



FOSTER WHEELER ENVIRONMENTAL CORPORATION

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U.S. Nuclear Regulatory Commission
Washington, DC 20555

August 8, 1996

ATTN: Document Control Desk

This letter is in response to the NRC's request for action delineated in NRC Bulletin 96-04: "Chemical, Galvanic, or Other Reactions in Spent Fuel Storage and Transportation".

Foster Wheeler (FW) has two licenses to consider: The NRC approved "Topical Report for the Foster Wheeler Modular Vault Dry Store for Irradiated Nuclear Fuel" (Project No. M-46) and the Fort St. Vrain ISFSI supplied to Public Service Company of Colorado. FW has completed its review of Bulletin 96-04 and does not believe that the Modular Vault Dry Storage (MVDS) System is susceptible to the problems addressed in the Bulletin for the reasons stated below.

1. The MVDS storage tube is never filled with water.
2. The MVDS Storage Tube is not sealed by welding, or by any other heat or spark generating process.
3. The MVDS Storage Tube can be accessed for in-service inspection of the internal gas environment and the presence of hydrogen (or any other gas) can be detected at any time.

These aspects of the ISFSI are expanded below.

Topical Report Design

The Topical Report MVDS is designed to store individual fuel assemblies inside carbon steel storage tubes. The exterior surfaces of the storage tubes are protected with a sprayed aluminum coating and the interior surface is protected by a graphite based etch primer paint.

The storage tube is designed to remain at the MVDS facility. It operates only in the dry condition and it is never subject to pool water immersion. Therefore, hydrogen generation is not an issue. Furthermore, the storage tube is closed by placing a shield plug into the top of the tube, with elastomeric seals located between the plug and the tube providing the containment seal. No welding operations take place to seal the storage tube, therefore there is no source of ignition, even if hydrogen could be produced.

The MVDS is unique among the licensed dry storage systems in that the MVDS permits continuous access to the storage tubes and samples of the internal atmosphere can be taken at any time to confirm that the correct storage conditions exist. If an undesirable gas were detected inside the tube, then it is possible to evacuate and purge the tube environment.

Note that the storage tube is not designed for transportation.

Fort St. Vrain ISFSI

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G PDR

Add: LTR ENCL
AEOO/RATB 1 1
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PM 1 1

The Fort St. Vrain MVDS is designed to store six HTGR fuel blocks inside carbon steel storage containers. The exterior surfaces of the storage containers are protected with a sprayed aluminum

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coating and the interior surfaces are protected by a graphite based etch primer paint. The Ft. St. Vrain reactor was a high temperature gas cooled reactor and therefore the fuel blocks remain dry during reactor operation.

The storage container is designed to travel from the reactor building to the ISFSI inside the FSV-1 shipping cask and to be resident at the ISFSI within the storage vault. The container is also suitable for off-site road transportation of the fuel blocks within a recently NRC licensed transportation cask.

The storage container operates only in dry conditions in the Ft. St. Vrain fuel loading area and at the ISFSI. It is never subjected to pool water immersion during loading and storage. Therefore, the conditions required for the generation of hydrogen do not exist.

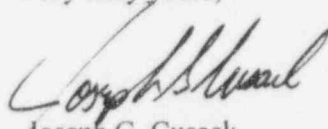
Further, the storage container is sealed by bolting a lid to the top of the container, with metallic O-ring seals between the lid and the container, providing the containment seal. No welding operations or any other heat generating process is used to seal the container, therefore, there is no source of ignition even if a combustible gas was present.

The Ft. St. Vrain ISFSI permits access to the storage containers and samples of the internal environment can be taken at any time to confirm the correct storage condition. If gas were detected, the storage tube could be readily evacuated and purged to restore the correct dry air atmosphere. This ability provided by the MVDS system ensures that surveillance and inspection programs can be implemented to guarantee the safe storage of the fuel and to ensure that safe conditions exist prior to removing the containers from storage for off-site transport.

With regard to the two designs discussed above, the topical report design concept has not been purchased by any users. The Ft. St. Vrain MVDS is an existing facility owned by Public Service Company of Colorado, soon to be transferred to the DOE. Foster Wheeler has liaised with Public Service personnel regarding Bulletin 96-04 and understands that Public Service will be responding to the Bulletin under separate cover.

We hope that the NRC finds our response satisfactory. If there are any additional questions, please contact the writer at the address provided in the letterhead

Very truly yours,

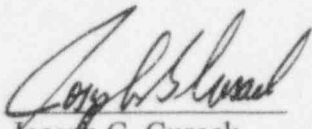

Joseph G. Cusack
Vice President/Chief Engineer

cc: U.S. Nuclear Regulatory Commission
ATTN: Regional Administrator, Region 4
611 Ryan Plaza Drive
Arlington, TX 76011

**United States of America
Nuclear Regulatory Commission**

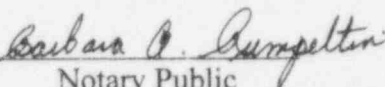
Affidavit

Joseph G. Cusack, being first duly sworn, deposes and says: That he is Vice President and Chief Engineer of Foster Wheeler Environmental Corporation, that he has read the response to NRC Bulletin 96-04, and knows the content thereof, and that the statements and matters set forth therein are true and correct to the best of his knowledge information and belief.


Joseph G. Cusack
Vice President/Chief Engineer

State of New Jersey
County of Bergen

Subscribed and sworn to before me, a Notary Public on this
15th day of August, 1996


Notary Public

My commission expires June 4, 192001