1/22/02 @ 4:00 PM

From: Robert Shewmaker — NMSS
To: RTA/SFPO SUPPORT GP
Subject: INFORMATION FOR REVIEW & COMMENT

Attached are two documents for the storage cask systems.

The first is the current distribution of dry spent fuel storage casks by type being used based on O'Connor's data of 11/16/01. That listing also shows any defined for the near future that were also shown on his data.

The second is my first cut of cask systems that I believe represent in descending order of priority, the cask systems that should be considered for study from the structural vulnerability standpoint.

Structural personnel should reveiw the four listed for their priority spot and suggest changes, additions, deletions, and reordering. At the same time we will need to fill in the bases for the priority listing.

What needs to be done by others or all is to look at how those cask systems identified should be considered to make some bounding conditions with respect to dose consequences when also considering the initial maximum spent fuel loading that can be in the cask system and the thermal, criticality, shielding and dispersion implications that result.

I plan to have a short meeting tomorrow after lunch to discuss. I will let you know time and place.

A/10

Mail Envelope Properties (3C4DD44A.500 : 6 : 20494)

Subject: INFORMATION FOR REVIEW & COMMENT
Creation Date: 1/22/02 4:06PM
From: Robert Shewmaker

Created By: RES@nrc.gov

Recipients	Action	Date & Time
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owf1_po.OWFN_DO	Delivered	01/22/02 04:06PM
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Files	Size	Date & Time
CaskPop011802.wpd	5158	01/22/02 01:05PM
CaskSysDescrip.wpd	4552	01/22/02 03:37PM
MESSAGE	1901	01/22/02 04:06PM

Options

Auto Delete:	No
Expiration Date:	None
Notify Recipients:	Yes
Priority:	Standard
Reply Requested:	No
Return Notification:	None

SPENT FUEL CASK POPULATION CURRENTLY IN USE

(From S. O'Connor's Licensing Status File, 11/16/01)

IDENTIFICATION	No. LOADED	No. DEFINED FOR LOADING	
BNFL-FS			
W21	0		X
W74	0	Start 3/02	7
	0	Start 3/02	1-GTCC
VSC-24	70		X
CASTOR			
V-21	25		X
X/33	1		X
HOLTEC			
HI-STAR 100 *	7		X
HI-STORM 100	9		55 + PFS
HI-STORM 100S	0	Start 3/04	3
WESTINGHOUSE MC-10	1		X
NAC			
128	2		X
UMS * canister	0		X
MPC * canister	0	Start 3/02	55
	0	Start 3/02	4-GTCC
TN			
-32	26		1
-40	14		X
-68 *	9		X
TN WEST NUHOMS			
-7P	8		X
-12T(-12P mod)	2		X
-24P * canister	101	Start 6/02	8
-32P	0		X
-52B * canister	10		8
TN WEST ADVANCED NUHOMS			
-24P * canister	0		X

* Dual Purpose-Transportation and Storage

FILE:Cask Pop011802

Draft 1/22/02

DESCRIPTION OF CANDIDATE DRY STORAGE SPENT FUEL CASK SYSTEMS BASED ON STRUCTURAL CONSIDERATIONS

1. HOLTEC HI-STORM 100

Vertical cask system w/inner & outer carbon steel shells filled with unreinforced conc. with bolted cask non-confinement closure. Canister insert confinement barrier, multi-purpose canister (MPC), is leak-tight, welded, He pressurized SS vessel containing welded honey-comb cellular SS basket with Boral panels. Canister closure is welded. Canisters of MPC-24, -32 and -68 series exist. System is stored vertically on a reinforced concrete mat and may or may not be anchored.

2. TN WEST NUHOMS - 24P

Vault-type cask system with vault, horizontal storage module (HSM), being a reinforced concrete structure w/internal structural steel canister support system for canister horizontal storage. Vault closure is mechanical (?) but may be welded. Canister insert confinement barrier is leak-tight, welded, He pressurized SS vessel containing guide sleeves or honey-comb cellular SS basket. Canister closure is welded. Soluble boron is used with the -24P basket whereas other Nuhoms canisters as -32P, -52B and -68B use borated plates in the basket structure. HSM is installed as a structure on a reinforced concrete foundation or mat.

3. TN - 32

Vertical carbon steel vessel with bolted flanges on closure lid of confinement barrier with double metallic O-ring seals with volume between seals under He pressure. Body of confinement vessel is welded nickel alloy steel plate for pressure vessels. Outer shield of pressure vessel carbon steel forging for gamma shield. An outer borated polyester layer provides neutron shield. Spent fuel basket is of fusion welded SS cells separated by aluminum and poison plates for thermal and criticality control. Stored vertically on reinforced concrete mat.

4. BNFL-FS VSC-24

Vertical reinforced conc cask with inner carbon steel liner with the closure being a bolted lid. The canister that fits inside is the multi-assembly sealed basket (MSB) that is leak-tight, welded vessel of low-carbon pressure vessel steel, He pressurized that is the confinement barrier containing the spent fuel basket made up of welded square carbon steel tubes to create a honey-comb stucture. Closure of the MSB is welded. System is stored on a reinforced conc mat.

FILE:CaskSysDescrip