

NIOWAVE, INC.

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July 7, 2015

U.S. Nuclear Regulatory Commission
Region III Office
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

Attn: Mr. Kevin Null

Subj: Requested Amendment of NRC License Number 21-35144-02

Dear Mr. Null:

Our referenced license currently allows us to possess LEU in enrichments between 10% and 19.75%. In order to have greater flexibility to obtain LEU at all enrichments up to 20%, we request the following change to the conditions of our license:

- Change the lower limit of enrichment from 10% (current license limit) to 0.711%
- Change the upper limit of enrichment from 19.75% (current license limit) to <20%

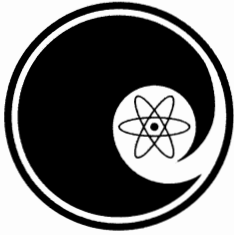
The change to the lower enrichment level would allow all percentages of LEU less than 10% down to natural uranium, which would allow material from commercial uranium suppliers. The change to the higher enrichment limit will allow us to use a typical LEU ordering specification of 19.75% +/- 0.1%. As currently written, our license allows LEU only up to 19.75%, which would not allow for any variance above that amount. To allow for the production variance, we would have to specify enrichment levels below the typical, which will force a special order, and will cost time and money. These changes will allow greater flexibility to pursue other suppliers, and will not change our financial assurance level as we are not requesting to possess any additional grams of U-235.

Niowave is making significant progress in our effort to produce Mo-99 from uranium using a superconducting electron linac. Niowave's first domestic production of Mo-99 from uranium is scheduled for this summer, and we plan to present these results at the Mo-99 Topical Meeting in Boston in September 2015.

The specific changes to the wording we propose to our current license are attached as Appendix 1.

Regards,

Terry L. Grimm
President and Senior Scientist



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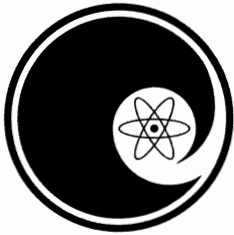
APPENDIX 1

Replace the paragraph on page 1 of the NRC Form 313 "Accelerator Produced Radionuclides" Continuation of Responses dated 2/11/2015 that reads:

The special nuclear material (SNM) proposed for this license is low enriched uranium (LEU) in solid form where the U-235 enrichment is between 19.75% and 10% by weight. We will not exceed the maximum possession limits for the contained U-234, U-235, or U-238 as outlined in Table 5.1. See Figure 5.1 for how the proposed possession limit for LEU varies based on enrichment of U-235. See Table 6.1 for a description of the chemical and physical form of these isotopes and a description of their use.

With (changes in *italics*):

The special nuclear material (SNM) proposed for this license is low enriched uranium (LEU) in solid form where the *U-235 enrichment is greater than the naturally occurring abundance but less than 20%* by weight. We will not exceed the maximum possession limits for the contained U-234, U-235, or U-238 as outlined in Table 5.1. See Figure 5.1 for how the proposed possession limit for LEU varies based on enrichment of U-235. See Table 6.1 for a description of the chemical and physical form of these isotopes and a description of their use.



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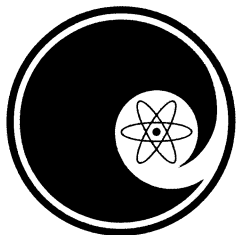
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APPENDIX 1

Replace Table 5.1 with the table below:

Table 5.1: Proposed LEU possession limits based on U-235 enrichment.

U-235 Enrichment (%)	LEU Mass Limit (g)	LEU Activity Limit (mCi)	U-234 Mass Limit (g)	U-234 Activity Limit (mCi)	U-235 Mass Limit (g)	U-235 Activity Limit (mCi)	U-238 Mass Limit (g)	U-238 Activity Limit (mCi)
0.711	291.0	1.96E-01	1.5E-02	9.40E-02	2.1	4.47E-03	288.9	9.71E-02
1.00	219.0	1.72E-01	1.5E-02	9.40E-02	2.2	4.73E-03	216.8	7.28E-02
2.00	117.0	1.37E-01	1.5E-02	9.37E-02	2.3	5.05E-03	114.7	3.85E-02
3.00	79.3	1.25E-01	1.5E-02	9.36E-02	2.4	5.14E-03	76.9	2.58E-02
4.00	59.8	1.18E-01	1.5E-02	9.36E-02	2.4	5.17E-03	57.4	1.93E-02
5.00	47.8	1.14E-01	1.5E-02	9.36E-02	2.4	5.16E-03	45.4	1.53E-02
6.00	39.7	1.11E-01	1.5E-02	9.36E-02	2.4	5.15E-03	37.3	1.25E-02
7.00	33.9	1.09E-01	1.5E-02	9.37E-02	2.4	5.13E-03	31.5	1.06E-02
8.00	29.5	1.08E-01	1.5E-02	9.37E-02	2.4	5.10E-03	27.1	9.12E-03
9.00	26.0	1.06E-01	1.5E-02	9.35E-02	2.3	5.05E-03	23.7	7.95E-03
10.00	23.3	1.06E-01	1.5E-02	9.37E-02	2.3	5.03E-03	21.0	7.05E-03
11.00	21.0	1.05E-01	1.5E-02	9.35E-02	2.3	4.99E-03	18.7	6.28E-03
12.00	19.1	1.04E-01	1.5E-02	9.35E-02	2.3	4.95E-03	16.8	5.65E-03
13.00	17.5	1.04E-01	1.5E-02	9.35E-02	2.3	4.91E-03	15.2	5.12E-03
14.00	16.2	1.03E-01	1.5E-02	9.39E-02	2.3	4.90E-03	13.9	4.68E-03
15.00	15.0	1.03E-01	1.5E-02	9.38E-02	2.3	4.86E-03	12.8	4.28E-03
16.00	13.9	1.02E-01	1.5E-02	9.34E-02	2.2	4.80E-03	11.7	3.92E-03
17.00	13.0	1.02E-01	1.5E-02	9.36E-02	2.2	4.77E-03	10.8	3.63E-03
18.00	12.2	1.02E-01	1.5E-02	9.37E-02	2.2	4.74E-03	10.0	3.36E-03
19.00	11.5	1.02E-01	1.5E-02	9.39E-02	2.2	4.72E-03	9.3	3.13E-03
20.00	10.8	1.01E-01	1.5E-02	9.35E-02	2.2	4.67E-03	8.6	2.90E-03



APPENDIX 1

Replace Figure 5.1 with the chart shown below:

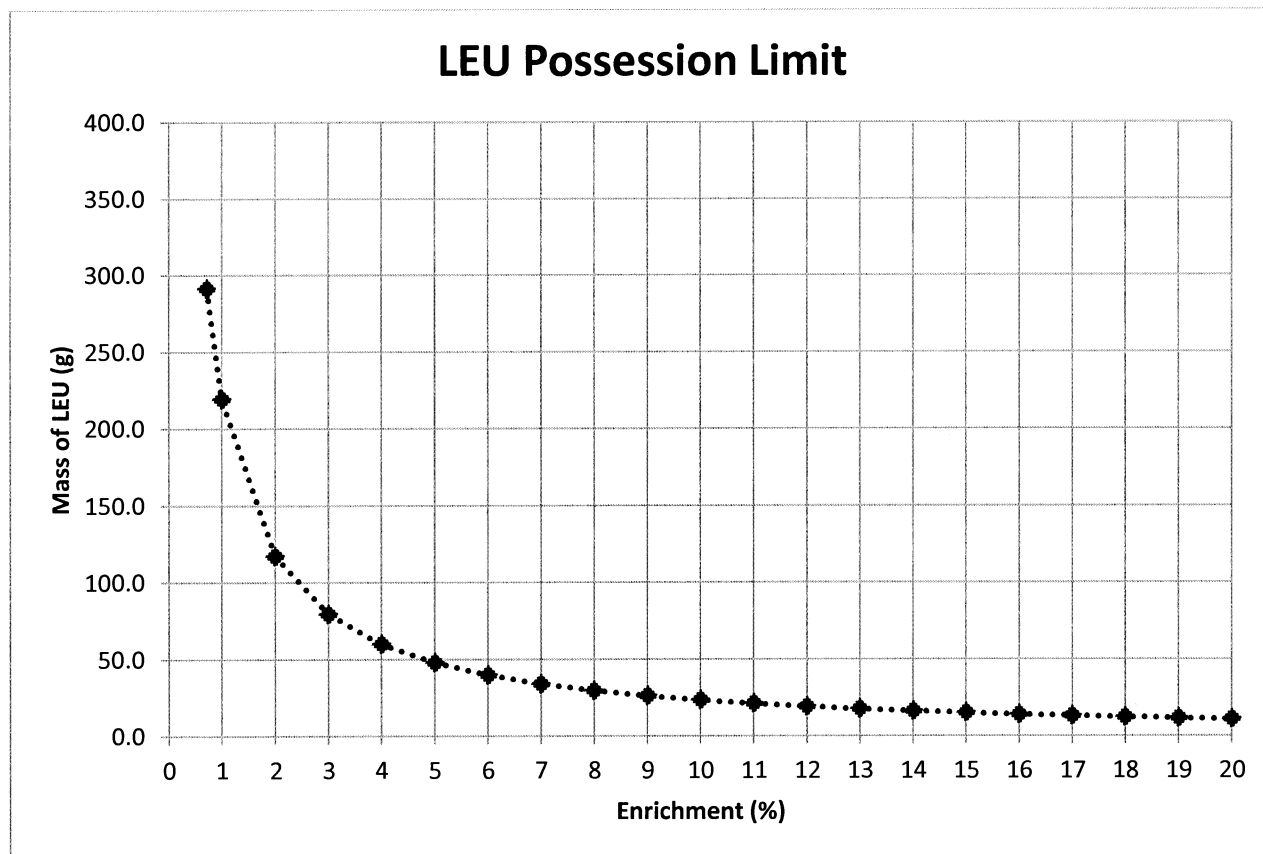


Figure 5.1: Proposed LEU possession limit shown with increasing enrichment.



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