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ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 628353

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
SNF Storage Subprojects	SNF Storage Subprojects	N/A
5. Proj./Prog./Dept./Div.:	6. Design Authority/Design Agent/Cog. Engr.:	7. Purchase Order No.:
W-442 / SNF / MCO Subproject	L. H. Goldmann	N/A
8. Originator Remarks:		9. Equip./Component No.:
Warehouse Plan for the Multi-Canister Overpacks and Baskets, HNF-SD-SNF-PLN-021		MCO
		10. System/Bldg./Facility: MCO/212H/SNF
		12. Major Assm. Dwg. No.: N/A
11. Receiver Remarks:	11A. Design Baseline Document? ○ Yes ◉ No	13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

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1	HNF-SD-SNF-PLN-021		0	Warehouse Plan for the MCO	Q	2	1	

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D OR N/A (See WHC-CM-3-5, Sec. 12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
2	1	Design Authority L. H. Goldmann	L. H. Goldmon-R3	1/10/00		2	1	M. K. Martin / Design Admin	Margaret K Martin	1-10-00	
		Design Agent									
		Cog. Eng.									
2	1	Cog. Mgr. K. E. Smith	K E Smith	1/11/00							
2	1	QA C. R. Hoover / G. E. Mata	C R Hoover	1/11/00							
		Safety									
		Env.									

18.	19.	20.	21. DOE APPROVAL (if required)
Margaret K Martin	Margaret K Martin	K E Smith	Ctrl No. N/A
M. K. Martin	M. K. Martin	K. E. Smith	○ Approved
Signature of EDT Originator	Authorized Representative for Receiving Organization	Design Authority/ Cognizant Manager	○ Approved w/comments
Date: 1-10-00	Date: 1-10-00	Date: 1/11/00	○ Disapproved w/comments

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	SNF Storage Subprojects	Date 3/14/00
Project Title/Work Order		EDT No. 628353
Warehouse Plan for the Multi-Canister Overpacks and Baskets, HNF-SD-SNF-PLN-021		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
J. G. Caudill	G1-40	x			
D. P. DeVine	L6-58	x			
L. H. Goldmann	L6-58	x			
C. R. Hoover	L6-58	x			
C. B. Loftis	S7-41	x			
B. D. Lorenz	R3-26	x			
M. K. Martin	L6-58	x			
G. E. Mata	L6-58	x			
J. D. Mathews	X3-65	x			
F. W. Moore	H0-34	x			
T. J. Ruane	X3-72	x			
O. M. Serrano	R3-86	x			
K. E. Smith	L6-58	x			
D. R. Lucas	L6-58	x			
SNF Project Files	R3-11	x			
M. D. Dallas	H5-33	x			
W. A. Ferree	S4-55	x			
D. S. Kelly	G3-23	x			
R. G. Slocum	S4-55	x			
R. B. Wilkenson	R3-11	x			
T. L. Collins	X3-85	x			
Central Files	B1-07	x			
DPC	A3-94	x			
DOE Reading Room	H2-53	x			
Hanford Tech Lib	P8-55	x			

S

HNF-SD-SNF-PLN-021
Revision 0

WAREHOUSE PLAN FOR THE MULTI-CANISTER OVERPACKS AND BASKETS

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

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HNF-SD-SNF-PLN-021
Revision 0
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WAREHOUSE PLAN FOR THE MULTI-CANISTER OVERPACKS AND BASKETS

M. K. Martin
Fluor Hanford

Date Published
January 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
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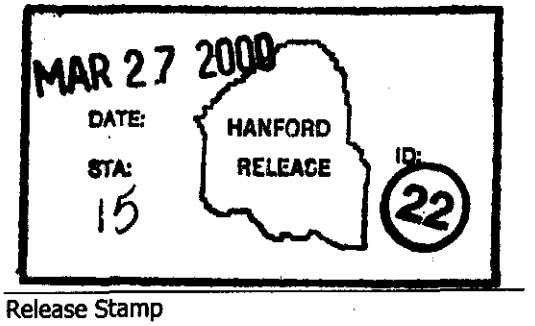

Christine Willingham 3-27-00
Release Approval Date

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Total Pages: 11

WAREHOUSE PLAN

FOR THE

MULTI-CANISTER OVERPACKS AND BASKETS

HNF-SD-SNF-PLN-021

Contract No. KH-8009

January 2000
Revision 0

Prepared By:

Margaret Martin, Design Administration — 1-10-00 Date

Approved By:

Louis Goldmann, Design Authority — 1/10/2000 Date

Clif Hoover, QA Manager, Multi-Canister Overpacks — 1/11/00 Date

George Mata, QA Manager, Multi-Canister Overpacks Baskets — 11 Jan. 00 Date

Kimball Smith, Storage Subprojects Manager — 1/11/2000 Date

Joe Caudill, Manager - Materials Management
Dyncorp Tri-Cities Services, Inc — 3/15/00 Date

WAREHOUSE PLAN

FOR THE

MULTI-CANISTER OVERPACKS AND BASKETS

HNF-SD-SNF-PLN-021

Contract No. KH-8009

Approved By (continued):

William A. Ferree, Senior Director – Logistics
Dyncorp Tri-Cities Services, Inc.
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Richard G. Slocum, Vice President
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David S. Kelly, Site Services
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Date: 3/23/00

Warehouse Plan for the

Multi-Canister Overpacks and Baskets

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Warehouse Plan for the Multi-Canister Overpacks and Baskets

1.0 INTRODUCTION

The Multi-Canister Overpacks (MCO) will contain spent nuclear fuel (SNF) removed from the K East and West Basins. The SNF will be placed in fuel storage baskets that will be stacked inside the MCOs. Approximately 400 MCOs and 2170 baskets will be fabricated for this purpose. These MCOs, loaded with SNF, will be placed in interim storage in the Canister Storage Building (CSB) located in the 200 Area of the Hanford Site.

The MCOs consist of different components/sub-assemblies that will be manufactured by one or more vendors. All components/sub-assemblies will be shipped to the Hanford Site Central Stores Warehouse, 2355 Stevens Drive, Building 1163 in the 1100 Area, for inspection and storage until these components are required at the CSB and K Basins. The MCO fuel storage baskets will be manufactured in the MCO basket fabrication shop located in Building 328 of the Hanford Site 300 Area. The MCO baskets will be inspected at the fabrication shop before shipment to the Central Stores Warehouse for storage.

The MCO components and baskets will be stored as received from the manufacturer with specified protective coatings, wrappings, and packaging intact to maintain mechanical integrity of the components and to prevent corrosion. The components and baskets will be shipped as needed from the warehouse to the CSB and K Basins.

This warehouse plan includes the requirements for receipt of MCO components and baskets from the manufacturers and storage at the Hanford Site Central Stores Warehouse. Transportation of the MCO components and baskets from the warehouse, unwrapping, and assembly of the MCOs are the responsibility of SNF Operations and are not included in this plan.

2.0 WAREHOUSE REQUIREMENTS

The MCO components and baskets will be fabricated, handled, and stored in accordance with the Office of Civilian Radioactive Waste Management (OCRWM) Quality Assurance Requirements (Reference 1). OCRWM requires that handling, storage cleaning, packaging, and preservation of items be conducted in accordance with established work and inspection implementing documents or other specified documents. As described in the fabrication specifications for the MCOs and baskets (References 2 and 3 respectively), the manufacturers will package and ship the MCO components and baskets in accordance with ASME NQA-1 Subpart 2.2 Level C storage requirements (Reference 4) which meets the OCRWM requirements. Per ASME NQA-1, items requiring Level C storage must be stored either indoors or in an environment equivalent to indoors. While control of heat and temperature are not required, the items must be stored in fire-resistant, tear-resistant, weather-tight, and well-ventilated buildings or enclosures. The storage area also must be paved or equal and free from flooding. The Hanford Site Central Stores Warehouse exceeds these requirements. The facility is designated an ASME NQA-1 Level B storage area.

2.1 Space Requirements

Approximately 400 MCOs will be fabricated for stabilization and storage of the SNF located in the K Basins. Each MCO will have either 5 baskets with Mark IV fuel or 6 baskets with Mark 1A fuel. Approximately 2170 baskets will be fabricated. MCO components and baskets should be moved from the warehouse at about the same rate that they are received at the warehouse. However, space in the Central Stores Warehouse is being set aside to store 200 MCOs and 1000 baskets to accommodate differences in fabrication and fuel movement schedules. In addition, the Central Stores Warehouse has enough space available to store all 400 MCOs and 2170 baskets if necessary.

Each MCO component and baskets will be shipped in one of seven crate configurations. Table 1 identifies the size and contents of these crates.

Table 1. Shipping Crates

Crate	Contents	Size (H x W x L)	Items per Crate	Estimated Weight per Crate, lbs.	Total # of Crates to be Stored	Total # of Crates
1	Baskets	36" x 36"x 48" (1)	2	1250	500	1085
2	Shells with Locking and Lifting Rings	36" x 48" x 168" (1)	1	3000	200	400
3	Shield Plug Assemblies	25" x 32" x 32" (3)	1	1657	200	400
4	Process Tubes	12" x 12" x 156" (2)	20	450	10	20
5	Cover Assemblies	24" x 36" x 60" (3)	2	1050	100	200
6	Helicoflex Seals	24" x 30" x 30" (1)	25 (3)	15	8	16
7	Miscellaneous Small Parts	24" x 30" x 30" (1)	10 (3)	310	20	40

(1) Maximum size the fabricator is allowed.
(2) Recommended size for fabricator; however, the fabricator is not constrained by this.
(3) Estimated size; the fabricator is not constrained to a particular size.

3.0 HANDLING AT WAREHOUSE

MCO components and baskets will arrive at the Central Stores Warehouse on open, flatbed trucks. Components and baskets will be in crates and movable to their storage location by forklift. Crates containing the long MCO components (shells and process tubes) will be stored on the floor of the Central Stores Warehouse. These crates will be stacked up to three crates high to minimize storage space requirements. This floor area is rated at 500 lbs. per square foot.

All smaller crates containing MCO components and baskets will be stored on storage racks located in the warehouse. Each rack storage level is designed to support 4000 lbs. per rack section.

3.1 Incoming MCO Components and Baskets

The MCO components' manufacturer ships all incoming components to the Hanford Site Central Stores Warehouse. The baskets are being fabricated at the Hanford site and will be packaged and shipped to the Central Stores Warehouse. Receipt inspection acceptance will be performed and then the components will be placed in the storage location designated for the particular component.

At the Hanford Site Central Stores Warehouse, each crate will be logged into the PassPort computerized tracking system for identification and proper selection of components. Crates will be withdrawn based on component serial numbers, where applicable, or by requested crate as designated by SNF Operations. Materials Management will retain records prepared during the receiving process per governing Hanford site procedures and copies will follow the parts up to usage.

3.2 MCO Components and Baskets – Segregation and Storage

MCO Components and baskets will be separated based on the determined packaging and storage conditions for the given component or basket, or other warehouse constraints. Central Stores Warehouse management will ensure that components and baskets are arranged and tracked so that withdrawal of specified sets of components and baskets for given shipments to SNF Operations can be rapidly performed.

Cleanliness control and storage of all MCO components and baskets will be maintained in accordance with applicable NQA-1 requirements (Reference 4). Storage records are to be maintained and will be held by Materials Management; copies will follow the components and baskets up to usage.

3.3 Outgoing MCO Components and Baskets

On demand from SNF Operations, the warehoused MCO components and baskets will be collected for transport to the CSB and K Basins as required. Transportation from the warehouse, unwrapping, and assembly of the MCOs are the responsibility of SNF Operations.

4.0 QUALITY ASSURANCE REQUIREMENTS

Inspection of MCO components and baskets for compliance with fabrication and packaging requirements will be completed at the fabrication site to verify compliance with applicable fabrication specification requirements. Documentation of QA performed at the manufacturer will accompany each shipment.

4.1 Incoming MCO Components and Baskets Inspection

The MCO components and baskets will be received at the Hanford Site Central Stores Warehouse, at which time a receipt inspection will be performed by QA to verify the number of components, to identify any damage during shipping, and to assure that the document package is included with the shipment as specified by the governing Quality Assurance Inspection Plan. These inspections will be documented. All deficiencies will be noted in a nonconformance report for each shipment.

4.2 Storage Area Oversight

Periodic surveillance of the storage areas for the MCO components and baskets will be performed by responsible SNF Subproject Quality Assurance personnel to assure that storage area requirements are maintained in accordance with the requirements of ASME NQA-1, Subpart 2.2 (Reference 4) and this Plan.

5.0 INVENTORY CONTROL

The PassPort system will be used to track MCO components as they are stored in the Central Stores Warehouse. Each crate containing MCO components and baskets will be assigned a unique catalog identification number that will be logged into the PassPort computerized tracking system for identification and proper selection of components. A material request, which will have the serial numbers of the components listed in the title field, will identify the crates to be pulled from stock. When crates are shipped from the warehouse, pack slips will be generated by the PassPort system. The pack slip will accompany the crates identifying the components or baskets, and their individual component serial numbers (when applicable) for proper MCO assembly by others.

5.1 Tracking of MCO Components and Baskets

For all received and outgoing MCO components and baskets, entries in the Passport database will be made. SNF Operations will indicate the necessary components on outgoing shipments by serial number (when applicable), or by crate type, for issue when needed. Careful referencing of the serial numbers on parts (where applicable) will be recorded on the material requests when the components are prepared for shipment.

5.2 MCO Components and Baskets Supplies

The facilities consuming MCO components and baskets will coordinate with the Central Stores Warehouse to maintain a constant supply of these parts at the staging/assembly areas.

6.0 MCO COMPONENT WAREHOUSE SPACE COST

The Central Stores Warehouse is funded under Site Services. Therefore, there are no direct storage and handling costs for use of the Central Stores Warehouse to receive and store MCO components and baskets. Costs to transport MCO components and baskets from the Central Stores Warehouse to the K Basins or CSB are the responsibility of SNF Operations.

The Central Stores Warehouse services may be required to vacate the 1163 facility during this warehousing plan. Materials Management has been required to develop and submit a vacate plan to include contingencies. The plan identifies three options for relocating current Central Warehouse Operations. If this vacate plan is initiated, a storage facility has been identified at the Energy Northwest site that will provide the storage needed for the MCO components and baskets. Costs to move MCO components and baskets will be included in the overall costs incurred to relocate Central Stores Warehouse Operations.

7.0 REFERENCES

1 DOE/RW-0333P Rev.8, Effective 6/5/98, *Quality Assurance Requirements and Description for the Civilian Radioactive Waste Management Program,* US DOE Office of Civilian Radioactive Waste Management.

2 Smith, K. E., *Multi-Canister Overpack Fabrication Specification*, HNF-S-0453, Rev. 5, Fluor Daniel Hanford, Inc. Richland, Washington.

3 DeVine, D. P., *Specification for Multi-Canister Overpack Basket Fabrication*, HNF-3868, Rev. 1, DE&S Hanford, Inc. Richland Washington.

4 ASME NQA-1, 1994 Edition, Subpart 2.2, Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants.