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OFFICE OF SECRETARY
RULEMAKINGS
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February 7, 2000

Sherwin E. Turk, Esq.
Office of General Counsel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Licensing Proceeding re: Private Fuel Storage L.L.C.,
Docket No. 72-22-ISFSI

Dear Mr. Turk:

I am writing in reply to your letter of February 4, 2000, in which you responded to my request to make a Staff witness available for deposition regarding the Staff's evaluation of the PFS thermal design, the Holtec HI-STORM 100 cask system thermal design, and the Holtec HI-STAR 100 cask system thermal design. You have agreed to produce Jack Guttman, a Staff witness who is familiar with the the PFS and HI-STORM 100 thermal analyses. As per your telephone message of Friday afternoon, the State is filing a notice of Mr. Guttman's deposition and a motion to extend the discovery schedule until March 10.

You have refused, however, to produce a Staff witness who is knowledgeable about the HI-STAR 100 cask system, on the following grounds:

> The Staff does not plan to make a witness available for depositions on the HI-STAR transportation cask. The issue of transportation cask safety is beyond the permissible scope of this proceeding. In addition, Utah Contention H addresses only the HI-STORM storage cask, not the HI-STAR transportation cask; and the Staff's statement of position, filed on December 15, 1999, addresses only the HI-STORM cask, not the HI-STAR cask. I see no apparent basis for your assertion that "the Staff is relying on its SERs for both the HI-STORM and HI-STAR cask systems for its evaluation of the thermal analysis for the PFS facility."

In the hope of resolving this matter without having to seek relief from the Licensing Board, I am writing to request that you reconsider your response. As you know very well, the State's interest in questioning a knowledgeable witness about the HI-STAR 100 thermal analysis has nothing to do with the fact that HI-STAR is a transportation cask. The State seeks to depose a knowledgeable Staff witness regarding the Staff's evaluation of the thermal analysis for the HI-STAR 100 transportation cask system because NRC Staff documents make it quite clear that the Staff has, at least up until now, relied to some extent on its safety evaluation of the HI-STAR 100 transportation cask system in support of its safety evaluation of the thermal analysis for the HI-STORM 100 storage cask system, which in turn is used to justify the Staff's acceptance of the

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site-specific thermal analysis for the HI-STORM cask at the PFS facility. Thus, an inquiry into the Staff's basis for approving the thermal analysis for the HI-STAR 100 transportation cask system is highly relevant and necessary to the State's understanding of the Staff's basis for approving the site-specific thermal analysis for the casks to be used at the PFS facility.

There is only one place where the Staff disavows reliance on the safety analysis for the HI-STAR 100 cask system: the Staff's January 10, 2000, response to Utah Request for Admission No. 19 regarding Contention H, in which the Staff states that: "The Staff does not rely on the results of Mr. Hogsett's run of the ANSYS computer code for the HI-STAR 100 transportation cask to support its determination that the thermal design of the PFS facility is adequate to protect public health and safety." NRC Staff's Objections and Responses to the State of Utah's Third Set of Discovery Requests Directed to the NRC Staff (Utah Contention H) at 12. This assertion is quite recent, and is contradicted by previous Staff representations demonstrating that the Staff's safety review of the site-specific thermal analysis for the PFS facility is indirectly based on computer analyses that allegedly were performed for the Staff's safety evaluation of the HI-STAR 100 transportation cask system.

There can be no doubt that the Staff relies for its evaluation of the PFS thermal design on the Staff's July 30, 1999, safety evaluation of the thermal design for the HI-STORM 100 storage cask system. In its statement of its position with respect to Contention H, the Staff makes the following response to the State's assertion that "storage casks used in the License Application are not analyzed for the PFS maximum site design ambient temperature of 100°":

> The HI-STORM 100 system was analyzed for an ambient temperature up to 125°. Holtec International's analyses were reviewed by the staff and found to be acceptable, as noted in the Staff's safety evaluation report for the HI-STORM 100 system dated July 30, 1999."

NRC Staff's Position Concerning Contention Utah H (Inadequate Thermal Design) at 8.

The SER for the HI-STORM 100 storage cask system, in turn, contains language establishing that the Staff's safety analysis for the HI-STORM 100 storage cask system relied in part on the Staff's safety analysis of the HI-STAR 100 transportation cask system:

> **4.5.4 Confirmatory Analysis**
>
> The staff reviewed all inputs, assumptions, *methodology, and results* of the applicant's temperature and pressure analyses which were submitted in support of the SAR. All the assumptions were found to be in compliance with NUREG-1536 Section 4.V.5.(c). Input parameters are consistent with design values for the HI-STORM overpack. The applicant selected suitably bounding and appropriate boundary conditions for normal, off-normal, and accident conditions. *Previous staff evaluation of the applicant's HI-STAR 100 SAR's*

> *FLUENT computer code results, using the ANSYS finite element computer code, confirmed the temperature calculation results of this method.* The staff performed independent calculations for the form loss and friction loss coefficients used by the applicant to simulate the hydraulic characteristics of the internal air passage. The applicant's form loss coefficients were found to be suitably bounding and applicable to the specific geometry of the HI-STORM 100 air passages. The staff evaluated and accepted the applicant's selected heat transfer coefficients. The *temperature and pressure results were found to be correctly calculated using the identified inputs, assumptions, and methodology.*

SER at 4-8 (emphasis added). Thus, the SER for the HI-STORM 100 cask system establishes quite clearly that the Staff relied on computer analyses of the HI-STAR transportation cask system to establish the adequacy of the methodology and results of Holtec's thermal analysis for the HI-STORM storage cask system. While the Staff may now seek to change or disavow those assertions, it is relevant to inquire into the reasons for the change, and whether the Staff continues to rely on the HI-STAR 100 SER to any extent.

An opportunity to question a knowledgeable NRC Staff witness on the HI-STAR 100 SER is all the more relevant and important because of the extent to which the Staff's response to Requests for Admissions Nos. 17 and 18 appear to undermine and contradict the assertions in the HI-STAR 100 SER regarding the Staff's basis for approving the HI-STAR 100 thermal design.

The SER for the HI-STAR 100 transportation cask system makes the following assertions regarding the Staff's review of the HI-STAR 100 thermal analysis:

> The staff reviewed the models used by the applicant in the thermal analyses. The code inputs in the calculation packages were checked for consistency to confirm that the applicant used the appropriate material properties and boundary conditions where required. The engineering drawings were also consulted to verify that proper geometry dimensions were translated to the code model. The material properties presented in the TSAR were reviewed to verify that they were appropriately referenced and used conservatively. In addition, the staff performed a confirmatory analysis of the thermal performance of the cask SSCs identified as important to safety. *A detailed model of the fuel regions and basket geometry was developed using the ANSYS finite element code to ensure that the TSAR results were realistic and conservative. Independent homogenized thermal resistances were determined for the confirmatory calculation and employed in the model. The temperature distributions generated by the staff's model displayed agreement with those values determined by the applicant.*

SER at 4-10 (emphasis added). The Staff's January 10 responses to the State's Requests for Admissions Nos. 16, 17 and 18 now indicate that (a) contrary to the assertions in the HI-STAR SER, it wasn't the Staff that used the ANSYS code, but an individual named Steve Hogsett; (b)

Mr. Hogsett didn't run the ANSYS code for the benefit of the Staff's safety review, but for his own personal understanding; (c) Mr. Hogsett has left the agency; and (d) there apparently are no surviving records of Mr. Hogsett's analysis. These responses state as follows:

> REQUEST FOR ADMISSION NO. 16: Do you admit that the NRC Staff or one of its contractors has run one or more computer codes, other than FLUENT, for the purpose of evaluating the thermal design of the Holtec HI-STAR 100 transportation cask system.
>
> STAFF RESPONSE: No. Neither the NRC staff nor its contractors has run a computer code other than FLUENT for the purpose of evaluating the thermal design of the Holtec HI-STAR 100 transportation cask system. However, a former member of the Staff ran the ANSYS code in connection with his review of the HI-STAR transportation cask, as more fully described in response to Request for Admission No. 17, below.
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> REQUEST FOR ADMISSION NO. 17: Do you admit that the NRC Staff or one of its contractors ran the ANSYS computer program for the purpose of evaluating the thermal design of the HI-STAR 100 transportation cask system.
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> STAFF RESPONSE: No. However, on information and belief, an individual member of the Staff (Mr. Steve Hogsett) performed an ANSYS computer run for the purpose of obtaining a better understanding of the HI-STAR cask design and to confirm the Holtec ANSYS calculations. Mr. Hogsett is no longer employed at the NRC.
>
> REQUEST FOR ADMISSION NO. 18: Do you admit that neither the NRC Staff nor its contractor maintained any record of the inputs or outputs to the run(s) of the ANSYS computer code that was (were) done for the purpose of evaluating the themal design of the HI-STAR 100 transportation cask.
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> STAFF RESPONSE: The Staff objects to this request on the grounds that it improperly contains a compound question. Notwithstanding this objection, the Staff notes that it has not located any records concerning Mr. Hogsett's ANSYS computer run, or the inputs or outputs related thereto.

The Staff's responses to these requests for admissions cast fundamental doubt on the validity of the safety evaluation performed by the Staff for the HI-STAR 100 thermal analysis, and the legitimacy of the Staff's reliance on the HI-STAR safety evaluation for its approval of the HI-STORM 100 thermal analysis. This, in turn, raises grave questions about the extent and legitimacy of any reliance by the Staff on the HI-STAR safety evaluation for its approval of the site-specific thermal analysis for the PFS facility.

Therefore, under the NRC's standard of relevance, the State is entitled to inquire into the extent to which the Staff may be relying on its evaluation of the HI-STAR 100 thermal analysis for its

approval of the site-specific thermal analysis for the PFS facility. If the Staff has changed its position to disavow reliance on the Staff's safety evaluation of the HI-STAR 100 thermal analysis, the State is entitled to know when and why.

In closing, I hope that you will reconsider your refusal to produce, for deposition, an NRC Staff witness who is knowledgeable about the safety evaluation for the HI-STAR 100 transportation cask system. Please let me know of your decision by tomorrow noon, so that I can take any necessary action before the Licensing Board.

In the meantime, I am filing a notice of deposition seeking to depose a member of the NRC Staff who is knowledgeable about the thermal analysis for the HI-STAR 100 transportation cask system.

Sincerely,

Diane Curran

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