

Attachment 1 - Change Notice

Page 1

Section 1 - DOCUMENT INFORMATION

Document Number WP 09-CN3023	Rev. No. 0	Document Title Design Classification Determination	Change No. 3
---------------------------------	---------------	---	-----------------

Reason for Change
Clarification of Design Class IIIA items.
Minor editorials.

Step/Section	Change	Step/Section	Change
Section 1.0, 1 st paragraph	Reword introduction to read: "Design classification is established for Waste Isolation Pilot Plant (WIPP) Structures, Systems, and Components (SSCs) ..."	Section 2.2 (continued)	Correct title to read: "WP 09-CN3024, Configuration Management Board/Engineering Change Proposal
Section 1.0, 2 nd paragraph	Reword the last sentence to read: "Additionally, the WIPP Safety Analysis Report (SAR) ..." <i>(was FSAR) 09/22/98</i>	Sections 3.1.1 and 3.1.1A	Delete the "F" in "FSAR"
Section 2.2	Deleted acronyms: "GPDD" and "SDDs" and add an "s" after Description	Section 3.1.6	Delete "Engineering Change Proposal"
		Note after 3.1.6	Add an "s" to SSC

Location Change Placed Document Service to place	Major/Minor Determination <input type="checkbox"/> Major Change <input checked="" type="checkbox"/> Minor Change	Validation Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
---	---	---

USQ Screening Performed By <i>Jinda Santos 9/14/98</i>	RCRA Permit Screening Performed By <i>Jinda Santos 9/14/98</i>
<input checked="" type="checkbox"/> The proposed change does not result in a change in the process or activities as described in the SAR	<input type="checkbox"/> Screening not required
<input type="checkbox"/> USQ Safety Evaluation Attached	<input checked="" type="checkbox"/> Permit Screening Attached

Section 2 - REVIEWED BY

ORGANIZATION	PRINTED NAME	SIGNATURE	DATE
Engineering	Sherry E. Fabian	<i>Sherry Fabian</i>	9/15/98
Validator	<i>N/A</i>		
Document Services	<i>A Fernandez</i>	<i>A Fernandez</i>	09/22/98

Section 3 - AUTHORIZED BY

ORGANIZATION	PRINTED NAME	SIGNATURE	DATE
Engineering	<i>D A Harris</i>	<i>D A Harris</i>	9/15/98

Obsolete

Step/Section	Change	Step/Section	Change
Attachment 2	Correct title to read: "WIPP Structures, Systems, and Components ..."		
Design Class IIIA, 4 th Bullet	Reword to state: "If there is a credible probability that failure of the component could result in the release of radioactive contamination."		
Design Class IIIA, 6 th Bullet	Reword to state: "If there is a credible probability that failure of the item could result in a hazard to the health and safety of the operating personnel."		

NON-OSR

IMPACT LEVEL

	1	2	3	4
A				
B				
C				
D				
E				
F				
G				
H			X	
I				
J				

Management Control Procedure

WP 09-CN3023

Revision 0

Design Classification Determination

EFFECTIVE DATE: 3/17/95

Engineering

Anthony P. Fernandez
WRITER

A. Strait Signature on file 3/13/95
COGNIZANT INDIVIDUAL (PRINTED NAME) (SIGNATURE) DATE

Jeff J. Cotton Signature on file 3/9/95
DRC CHAIRPERSON (PRINTED NAME) (SIGNATURE) DATE

C. E. Conway Signature on file 3/13/95
DEPARTMENT MANAGER (PRINTED NAME) (SIGNATURE) DATE

REVIEW ORGANIZATIONS

Engineering	Quality Assurance	Nuclear Safety
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

TABLE OF CONTENTS

1.0 INTRODUCTION 3

2.0 REFERENCES 3

3.0 PERFORMANCE 3

Attachment 1 - Logic for Design Classification Designation 5

Attachment 2 - Basis Design and Quality Assurance Requirements for Classified Items 8

1.0 INTRODUCTION

Design classification is established for Waste Isolation Pilot Plant (WIPP) Structures, Systems and Components (SSCs) to ensure that each will perform its function(s) with the appropriate degree of reliability when (1) subjected to the adverse conditions expected during design basis accidents; or (2) subjected to severe natural phenomena to prevent, control, or diminish radiological consequences.

The General Plant Design Description (GPDD) and each System Design Description (SDD) specify the design class for major WIPP SSCs. Additionally, the WIPP Safety Analysis Report (SAR) specifies design class for WIPP SSCs.

This procedure applies to new design work; modifications to permanent WIPP SSCs where classification was not previously identified; or where reevaluation may be required due to a change in SSC function, use, or its effect on safety. This procedure describes the logic utilized to determine the design classification.

2.0 REFERENCES

2.1 Baseline Documents

ASME NQA-1, Quality Assurance Program Requirements for Nuclear Facilities

2.2 Referenced Documents

General Plant Design Description

System Design Descriptions

WP 09-CN3024, Configuration Management Board/Engineering Change Proposal

3.0 PERFORMANCE

3.1 Cognizant Engineer (CE), perform the following:

3.1.1 Evaluate new designs or proposed SSC modifications against GPDD, the SDDs, and the SAR to determine the design class.

[A] IF a new design or proposed modification is NOT already encompassed by GPDD, the SDDs, or the SAR,
THEN evaluate the design or proposed change by completing Attachment 1.

NOTE Attachment 2 contains general information on design classification.

Reference may also be made to the GPDD and applicable SDD(s).

3.1.2 WHEN a single item performs two or more functions that could be assigned to more than one design classification, THEN classify that item into the more stringent design class.

3.1.3 IF SSC failure prevents an SSC of a higher design classification from accomplishing its required function, THEN perform one of the following options:

- Change the design to preclude consequential failure of the more stringently classified items
- Reclassify the less stringently classified item to correspond to that of the more stringently classified item
- Provide an interface barrier to protect the more stringently classified item.

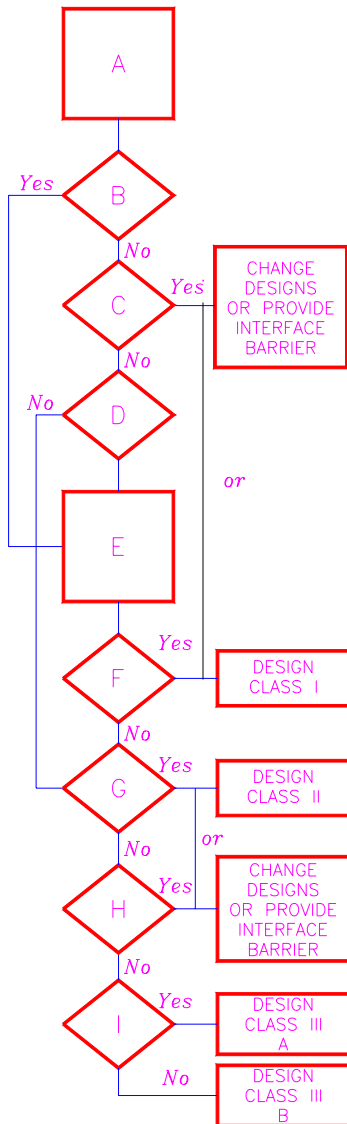
3.1.4 Submit the completed Attachment 1, to the Cognizant Manager (CM) for review and concurrence.

Attachment 1 - Logic for Design Classification Designation

**LOGIC FOR DESIGN CLASSIFICATION DESIGNATION
FOR: (EQUIPMENT NUMBER(S) AND/OR SYSTEM DESCRIPTION)**

DATE: _____ COMPLETED BY: _____

(PRINT)



A. Select a system, structure or component for classification. (Start with a mitigating item.)

B. Is the system, structure, or component required to mitigate the consequences of an accident?

C. Would the system, structure, or component failure result in loss of safety functions of a Design Class I component?

D. Does the system, structure, or component provide any function related to nuclear materials?

E. Select a conservative accident scenario and perform safety analysis.

F. Doe the cumulative radiological consequences following the accident exceed 25 Rem whole body or 75 Rem organ dose commitment to an individual at the Zone 1 boundary?

G. Does the structure, system, operation, or component conform to the Class II Criteria as defined in Attachment 2?

H. Would the structure, system, operation, or component failure result in loss of the required function of a Class II component?

I. Are special design requirements necessary to ensure that failure of the system, structure, or component will NOT result in a significant shutdown of the facility or inhibit accessibility or maintainability of required equipment or have special significance to health and safety of operations personnel?

NOTE: If additional space is required for comments on logic procedure steps, continue on separate sheet. Identify equipment/system and logic on each page as applicable.

B. _____ YES _____ NO
Describe requirement

C. _____ YES _____ NO
Failure mode and affected class I component

D. _____ YES _____ NO
Describe function

E. _____ YES _____ NO
Attach safety analysis

F. _____ YES _____ NO
Calculated dose rates:

(Attach calculations to this form)
G. _____ YES _____ NO
Criteria

H. _____ YES _____ NO
Failure mode and affected class II component

I. _____ YES _____ NO
Requirements

Attachment 1 - Logic for Design Classification Designation (Continued)

**LOGIC FOR DESIGN CLASSIFICATION DESIGNATION
FOR: (EQUIPMENT NUMBER(S) AND/OR SYSTEM DESCRIPTION)**

Assigned Design Class I, II, IIIA or IIIB (based on the above logic) Submitted by: _____ Signature

Cognizant Engineering Manager: _____ Signature Date

COMMENTS: _____

Attachment 2 - Basis Design and Quality Assurance Requirements for Classified Items

BASIS DESIGN AND QUALITY ASSURANCE REQUIREMENTS FOR CLASSIFIED ITEMS																				
TYPICAL EQUIPMENT	STRUCTURE/SUPPORTS			LIQUID AND PROCESS AIR HANDLING PROCESSING AND STORAGE EQUIPMENT							AIR HDLG DUCTING & FANS	HVAC FILTERS	MECHANICAL HANDLING EQUIPMENT			INSTRUMENTATION AND ELECTRICAL			QUALITY ASSURANCE PROGRAM	
	DBE DST AIC-318 AISC	UBC USC ANSI A58.1	SITE SPEC REQUIREMENTS	ASME VIII NFPA (5)	ANSI B31.1 NFPA (5)	UPC	API-S10 NFPA (5)	API-650 OR API-620	HEAT EXCHGRS	ALL OTHER EQUIP	ARI SMACNA AMCA	ASHRAE 52.68	MIL-F-51068C ANSI N 509 ANSI N 510	CMAA	CMAA AISC AWS	MFR'S STD	IEEE-NE	ANSI STDS OR NAT'L ELECTRIC CODE	ISA/MFR'S STD	ANSI/ASME NQA-1 & SUPPLEMENTS
DESIGN CLASS I	X		(1)	X (6)	X		X	X	X		X (3)	X (3), (4)	X (3)	X	X		X	X		X
DESIGN CLASS II	(1), (2)	X	(1)	X	X		X	X	X		X (3)	X (3)	X (3)	X	X			X	X	X
DESIGN CLASS IIIA	(1)	X	(1)	(1)	X		(1)			X	X (3)	X (3)	X (3)	(1)	(1)	X		X	X	X
DESIGN CLASS IIIB		X	(7)	(1)	(1)	X				X	X	X	X			X		X	X	X

689:3036

x - MINIMUM REQUIREMENTS

NOTES

- (1) REQUIREMENTS TO BE DETERMINED ON CASE BY CASE BASIS
- (2) REQUIRED FOR STRUCTURE AND SUPPORTS NEEDED FOR CONFINEMENT AND CONTROL OF RADIOACTIVITY
- (3) EXCEPT STRUCTURES AND SUPPORTS THAT ARE DESIGNED TO WITHSTAND DBE/OST WHEN SPECIFIED IN COLUMN 1 OF THIS TABLE
- (4) UNDERWRITER'S LABORATORY (UL) CLASS I LISTED
- (5) FOR FIRE PROTECTION SYSTEMS
- (6) ASME III FOR OTHER CLASS I VESSELS
- (7) DESIGN OF UNDERGROUND STRUCTURES, MINING EQUIPMENT, AND FACILITIES ARE BASICALLY GOVERNED BY MSHA AND THE EXPERIENCE IN LOCAL MINES

Attachment 2 - Basis Design and Quality Assurance Requirements for Classified Items (Continued)

WIPP Structures, Systems, and Components (SSCs) are assigned one of the following Design Classes:

DESIGN CLASS	BASIS FOR CLASSIFICATION
I	If an SSC is essential to prevent, control, or diminish the effects of an accident or severe natural phenomena that could result in a fifty-year dose level beyond the Zone-1 boundary in excess of 25 rem to the whole body or 75 rem to specific organs, it is a Design Class I item.
II	SSCs that are NOT included in Design Class I, shall be Design Class II if they are essential to provide any of the following: <ul style="list-style-type: none"> ● Permanent confinement, monitoring, and control of radioactive materials. ● Permanent shielding ● Monitoring of variables to: <ul style="list-style-type: none"> - Verify that essential operational limits are NOT exceeded. - Indicate the state of bypasses to safety systems that are NOT removed automatically upon operation of the safety system. - Indicate the status of items in Design Class I during all conditions of plant operation. - Verify that off-site radiological dose limits are NOT exceeded following an inadvertent release of radioactive material.
IIIA	SSCs NOT included in either Design Class I or II, but perform a function for which a higher level of quality is needed beyond that resulting from commercial, industrial practice, shall be considered for Design Class IIIA. If any of the following considerations apply, the SSC is determined to be classified Design Class IIIA: <ul style="list-style-type: none"> ● Monitors required to determine on-site radiological dose rates. This includes items that would be used to monitor airborne radioactivity following an inadvertent release of radioactive materials. ● If the failure of the item could result in a major sustained stoppage of operation of waste handling and storage activities. ● If the item is complex or unique in design or fabrication, or if the replacement of a unique subassembly is required to be identical in terms of function, form, and fit. ● <u>If there is a credible probability that failure of the component could result in the release of radioactive contamination.</u> ● If special considerations are required to protect the health and safety of operating personnel beyond the protection provided by recognized codes and standards. ● <u>If there is a credible probability that failure of the item could result in a hazard to the health and safety of the operating personnel.</u>
IIIB	This classification shall include all SSCs NOT covered by the above considerations. For Design Class IIIB SSCs, conventional design, fabrication, and construction practices shall be utilized, performed by commercial-industrial facilities which employ high standards of quality control and adhere to recognized codes and standards.