

April 10, 2017

Patricia Schroeder  
Standards Manager  
American Nuclear Society  
555 N. Kensington Avenue  
La Grange Park, IL 60526

Dear Ms. Schroeder:

This letter is to request American Nuclear Society (ANS) permission to use some parts of the ANS-5.1-2014 Standard on Decay Heat Power in Light Water Reactors, in a proposed new Regulatory Guide 3.54 – Spent Fuel Heat Generation in an Independent Spent Fuel Storage Installation. These parts consist of data presented in several tables of the standard that describe fission product decay heat behavior. Specific information on the requested data is provided below.

Requester point of contact: Travis Tate, Branch Chief, NMSS/DSFM/CSRAB

Requesting organization: U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Request details: ANSI/ANS-5.1-2014, Decay Heat Power in Light Water Reactors  
Table 5 (alpha and lambda values only), Sect. 4.2, page 14  
Table 6 (alpha and lambda values only), Sect. 4.2, page 15  
Table 7 (alpha and lambda values only), Sect. 4.2, page 16  
Table 8 (alpha and lambda values only), Sect. 4.2, page 17

Requested end use document: U.S. Nuclear Regulatory Commission, Regulatory Guide 3.54, Revision 2, Spent Fuel Heat Generation in an Independent Spent Fuel Storage Installation. The data from ANS-5.1-2014 would be combined into a single table of Regulatory Guide 3.54 as shown in the Enclosure to this letter.

Thank you for your consideration of this request.

Sincerely,

**/RA/**

Travis Tate, Chief  
Criticality, Shielding & Risk Assessment Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure:  
Proposed Table in Regulatory  
Guide 3.54, Rev. 2

cc: I. Gavld, ORNL

Proposed Table in Regulatory Guide 3.54, Revision 2

Term index $j$	U-235 (thermal)		Pu-239 (thermal)		U-238 (fast)		Pu-241 (thermal)	
	$\alpha_{1j}$	$\lambda_{1j}$	$\alpha_{2j}$	$\lambda_{2j}$	$\alpha_{3j}$	$\lambda_{3j}$	$\alpha_{4j}$	$\lambda_{4j}$
1	5.2800E-04	2.7216E+00	1.6540E-01	8.9246E+00	3.9368E-01	4.3427E+00	3.0934E-01	2.9049E+00
2	6.8588E-01	1.0256E+00	3.6928E-01	6.9005E-01	7.4588E-01	1.7114E+00	5.4434E-01	6.4911E-01
3	4.0752E-01	3.1419E-01	2.4006E-01	2.3618E-01	1.2169E+00	6.0572E-01	4.0782E-01	2.5569E-01
4	2.1937E-01	1.1788E-01	1.0269E-01	1.0118E-01	5.2820E-01	1.9429E-01	1.5828E-01	8.7123E-02
5	5.7701E-02	3.4365E-02	3.4916E-02	3.7193E-02	1.4805E-01	6.9788E-02	4.1577E-02	2.5068E-02
6	2.2530E-02	1.1762E-02	2.2961E-02	1.4319E-02	4.5980E-02	1.8809E-02	1.4818E-02	1.3323E-02
7	3.3392E-03	3.6065E-03	3.9070E-03	4.5094E-03	1.0406E-02	6.1265E-03	5.8176E-03	6.3772E-03
8	9.3667E-04	1.3963E-03	1.3080E-03	1.3211E-03	1.6991E-03	1.3799E-03	1.9482E-03	2.0221E-03
9	8.0899E-04	6.2608E-04	7.0265E-04	5.3481E-04	6.9102E-04	5.2799E-04	9.5196E-04	6.2933E-04
10	1.9572E-04	1.8924E-04	1.4297E-04	1.7297E-04	1.4736E-04	1.6145E-04	1.8208E-04	1.7462E-04
11	3.2609E-05	5.5074E-05	1.7642E-05	4.8918E-05	2.4049E-05	4.8419E-05	1.5310E-05	4.0172E-05
12	7.5827E-06	2.0971E-05	7.3646E-06	2.0155E-05	6.9288E-06	1.5644E-05	4.5039E-06	1.5289E-05
13	2.5189E-06	9.9940E-06	1.7720E-06	8.3687E-06	6.4927E-07	5.3610E-06	9.8277E-07	7.6113E-06
14	4.9836E-07	2.5401E-06	5.4945E-07	2.3620E-06	4.3556E-07	2.1689E-06	5.1832E-07	2.5083E-06
15	1.8523E-07	6.6332E-07	1.6736E-07	6.4594E-07	1.6020E-07	6.3343E-07	2.3018E-08	1.1312E-06
16	2.6592E-08	1.2281E-07	2.1160E-08	1.2822E-07	2.3089E-08	1.2879E-07	1.5817E-07	6.2987E-07
17	2.2356E-09	2.7163E-08	2.9388E-09	2.5166E-08	2.5481E-09	2.5604E-08	1.8074E-08	1.3149E-07
18	8.9582E-12	3.2955E-09	1.3659E-10	1.3176E-08	3.5071E-11	9.1544E-09	3.6922E-09	2.4237E-08
19	8.5968E-11	7.4225E-10	5.7450E-11	7.3568E-10	6.3399E-11	7.3940E-10	5.3843E-11	9.6433E-09
20	2.1072E-14	2.4681E-10	3.8422E-14	2.4663E-10	4.1599E-14	2.4731E-10	5.3003E-11	7.3467E-10
21	7.1219E-16	1.5596E-13	1.8030E-16	3.3490E-13	5.3295E-16	1.9594E-13	4.8358E-14	2.4827E-10
22	8.1126E-17	2.2573E-14	1.8342E-15	1.8761E-13	1.6695E-18	6.4303E-14	9.8516E-16	1.6873E-13
23	9.4678E-17	2.0503E-14	1.9884E-16	3.1544E-14	4.1058E-16	6.4229E-14	1.3076E-16	8.3639E-15

REQUEST ANS PERMISSION TO USE SOME PARTS OF THE ANS-5.1-2014 STANDARD ON DECAY HEAT POWER IN LIGHT WATER REACTORS, IN A PROPOSED NEW REGULATORY GUIDE 3.54-SPENT FUEL HEAT GENERATION IN AN ISFSI, DOCUMENT DATE: APRIL 10, 2017

**ADAMS Accession No.: ML17079A072**

OFFICE	DSFM/CSRAB	DSFM/CSRAB	DSFM/SFLB	OGC	DSFM	DSFM
NAME	ASotomayor	TTate	WWheatley	RNorwood	AHsia	MLayton
DATE	3/22/2017	4/10/17	3/28/17	3/24/2017	4/6/17	4/6/17