

# Misc SNF Issues

# DOE SNF Packaging

NSNFP Strategy Meeting  
Washington, DC

Larry Taylor/Henry Loo  
March 2008



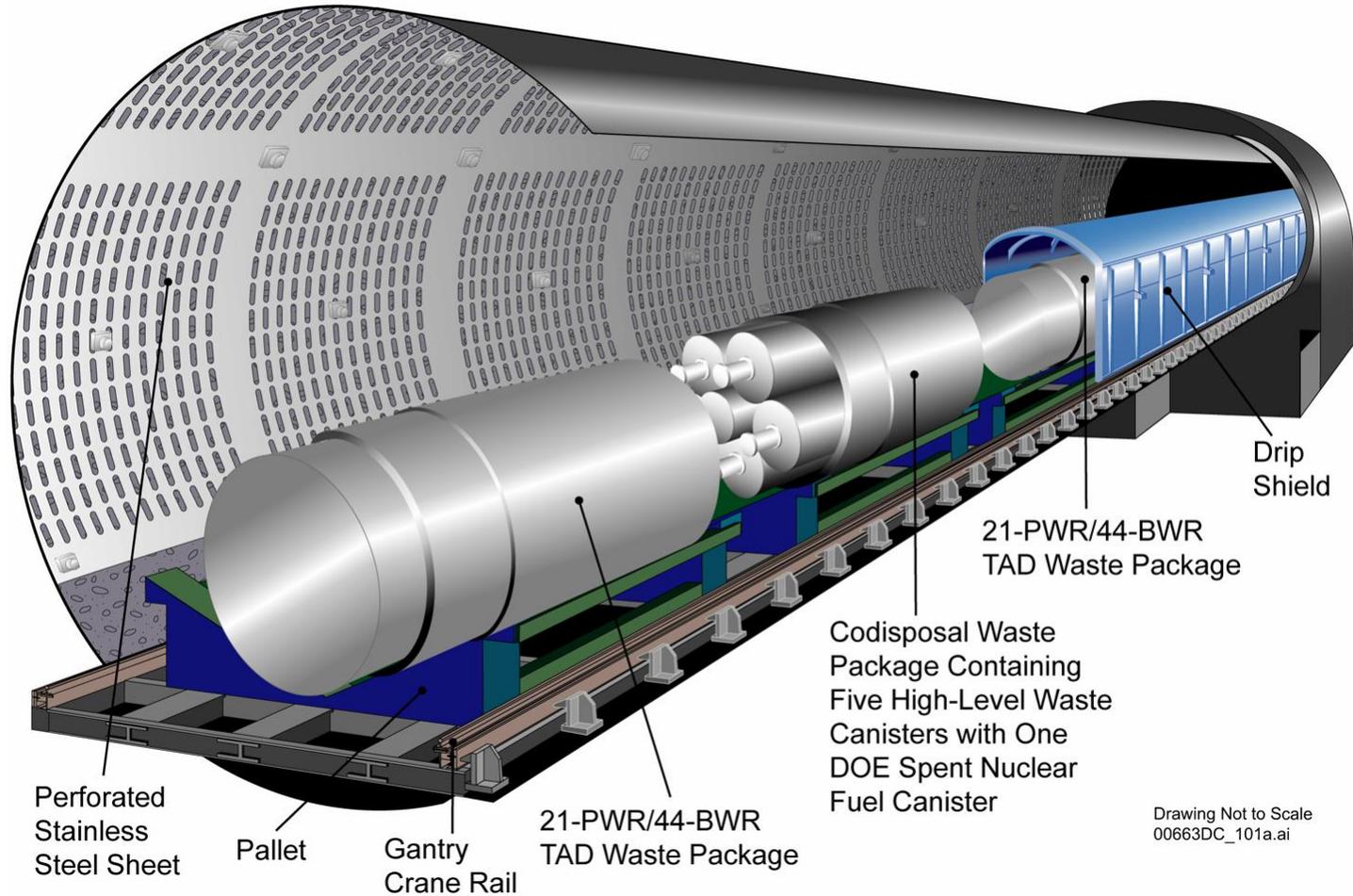
**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

# DOE SNF Packaging

- Repository waste package configurations
- DOE EM HLW canisters
- DOE EM SNF canister/basket configurations
- DOE SNF analyzed/remain
- Next step
- Summary

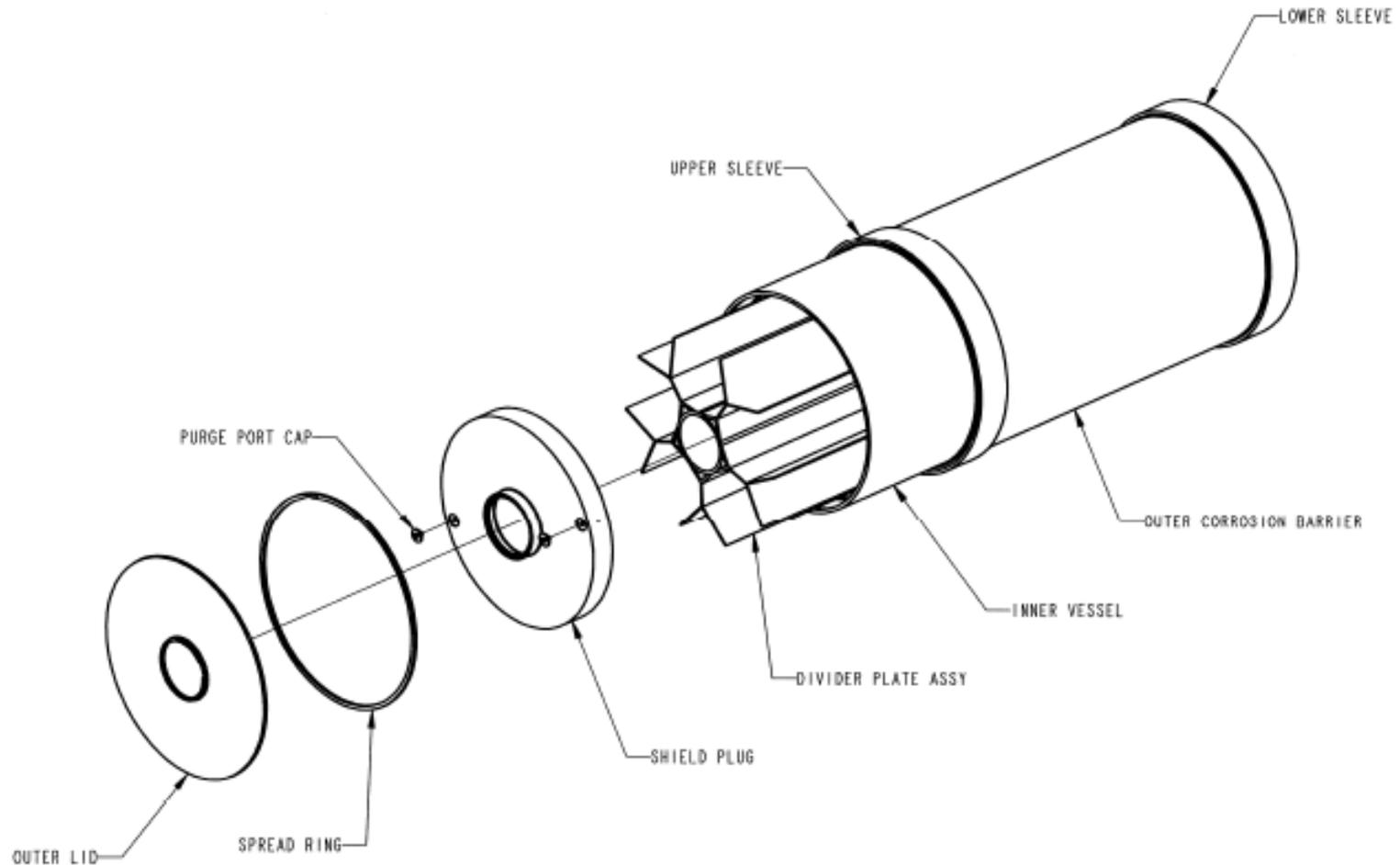
# Repository WP Configurations



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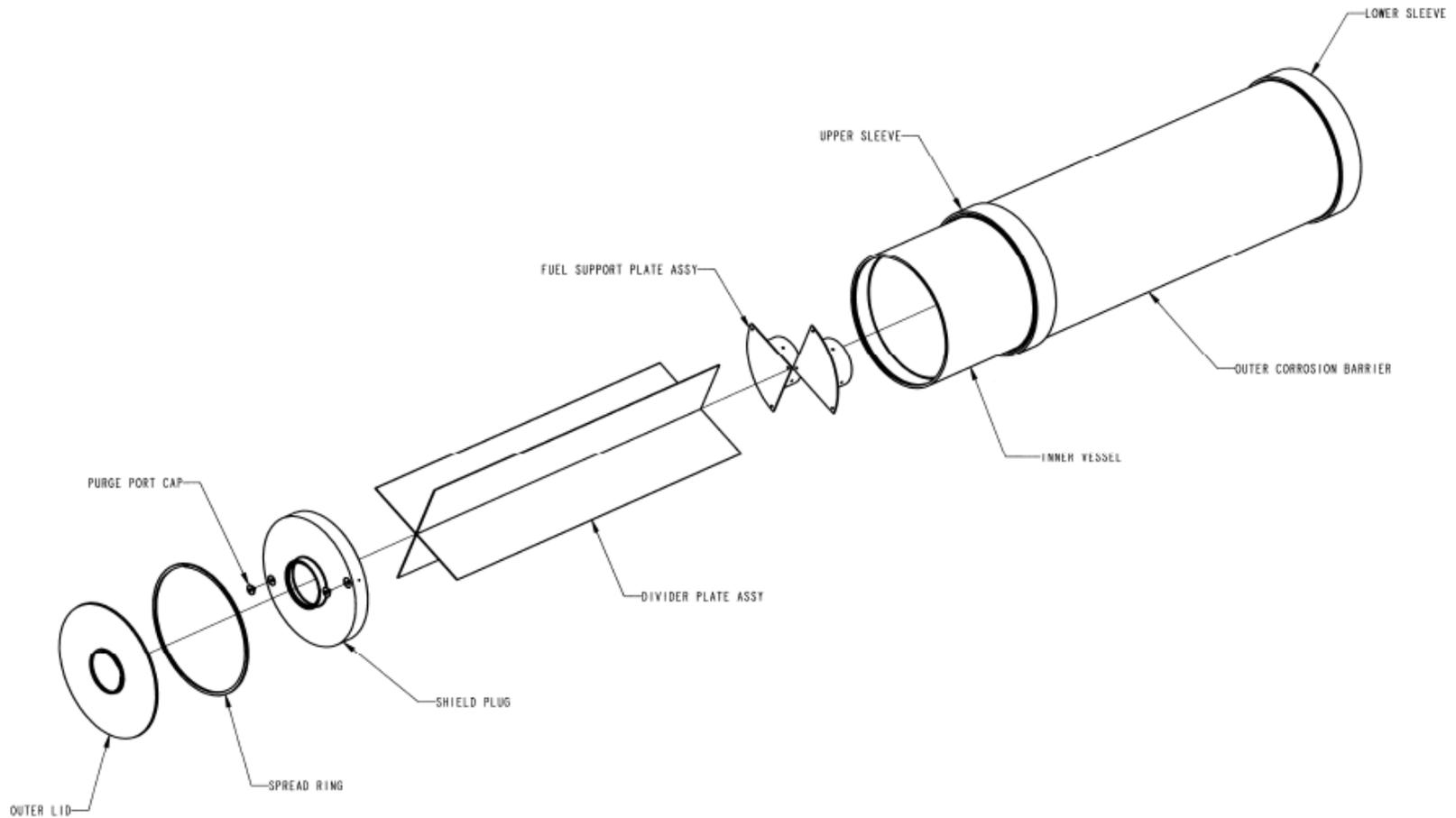
# Codisposal WP 5-DHLW/DOE SNF



**EM Environmental Management**

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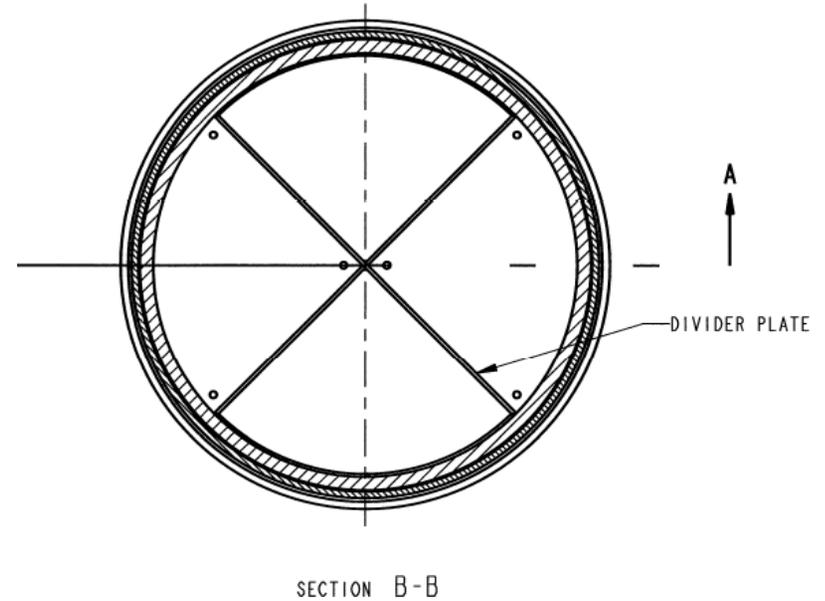
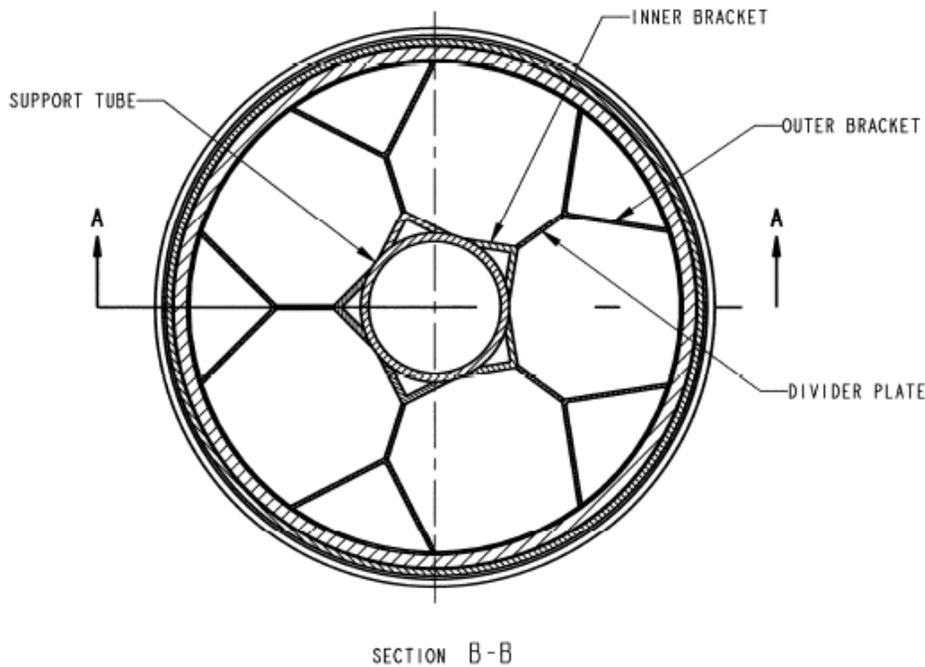
# Codisposal WP 2-MCO/2-DHLW



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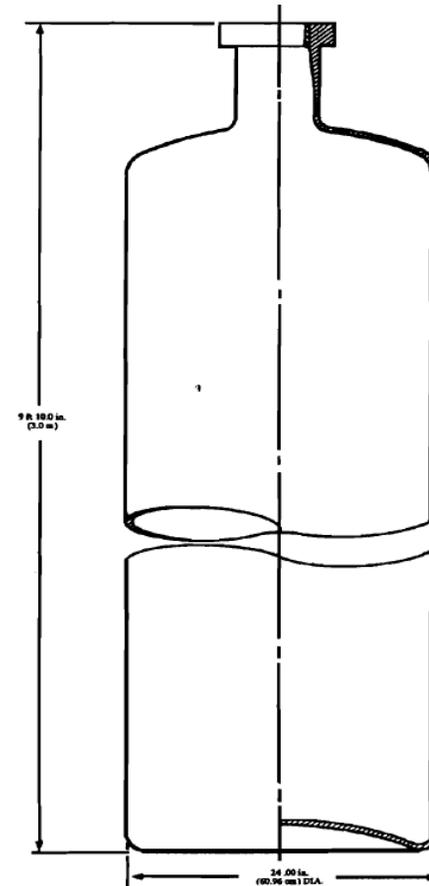
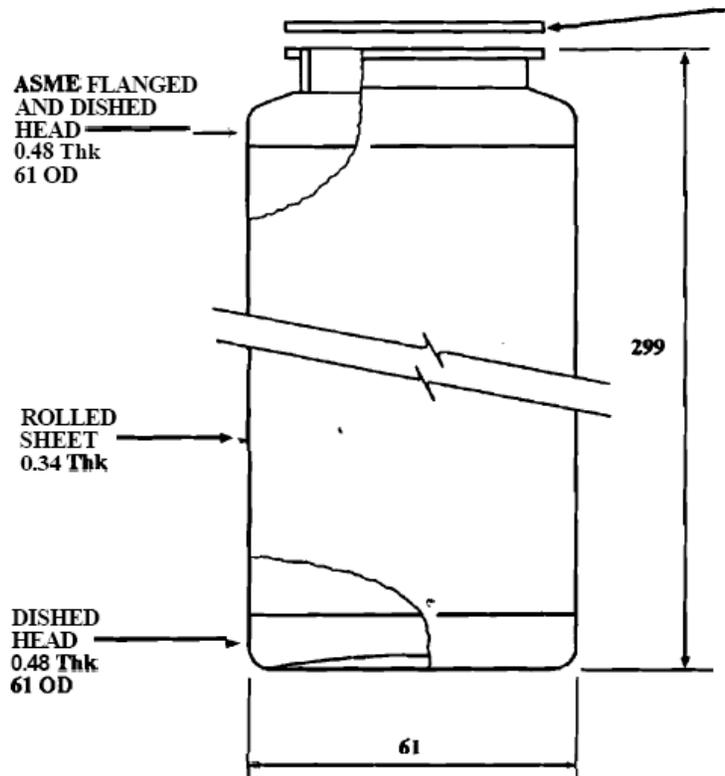
# Codisposal WP Section Views



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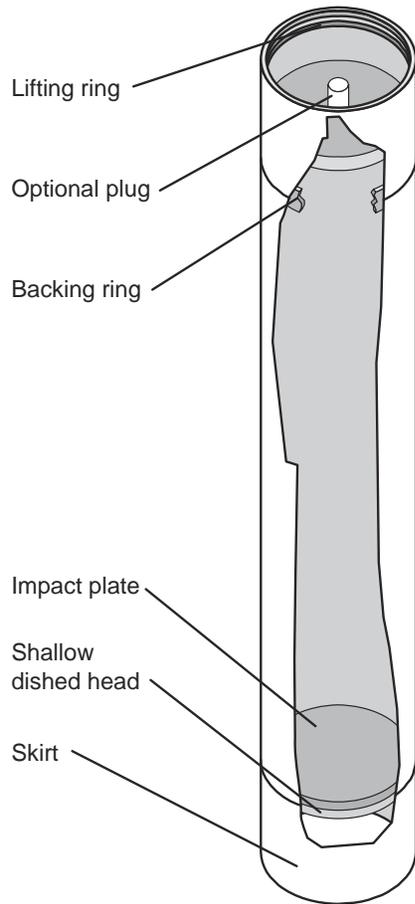
# DOE HLW Canisters



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# DOE SNF Canisters



Nominal Outside Diameters:  
18 in. and 24 in.

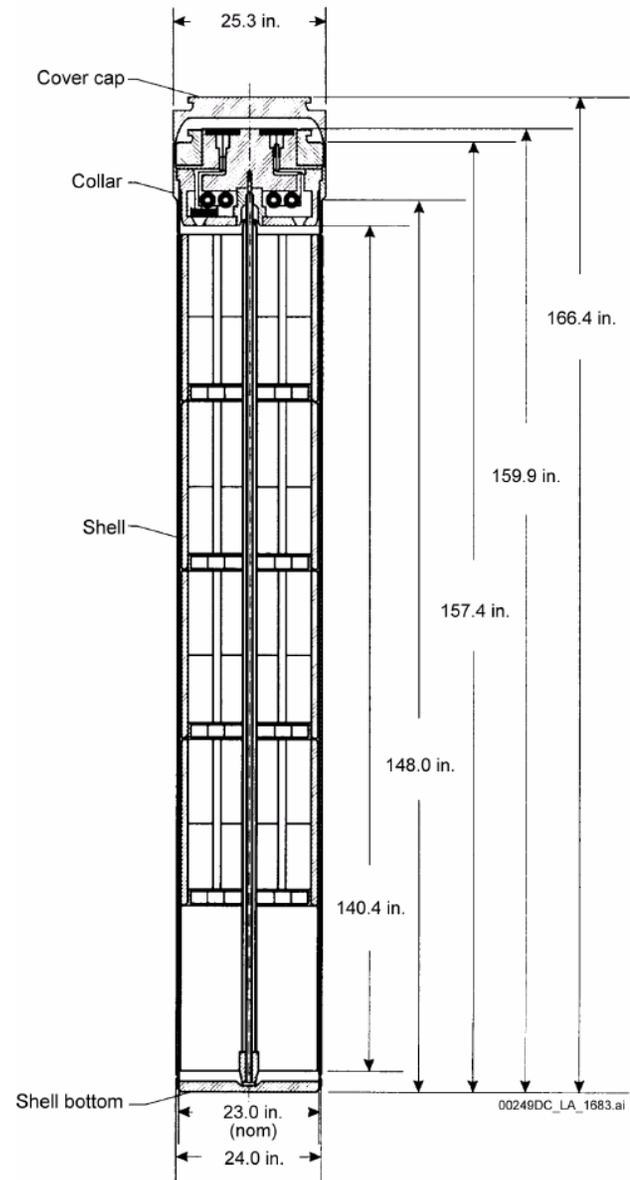
Wall Thickness:  
3/8 in. for 18 in. canister  
1/2 in. for 24 in. canister

Maximum Weight with Fuel:  
5,000 to 10,000 lb

External Lengths:  
Short canister: 118.11 in.  
Long Canister: 179.92 in.

Material:  
Canister Body: SS316 L

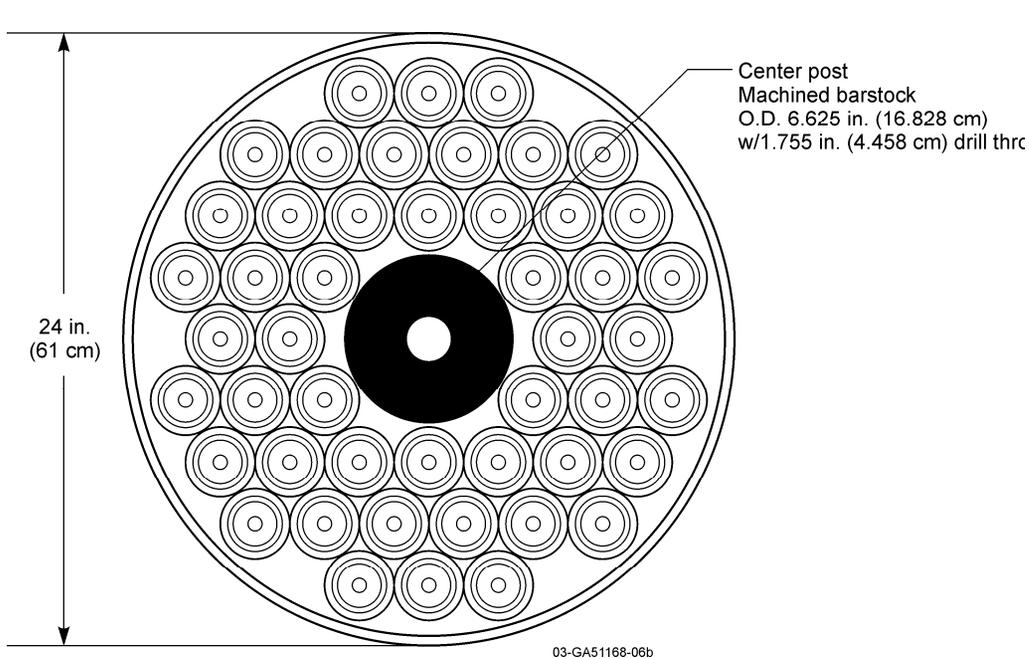
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**EM Environmental Management**

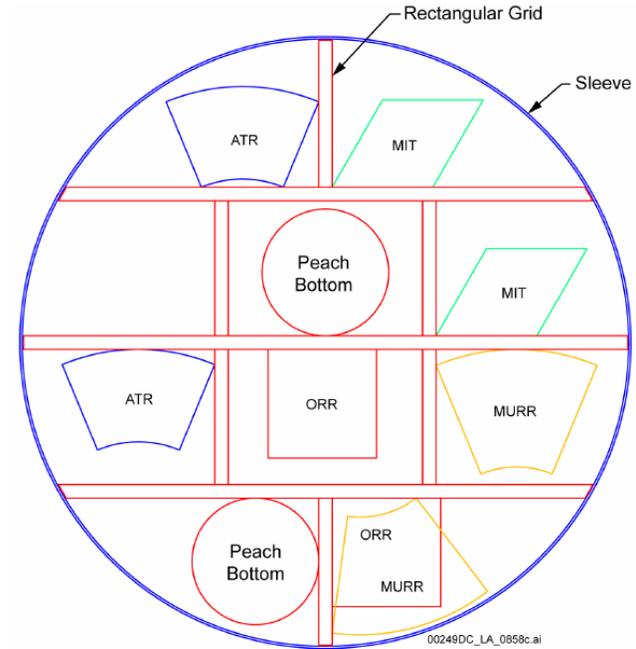
safety ❖ performance ❖ cleanup ❖ closure

# DOE SNF Baskets



MCO basket

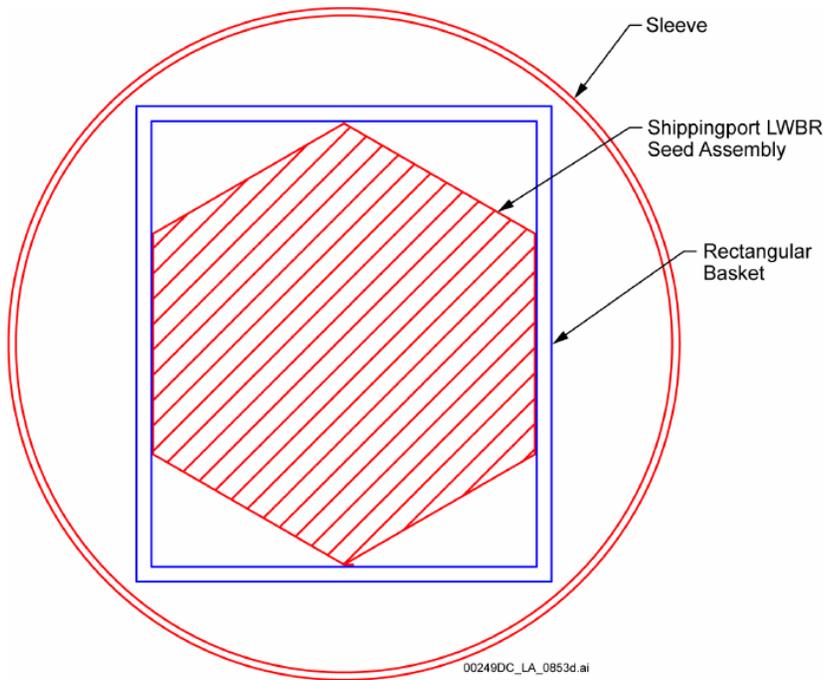
Neutron absorber not required



AI fuel

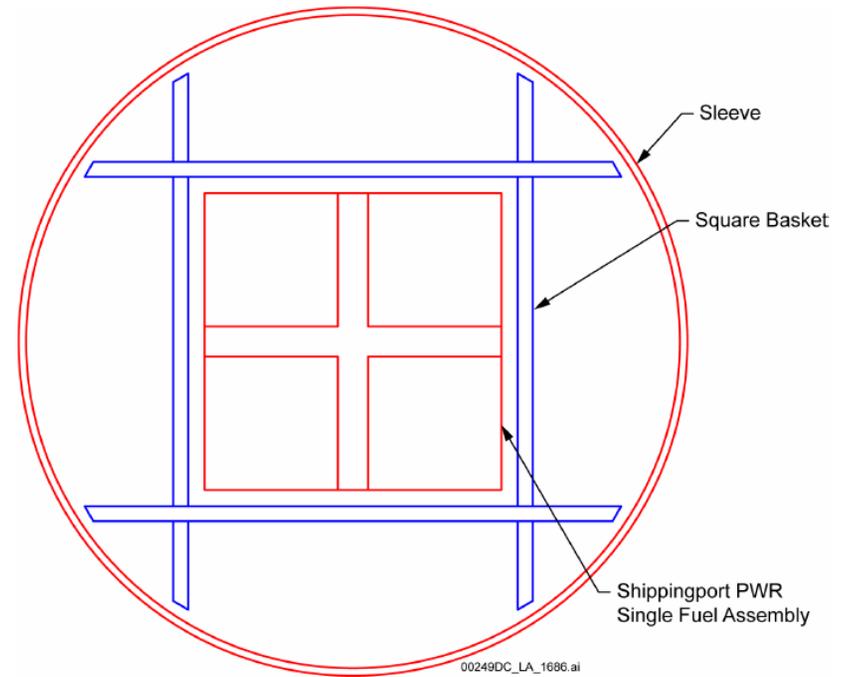
Neutron absorber basket

# DOE SNF Baskets



Shippingport LWBR basket

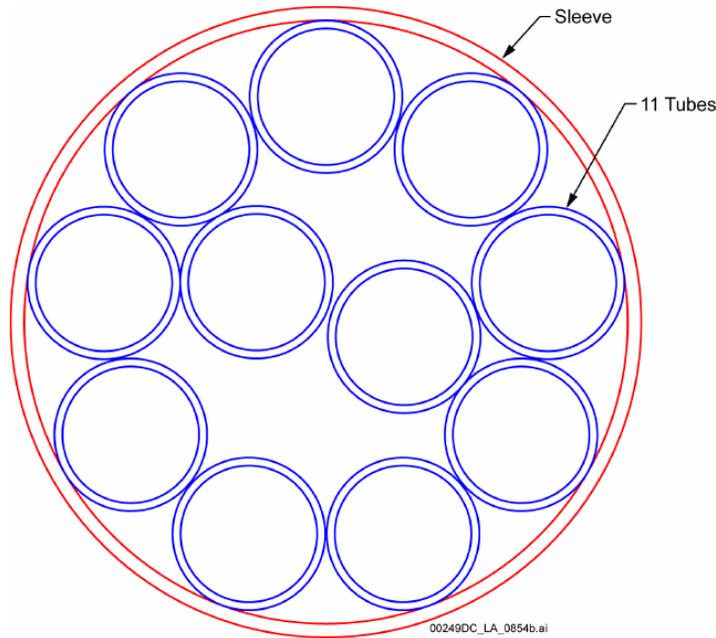
Neutron absorber beads



Shippingport PWR basket

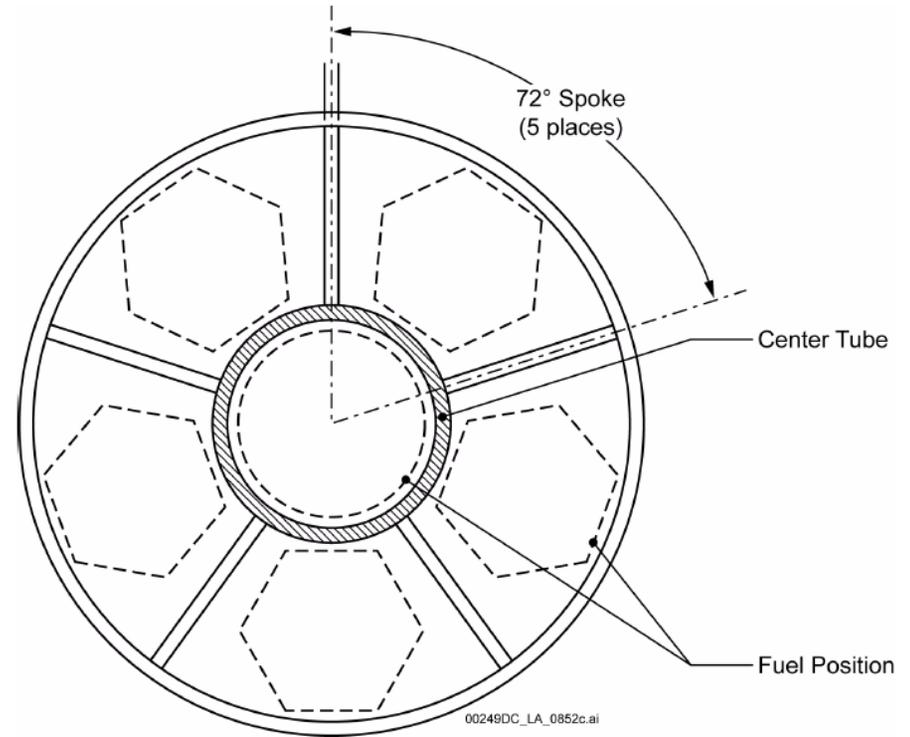
Neutron absorber not required

# DOE SNF Baskets



Fermi basket

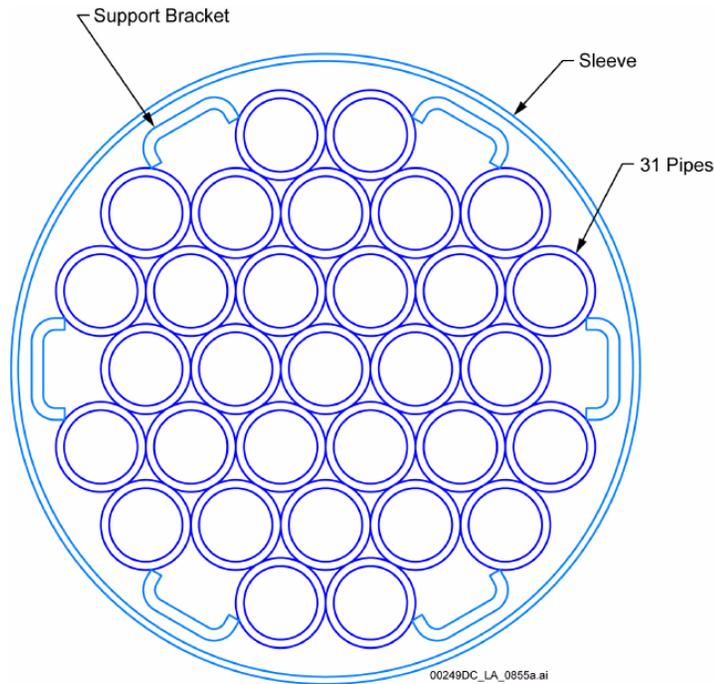
Neutron absorber basket and beads



FFTF basket

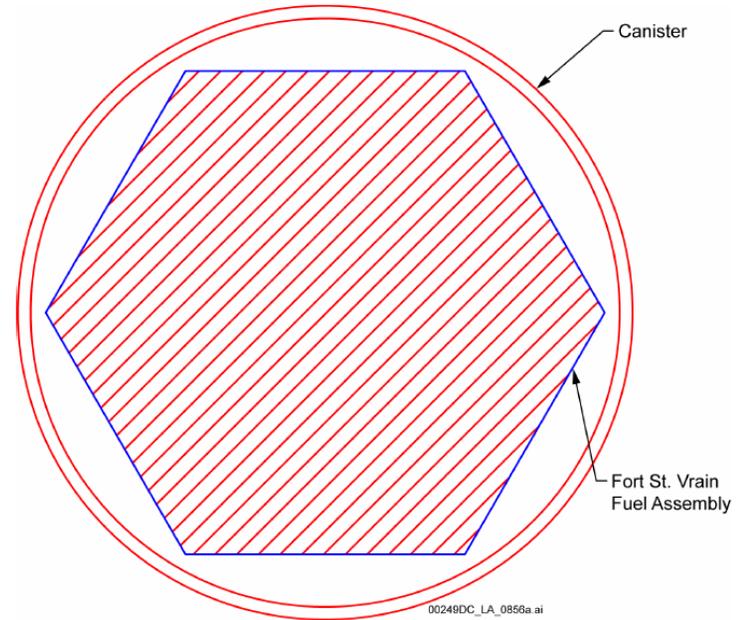
Neutron absorber basket and beads

# DOE SNF Baskets



TRIGA basket

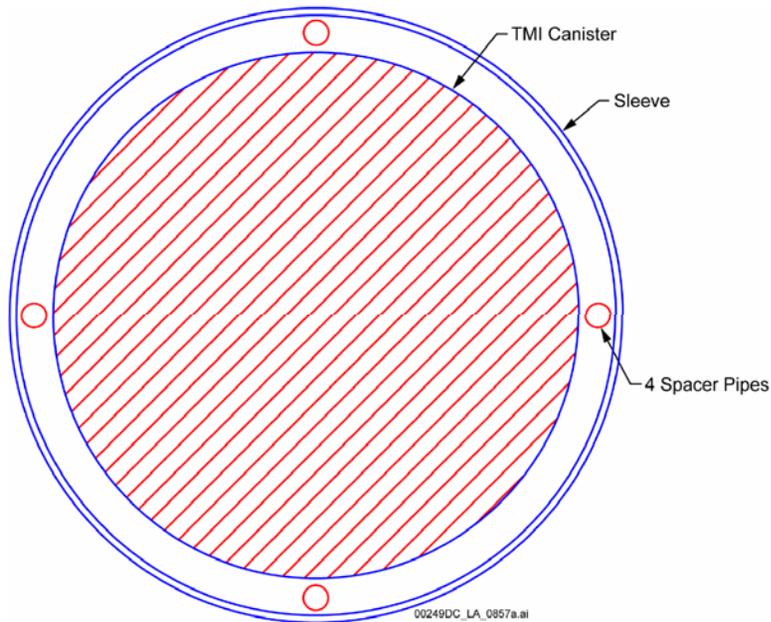
Neutron absorber basket



Ft. St Vrain

No basket / Neutron absorber not required

# DOE SNF Baskets



## TMI-2 basket

Neutron absorber not required

# DOE SNF analyzed/remain

Fuel Basket	~MTHM Analyzed	~MTHM Remain
N Reactor	2099.3	10.8
Aluminum (ATR, MURR, ORR, MIT)	6.4	11
Fermi	4	.6
FFTF	10.8	2
Ft. St. Vrain	23.4	2.9
Shippingport LWBR	5.1	45
Shippingport PWR	.5	9
TMI-2	81.8	91.3*
TRIGA	2	<.1
<b>Total</b>	<b>2233.3</b>	<b>172.7</b>

\* Consisting of 57.1 MTHM intact commercial SNF that will be disposed of in TAD

# Next Step

- Show completed criticality analysis bounds remaining DOE fuels in each basket configurations
- Analysis initiated for the aluminum fuel basket in support of moderator exclusion – report that document the analysis for the aluminum fuel basket will be completed at the end of FY2008
- Other basket configuration analyses have been identified in the scope of the NSNFP five year plan
- Summarize and document results for sites' use in their packaging planning



# Summary

- DOE SNF fuels/basket configurations identified in LA
- Plan in place to show completed analyses bound the remainder DOE SNFs
- Plan to complete these analyses by LA approval