GLOBAL ENERGY CONSULTANTS, LLC

October 16, 2003

Mr. E. William Brach
Director, SFPO
United States Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Subject: Concerns Regarding NUHOMS Operating Experience

References: (1) T.A. Jones to Secretary U.S. NRC, "Direct-to-Final Rule on Amendment No. 5 to CoC No. 1004," September 11, 2003
(2) Platts Nuclear Fuel, Vol. 28, No. 21, October 13, 2003, pages 12-13

Dear Director Brach:

On September 11, 2003, I sent a letter to the NRC questioning the adequacy of the NUHOMS dry spent fuel storage cask design, including the design of the storage module, Reference (1).

On October 13, 2003, Platts Nuclear Fuel issued an article on the subject, Reference (2). It was stated in that article that a " ... NRC official did say that some of the issues Jones raised [in his September 11, 2003 letter] might have been considered during earlier reviews of the NUHOMS system."

I believe that reliance by the NRC on the results of earlier reviews could have negative consequences, such as:

(1) A repeat of undetected problems;

(2) A reluctance by the vendor to incorporate design improvements, or advances in the state-of-the-art, thereby avoiding a longer and more expensive review; and

(3) A lack of opportunity for the reviewer to apply current knowledge, experience and information to the entire design.

I now understand that a significant design problem was discovered with NUHOMS equipment at Susquehanna on September 16, 2003 – only five days after my letter to the NRC. Apparently, during a spent nuclear fuel loading procedure, a radiation stream was detected emanating from the air vents of an empty module which was located next to a

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filled module; and that the amount of radiation would have been a significant concern to the health and safety of the workers had it remained undetected by plant health physics staff.

I find it incredulous that this incident could have occurred with equipment that was designed, licensed, and placed into operation in the early 1990s, and continues to be marketed and employed today. Furthermore, I wonder how many similar incidents have occurred at other plants utilizing this design where the problem went undetected.

Other dry storage designs that were initially licensed and put into operation during this same period have experienced similar problems. These include incidents with the VSC design where a hydrogen explosion occurred during welding of a canister lid; and canister internal carbon steel components experienced accelerated corrosion in the presence of borated water in the spent fuel pool due to the inadequacy of the carbon steel coating and/or the coating procedure.

The main impetus behind the Reference (1) letter was associated with the NUHOMS design and the repeated acceptance of early license approvals with new installations of the same design.

In my opinion, the level of review by the NRC for all spent nuclear fuel storage and transportation designs, new or old, should be raised to the level of today's standards, and those standards should continue to be updated and applied to new licensing applications. This is especially necessary given the fact that these technologies are now being called upon to store higher burnup, more radioactive, and hotter fuel.

I hope you find this opinion useful and helpful in protecting the health and safety of the public.

Sincerely yours,
Global Energy Consultants, LLC

T.A. Jones

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