

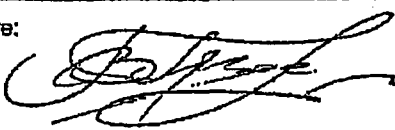
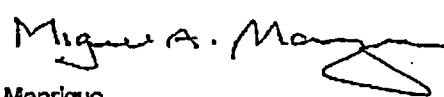


Enclosure 1 to E-25259

Transnuclear, Inc. Calculation NUH32PTH1-0420, "Air Flow within
NUHOMS HSM-H Loaded with 32PTH1 DSC," Revision 0
(Non-proprietary version, without discs)

 TRANSNUCLEAR <small>AN AREVA COMPANY</small>	Calculation	Calc. No.: NUH32PTH1-0420
		Rev. No.: 0
Calculation Title:	Page: 1 of 9	
Air Flow within NUHOMS HSM-H Loaded with 32PTH1 DSC	Project No.: NUH32PTH1	
	DCR No.: N/A	
Project Name: NUHOMS® 32PTH1 Transportable and Storage System		
Number of CDs attached: 1		
If original issue, is Licensing Review per TIP 3.5 required?		
<input checked="" type="checkbox"/> No (explain)	<input type="checkbox"/> Yes	Licensing Review No _____
This calculation is performed to support amendment application subjected to NRC review		
Software utilized: —	Version: —	
Calculation is complete		
Originator's Signature: Davy Qi 	Date: 6/27/06	
Calculation has been checked for consistency, completeness, and correctness		
Checker Signature: Slava Guzeyev 	Date: 6/27/06	
Calculation is approved for use		
Project Engineer Signature: Miguel Manrique 	Date: 1/12/07	

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Calculation

Calc. No.: NUH32PTH1-0420

Rev. No.: 0

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Revision Summary

REV.	DATE	DESCRIPTION	AFFECTED PAGES	AFFECTED DISCS
0	1/12/07	Initial Issue	All	All

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1.0 Purpose

The purpose is to calculate the airflow rates and air temperatures within the NUHOMS® HSM-H loaded with 32PTH1 DSC with high heat load up to 40.8 kW for normal and off-normal operating conditions.

2.0 Assumptions and Conservatism

The HSM-H/32PTH1 DSC configuration considered in this calculation is similar to the HSM-H/32PTH DSC configuration in HD SAR [1]. [REDACTED]

[REDACTED]

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3.0 Design Input / Data

Total maximum decay heat loads for HSM-H loaded with 32PTH1 DSC are: Q=31.2 kW and 40.8 kW.

The HSM-H airflow calculation is based on the following operating conditions:

The ambient temperatures applied in this calculation are summarized in Table 3-1.

Table 3-1 Summary of Ambient Temperatures Applied [3]

Operating Condition	Ambient Temperature, °F
Normal	0
	106
Off-Normal	-40
	117
Accident-extreme hot ambient	133

Flat stainless steel plates [REDACTED] are used for both top and side heat shields. [REDACTED]

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[Redacted text block]

[Redacted text block]

[Redacted text block] Table 3-2 lists HSM-H/DSC dimensions used in air flow calculation for HSM-H/32PTH1 DSC design.

[Redacted text block]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

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5.0 References

1. SAR, *Safety Analysis Report for the NUHOMS® -HD Horizontal Modular Storage System for Irradiated Nuclear Fuel*, Transnuclear, Inc., NRC Docket No. 72-01030, Rev.4, January 2006.

[Redacted]

[Redacted]

[Redacted]

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[Redacted]

[Redacted]

[Redacted]

[Redacted]

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6.0 Results

The calculated [REDACTED] airflow temperatures for normal and off-normal conditions are summarized in Table 6-1 for 31.2 kW and 40.8 kW heat loads. [REDACTED]

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Table 6-1 Airflow Calculation Results, 31.2 kW and 40.8 kW per 32PTH1 DSC

Operating Conditions		T _{amb}	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	T _{ext}	[REDACTED]
		°F	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	°F	[REDACTED]
40.8 kW	Off-Normal	-40	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	30.4	[REDACTED]
		117	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	216.3	[REDACTED]
	Normal	0	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	78.0	[REDACTED]
		106	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	203.4	[REDACTED]
	Accident-extreme hot ambient	133	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	235.1	[REDACTED]
31.2 kW	Off-Normal	-40	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	18.3	[REDACTED]
		117	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	199.2	[REDACTED]
	Normal	0	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	64.4	[REDACTED]
		106	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	186.6	[REDACTED]
	Accident-extreme hot ambient	133	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	217.4	[REDACTED]

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7.0 Conclusion

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The table is a large grid of approximately 10 columns and 20 rows. The majority of the cells are filled with a dense, dark, grainy pattern, indicating that the data has been redacted. Only a few cells, particularly in the right-hand side of the grid, appear to contain some faint, illegible text or numbers.

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