

July 7, 2017

Docket No. 52-048

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

**SUBJECT:** NuScale Power, LLC Submittal of Changes to Part 3 of the Design Certification Application

**REFERENCE:** Letter from NuScale Power, LLC to U.S. Nuclear Regulatory Commission, "NuScale Power LLC Submittal of the NuScale Standard Plant Design Certification Application," dated December 31, 2016 (ML17013A229)

During a May 9, 2017 Probabilistic Risk Assessment audit teleconference with representatives of the U.S. Nuclear Regulatory Commission (NRC), NuScale Power, LLC (NuScale) discussed potential updates to Part 3 of the referenced Design Certification Application (DCA). The Enclosure to this letter provides a mark-up of the pages incorporating the discussed changes to Part 3 of the DCA, in redline/strikeout format. NuScale will include this change as part of a future revision to the NuScale DCA.

This letter makes no regulatory commitments or revisions to any existing regulatory commitments.

Please contact Steve Mirsky at 240-833-3001 or at [smirsky@nuscalepower.com](mailto:smirsky@nuscalepower.com) if you have any questions.

Sincerely,



Jennie Wike  
Manager, Licensing  
NuScale Power, LLC

Distribution: Samuel Lee, NRC, TWFN-6C20  
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Enclosure: Changes to Part 3 of the DCA



LO-0717-54796

**Enclosure:**

Changes to Part 3 of the DCA

environment. Therefore, a conservative assumption is made as a modeling convenience in the release category relating to steam generator tube failures (release category 5) that 100 percent of the Xe is released to the environment.

**Table B-18: Release Fraction to the Environment, Time to Core Damage, and Release Duration for each Release Category Calculated by MELCOR**

Group	Release Category							
	1	2	3	4	5	6	7	8
Xe	5.9E-03	3.7E-03	9.3E-01	5.45E-03	1.0E+00	<del>5.5E-03</del> 055.8E-03	<del>5.7E-03</del> 055.4E-03	6.4E-01
Cs	<del>3.1E-06</del> 037.5E-06	6.7E-06	8.0E-01	<del>2.0E-06</del> 035.0E-06	7.0E-02	<del>2.0E-06</del> 054.8E-06	<del>1.9E-06</del> 053.7E-06	0.0E+00
Ba	<del>7.5E-08</del> 059.7E-08	1.6E-07	1.1E-02	<del>6.5E-08</del> 055.6E-08	1.1E-03	<del>6.3E-08</del> 077.0E-08	<del>5.3E-08</del> 072.4E-08	0.0E+00
I	<del>4.2E-06</del> 037.5E-06	<del>6.1E-06</del> 066.2E-06	8.0E-01	<del>2.7E-06</del> 036.5E-06	3.5E-01	<del>1.9E-06</del> 055.2E-06	<del>1.5E-06</del> 054.3E-06	2.43E-03
Te	<del>3.4E-06</del> 039.9E-06	5.7E-06	7.9E-01	<del>2.0E-06</del> 034.5E-06	1.1E-01	<del>1.9E-06</del> 056.5E-06	<del>1.8E-06</del> 053.7E-06	0.0E+00
Ru	<del>2.0E-08</del> 054.3E-08	7.3E-08	9.4E-03	<del>1.6E-08</del> 053.3E-08	1.9E-04	<del>1.4E-08</del> 073.1E-08	<del>1.1E-08</del> 073.4E-08	0.0E+00
Mo	<del>5.7E-06</del> 041.6E-06	1.3E-06	2.1E-01	<del>3.6E-06</del> 041.0E-06	5.6E-03	<del>3.7E-06</del> 061.0E-06	<del>3.6E-06</del> 067.8E-07	0.0E+00
Ce	<del>6.1E-12</del> 102.0E-12	1.6E-12	2.2E-07	<del>5.1E-12</del> 101.5E-12	5.0E-09	<del>5.1E-12</del> 121.6E-12	<del>4.1E-12</del> 129.1E-13	0.0E+00
La	<del>6.3E-12</del> 102.1E-12	1.6E-12	2.2E-07	<del>5.1E-12</del> 101.5E-12	5.1E-09	<del>5.2E-12</del> 121.6E-12	<del>4.1E-12</del> 129.3E-13	0.0E+00
TCD (hr)	5.85.7	10	3.33.2	9.4	17	13	9.49.5	53
Duration (hr)	96	96	26	96	56	96	96	59

Table B-19 summarizes the results for the Surry site for each release category discussed in Section B.2.1 to Section B.2.8 for a single module. The offsite consequences are mean MACCS results over a year of weather trials and the release category frequencies are point estimates. The offsite consequences per event are converted to per year by multiplying the values by the respective release category frequency. Summation of all release categories yields an estimated offsite dose risk of 1.3E-04 person-rem whole body dose per year for the NuScale design (utilized in Section 5.2). Summation of all release categories yields an estimated offsite economic risk (excluding the dollar value of public dose accrued) of 8.2E-02 dollars per year for the NuScale design (utilized in Section 5.3).

**Table B-19: Frequency of Occurrence and Offsite Consequences for Each Release Category**

Doses are whole body effective dose (ICRP60ED)

RC	Release Frequency (per year)	Offsite Dose per Event (person-rem/event)	Offsite Dose per Year (person-rem/year)	Offsite Economic Impact per Event (\$)	Offsite Economic Impact (\$/year)
1	2.2E-11	4.4E+01	9.7E-10	8.4E-01	1.8E-11
2	1.1E-12	3.9E+01	4.3E-11	1.8E-01	2.0E-13
3	1.7E-11	1.3E+06	2.2E-05	4.7E+09	8.0E-02
4	2.4E-09	3.0E+01	7.2E-08	0.0E+00	0.0E+00
5	1.4E-13	3.2E+05	4.5E-08	1.9E+08	2.7E-05