cognizant engineers are normally assigned to WIDs Engineering department.

Cognizant Manager (CM) - The WID manager assigned the responsibility for a defined task or system.

Engineering Change Order (ECO), WP Form 1200 - The engineering document used to define and control the initiation of the new engineering design documents and to define and control changes to approved engineering design documents.

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Engineering Change Proposal (ECP) - A proposed change which affects currently approved engineering documents or WIPP facilities or equipment. Engineering documents include drawings, specifications, System Design Descriptions, etc. A proposed change which may not affect Engineering documents, but which affects other Technical Baseline Documents such as the Final Safety Analysis Report (FSAR), shall also result in an ECP.

ECP Class - A category assigned to a change which reflects the ECP approval requirements.

Impact Level - The uniform classification applied to design (technical) documents and modifications commensurate with the complexity, consequences of failure, and cost of the facility and equipment involved. Impact levels are used to determine the approval requirements for the initial release or revision of design documents. Impact levels are defined in WP 09-007.

System Design Description (SDD) - The technical baseline document which defines the design, functional, operating, and performance requirements and characteristics for a WIPP system. WP 09-10 provides the format, content, and level of detail required for SDDs.

Preliminary Review Process for SDDs

1. The CE completes the rough draft and submits it to CC&D.
2. CC&D documents the draft submittal, reviews for adherence to WP 09-10 format, and negotiates need for figures with the CE.
3. CC&D submits the draft to word processing and in parallel begins the development of figures per Attachments 2 and 3.
4. Word processing returns the draft to CC&D.
5. CC&D documents the draft return, includes completed illustrations processed per Attachments 2 and 3, and submits package to CE.
6. The CE reviews the draft and initials WP Form 2085, Illustration Process Sheet (Attachment 3).
7. The CE determines package complete, go to step 8.
8. The CE approves the illustrations with initial and returns approved draft to CC&D.
9. CC&D makes copies for review, and attaches WP Form 2083, Review Form (Attachment 1).
10. CC&D distributes draft SDDs for internal review per the CEs requirements.
11. Reviews are completed per WP Form 2083 and returned to CC&D.
12. CC&D submits review sheets to the CE and the CE resolves comments.
13. The CE submits the resolved draft, plus review forms to the CM for review.
14. The CM resolves any concerns with the CE.
15. The CM signs approval on WP Form 2083 and returns the draft to CC&D.
16. CC&D submits the resolved preliminary draft to word processing and, in parallel, incorporates any changes to illustrations, if needed.
17. Word processing completes final preliminary draft and returns to CC&D.
18. C&D reviews for accurate text changes, and inserts revised illustrations.
19. CC&D submits the final draft, and signed review sheets to the CE for final approval and signature, WP Form 2083.
20. CE submits final draft and review sheets to CM for final approval and signature, WP Form 2083.
21. The CE shall return the approved review forms to CC&D.
22. CC&D shall retain the forms for final disposition after the SDD is released.

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23. CE shall initiate an ECP per WP 09-024 to the Configuration Control Board.

24. CE shall initiate an ECO per WP 09-007, Section 5.4.

25. After the CE obtains all approvals and reviews, the CE and CM sign WP Form 2035 (Attachment 4).

    NOTE: The CE and CM signature is verification that all changes have been incorporated in accordance with the approved ECO. WP Form 2035 is final approval for release of the initial SDD, revised SDD or a revised section of the SDD. WP Form 2035 becomes the cover sheet for the SDD.

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SYSTEM DESIGN DESCRIPTION
DOCUMENT REVIEW FORM

DOCUMENT NUMBER: _____ Page_____ of ____
(Include Revision Number)

Title: _____ Date Review Submitted: _____

_____ Review Due Date: _____

Original Author: _____ Return to: _____

Cog. Engineer: _____ ECO No: _____

Distribution: Name	Dept.	Name	Dept.

Page/ Step	Reviewer's Comments	Cognizant/Author's Resolutions

GO TO CONTINUATION PAGE, IF MORE SPACE IS REQUIRED

Sign Below If: (1) Document is approved as written, with no comments or (2) When all comments have been resolved

Reviewer's Signature _____ Date _____

Cognizant Engineer's Signature _____ Date _____

Department Manager's Signature _____ Date _____

Author's Signature _____ Date _____

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SYSTEM DESIGN DESCRIPTION DOCUMENT REVIEW FORM

(Continued)

Page _____ of _____

DOCUMENT (Number and Title) _____

_____

ECO No: _____

Page/ Step	Reviewer's Comments	Cognizant/Author's Resolutions

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SDD ILLUSTRATION LOG

ILLUSTRATION NO.	TITLE	COG. ENG.	REQUESTOR		DATE
SD_____001				ECP NO.	
				ECO NO.	
				ECP NO.	
				ECO NO.	
				ECP NO.	
				ECO NO.	
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				ECP NO.	
				ECO NO.	

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ATTACHMENT 2
ADDENDUM, Rev. 0
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SDD ILLUSTRATION NO. CONFIGURATION INSTRUCTIONS

SDD drawing numbers are assigned as a unique number suffixed with "SD", (System Design) and a two digit system designator. (WP Form 2084, Attachment 2)

(a) Applicable only to SDDs, the numbering system shall be as follows:

	System Design	System Designator	(Sequential) Drawing No.	Page Sequence Designator	Revision No.
Ex.:	SD	VU	001		.0

SDVU001.0

(b) If a drawing requires 2 or more pages, the drawing shall be numbered as follows:

	System Design	System Designator	(Sequential) Drawing No.	Page Sequence Designator	Revision No.
Ex.: (1st Page)	SD	VU	001	−1	.0

SDVU001−1.0

	System Design	System Designator	(Sequential) Drawing No.	Page Sequence Designator	Revision No.
Ex.: (2nd Page)	SD	VU	001	−2	.0

SDVU001−2.0

(c) Under normal circumstances, a SDD drawing shall be revised when the whole document requires revision.

(d) Circumstances dictating a drawing change before a scheduled complete SDD revision shall require an ECO (Level II) and shall be numbered as follows

	System Design	System Designator	(Sequential) Drawing No	Page Sequence Designator	Revision No.
Ex.: (1st Page)	SD	VU	001	−1	1

SDVU001−1.1

SDD ILLUSTRATION PROCESS SHEET

SECTION _____ Page _____ of _____

A

REQUESTED BY (1) _____ PHONE EXT. (2) _____ DEPT. (3) _____

ILLUSTRATION DESCRIPTION (4) _____

SDD NUMBER (5) _____ PAGE SIZE (6) _____

DATE OF ORIGINAL REQUEST (8) _____ (7) PRIORITY? 1 2 3

REVIEW DATE NEEDED (9) _____ FINAL DRAFT DATE NEEDED (10) _____

B

SDD RETRIEVAL NUMBER (11) _____

ECO NUMBER (12) _____ ECP NUMBER (13) _____

C

CAD ILLUSTRATION:

LIMITS (14) _____ PLOT SCALE (15) _____

BASE DRAWING (NO.) (16) _____ BASE DRAWING (SCALE) (17) _____ (Scale will be in ratio to limits)

INCLUDES LAYERS: (18) _____

LIST ADDITIONAL LAYERS AND/OR REVISIONS IN NUMERICAL SEQUENCE INITIAL BELOW (SECTION D)

D

INITIAL	CAD REV.	RETRIEVAL NO. SEQUENCE	LAYER NAME		INITIAL	CAD REV.	RETRIEVAL NO. SEQUENCE	LAYER NAME
(19)	(20)	(21)	(22)					

E

REVIEW REQUIREMENTS:

1ST REVIEW (23) _____ 2ND REVIEW _____ 3RD REVIEW _____

(24) _____ _____

FINAL: AUTHOR'S SIGNATURE DATE

1ST REVIEW (25) _____ 2ND REVIEW _____ 3RD REVIEW _____

(26) _____ _____

FINAL: COGNIZANT ENGINEER'S SIGNATURE DATE

1ST REVIEW (27) _____ 2ND REVIEW _____ 3RD REVIEW _____

(28) _____ _____

FINAL: COGNIZANT MANAGER'S SIGNATURE DATE

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WP Form 2085: 3/15/01
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SDD ILLUSTRATION PROCESS SHEET INSTRUCTIONS

* Self explanatory symbol

Section A

1. Name of Author/Cognizant Engineer
2. *
3. *
4. Enter title and figure number if known; if not, give brief description of illustration. Enter engineering drawings number/revision if used for supporting technical information.
5. Enter SDD number.
6. 8 1/2" x 11" or 11" x 17".
7. Priority determined by CC&D manager: Priority 1, 2, or 3.
8. *
9. Information from Author/Cognizant Engineer
10. Information from Author/Cognizant Engineer

Section B

11. Enter retrieval number per Attachment 2, WP Form 2084 of this procedure.
12. Enter ECO number effecting this illustration only.
13. Enter ECP number approved for this revision only.

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Section C

14. Drawing limits reflect the outside limits of the subject matter.
15. Scale of actual plot is entered here. Consideration of a plot being plotted at a maximum of 11" x 17" shall always be considered and preferred.
16. Base number (first seven digits of the retrieval number) is entered here.
17. Scale will be in relation to the limits of the drawing.
    Example: A flow diagram with limits of 8 1/2" x 11", would have a 1"=1" scale.
    A sit plan with limits of 2000 ft. x 3000 ft. would have a 1"-1' scale.
18. List all layers involved with preparing the illustration.

Section D

19. If revising an existing illustration, initial here.
20. Revision number.
21. Sequence of revision. (See Attachment 2, page 2 of 2)
22. Name of layer(s) included in revision.

Section E

23. Author initials and dates for first review cycle, etc.
24. Signature and date of Author when illustration is approved.
25. Cognizant Engineer initials and dates for first review cycle, etc.
26. Signature and date of Cognizant Engineer when illustration is approved.
27. Cognizant Manager initials and dates for first review cycle, etc.
28. Signature and date of Cognizant Manager when illustration is approved.

SDD ____
Revision Number _____
Revision date _____

U.S. DEPARTMENT OF ENERGY

WASTE ISOLATION PILOT PLANT

RADIATION MONITORING (XXXX)

SYSTEM DESIGN DESCRIPTION (SDD)

4/2/91

Prepared by
Westinghouse Electric Corporation
Waste Isolation Division
Carlsbad, New Mexico

For

U.S. Department of Energy

Cognizant Engineer_____/_____
Signature Date

Cognizant Engineer_____/_____
Signature Date

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