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John P. Stetz
Vice President - Nuclear
Davis-Besse

Docket Numbers 50-346, 72-14

License Number NPF-3

Serial Number 2355

January 31, 1996

Dr. Carl Paperiello - Director
Office of Nuclear Material Safety and Safeguards
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Registration of Dry Spent Fuel Storage Cask Use and Cask Heat Transfer Characteristics

Dear Dr. Paperiello:

Toledo Edison is providing registration of dry spent fuel storage cask use in accordance with 10CFR72.212(b)(1)(ii) and the required report of heat transfer characteristics in accordance with the Certificate of Compliance requirements. Toledo Edison has loaded three Standardized NUHOMS System (SNS) modules in accordance with the requirements of Certificate of Compliance Number 1004, Docket Number 72-1004. Registration information is provided in Attachment 1.

The first SNS was placed in service on January 1, 1996 followed by subsequent loadings which were completed on January 6, 1996 and January 10, 1996. Heat transfer characteristics were determined for each SNS in accordance with Certificate of Compliance 1004, Paragraphs 1.1.7 and 1.2.8. The first Dry Shielded Canister (DSC) loaded contains spent fuel with a total heat load of 9.42 kilowatts (kw) which satisfies the Davis-Besse Nuclear Power Station (DBNPS) philosophy of loading the oldest, least reactive fuel first. Subsequent DSCs were loaded with spent fuel heat loads of 9.70 kw and 10.87 kw, respectively. Since the second and third DSCs were of a higher heat load, the heat transfer characteristics of all three are reported. The difference between the average Horizontal Storage Module (HSM) air outlet temperature and the ambient air temperature at the DBNPS Dry Fuel Storage Facility (DFSF) are compared to the predicted HSM differential temperature for the spent fuel heat load. The heat load for each spent fuel assembly loaded into the DSC was derived from the data required by Certificate of Compliance paragraph 1.2.1. Calculations were performed by VECTRA Technologies, Inc. to predict the differential temperature for allowed design air inlet

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temperatures and decay heat loads from two to twenty-four kw. The methodology for this calculation and inputs are documented in the Safety Analysis Report for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel, Nuclear Regulatory Commission Docket Number 72-1004. The calculation accounts for the pressure difference across the HSM causing flow (i.e., stack effect) which at steady state conditions is equal to the dynamic pressure loss of the HSM. Steady state air mass flow rate is related to the DSC decay heat rate and the air temperature difference. The decay heat of the DSC is transferred from the DSC by convective air flow.

Temperature measurements for the first fourteen days of service for each HSM and the calculated temperature difference for each HSM are tabulated in Attachment 2. The calculated temperature differences are plotted on the predicted temperature difference curve for each HSM. The data shows an expected scatter caused by environmental factors such as wind speed, wind direction, solar loading and the thermal inertia of the SNS. Differential temperatures for each HSM being less than the calculated prediction, indicate the thermal performance of each HSM is within the limits analyzed in the Safety Analysis Report and demonstrate acceptable performance of each SNS.

Should you have any questions or require additional information, please contact Mr. James H. Freels, Manager - Regulatory Affairs, at (419) 249-2366.

Very truly yours,

DLM/eld

cc: L. L. Gundrum, NRC Project Manager
H. J. Miller, Regional Administrator, NRC Region III
S. Stasek, DB-1 NRC Senior Resident Inspector
USNRC Document Control Desk
Utility Radiological Safety Board

Cask Registration Information

Licensee Name and Address:

Toledo Edison Company
Davis-Besse Nuclear Power Station
5501 North State Route 2
Oak Harbor, Ohio 43449

License Number: NPF - 3

Docket Numbers: 50-346; 72-14

Certificate Number: 1004

Model Number: Standardized NUHOMS 24P

Identification Numbers:

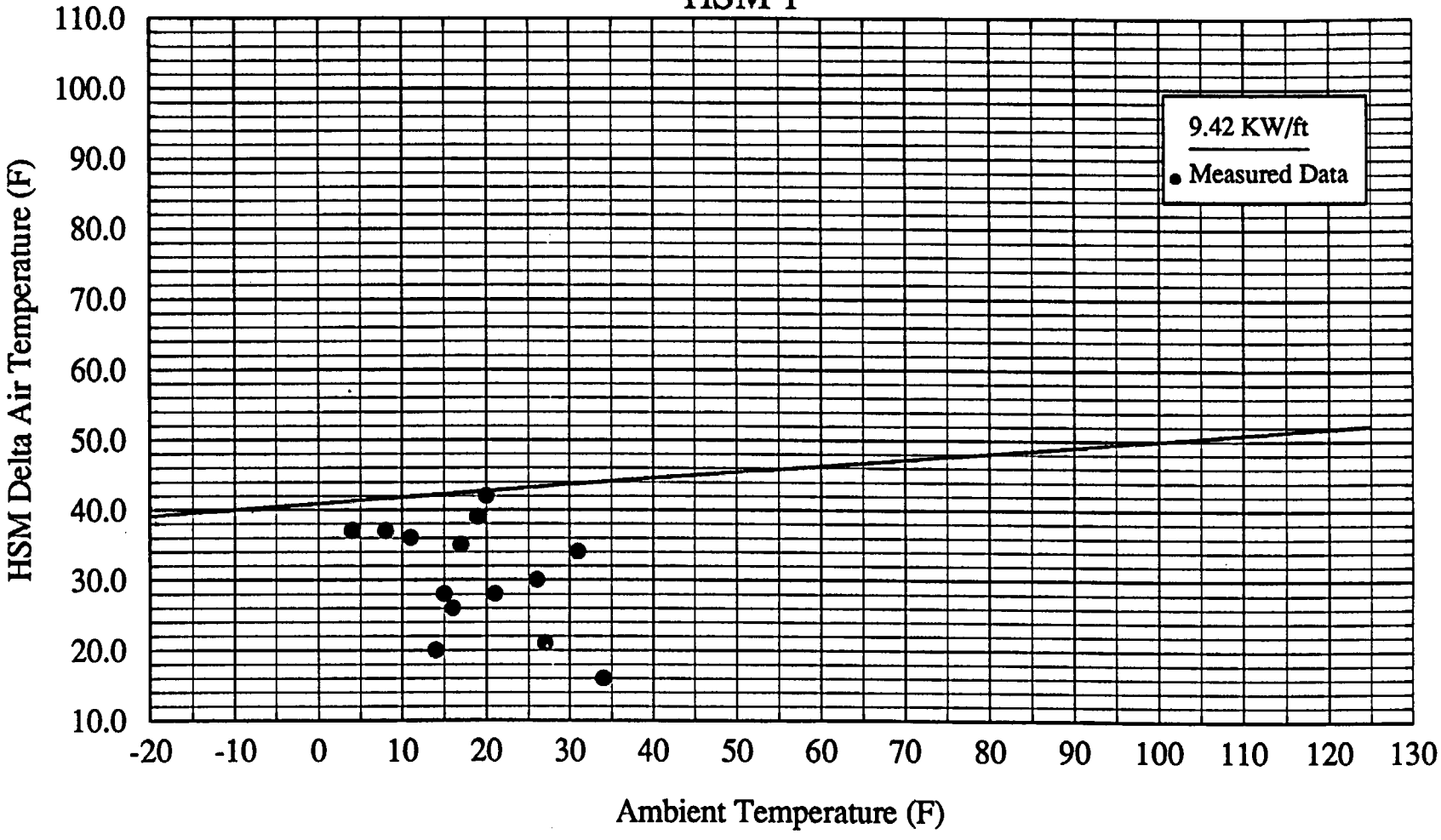
Cask Number	Dry Shielded Canister	Horizontal Storage Module
1	DB24P-R01	DB24P-UV01
2	DB24P-R02	DB24P-UV02
3	DB24P-R03	DB-24P-UV03

Heat Transfer Characteristics
for Standardized NUHOMS
System #1 at DBNPS

Date	Ambient Temperature (°F)	Average Outlet Air Temperature (°F)	Differential Air Temperature (°F)
Jan. 1	31	65	34
2	26	56	30
3	19	58	39
4	4	41	37
5	8	45	37
6	15	43	28
7	16	42	26
8	11	47	36
9	21	49	28
10	17	52	35
11	14	34	20
12	20	62	42
13	27	48	21
14	34	50	16

HSM Delta Temp. vs Ambient Temperature

HSM 1

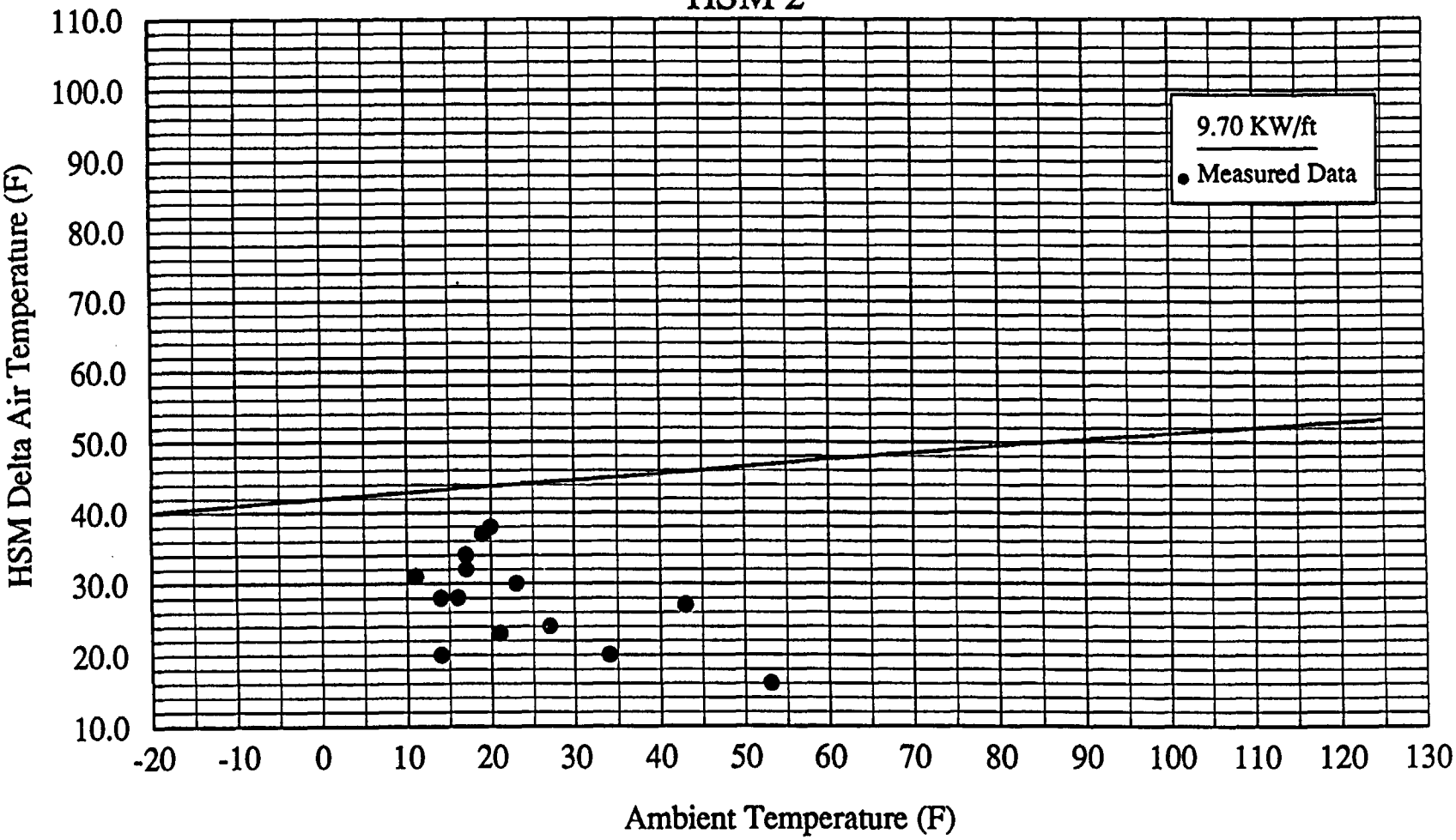


Heat Transfer Characteristics
for Standardized NUHOMS
System #2 at DBNPS

Date	Ambient Temperature (°F)	Average Outlet Air Temperature (°F)	Differential Air Temperature (°F)
Jan. 7	16	44	28
8	11	42	31
9	21	44	23
10	17	49	32
11	14	34	20
12	20	58	38
13	27	51	24
14	34	54	20
15	19	56	37
16	23	53	30
17	43	70	27
18	53	69	16
19	14	42	28
20	17	56	39

HSM Delta Temp. vs Ambient Temperature

HSM 2



Heat Transfer Characteristics
for Standardized NUHOMS
System #3 at DBNPS

Date	Ambient Temperature (°F)	Average Outlet Air Temperature (°F)	Differential Air Temperature (°F)
Jan. 11	14	41	27
12	20	48	28
13	27	53	26
14	34	47	13
15	19	57	38
16	23	58	35
17	43	64	21
18	53	72	19
19	14	45	31
20	17	49	32
21	27	54	27
22	38	48	10
23	34	62	28
24	32	68	36

HSM Delta Temp. vs Ambient Temperature

HSM 3