



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE RD. SUITE 210  
LISLE, IL 60532-4352

July 9, 2018

Evan J. Boote, Ph.D.  
Radiation Safety Officer  
Spectrum Health Hospitals  
100 Michigan St. NE  
Grand Rapids, MI 49503

Dear Mr. Boote:

In a letter dated May 18, 2018, Spectrum Health Hospitals submitted to the U.S. Nuclear Regulatory Commission (NRC) a request to amend its NRC license no. 21-00243-06. After review of the request, we have noted that additional information is needed to complete our review. Specifically, as you and I discussed on June 20, 2018, please provide the following information:

1) Addition of locations of use - Spectrum Health Ludington Hospital and Spectrum Health Pennock and modifications to a location of use at Wyoming, Michigan:

Provide detailed facility diagrams in accordance with guidance in NUREG 1556, Volume 9, Revision 2, Section 8.16. The document can be found at <https://www.nrc.gov/docs/ML0734/ML073400289.pdf>:

- Description of each room where radioactive material will be stored including geographical direction, room numbers, boundaries, dimensions, and door entries;
- Description of areas above, below, and adjacent to the rooms of interest;
- Description of the hot labs indicating radioactive waste, receipt and storage of radioactive material (work bench, L-shield etc.), sinks, fume hoods, etc.

2) Addition of PET material at Helen DeVos Children's Hospital:

- Provide detailed diagrams of all areas where PET material will be used in accordance with guidance in NUREG 1556, Vol 9, Rev 2, Section 8.16 as described above;
- Provide a shielding evaluation describing radioisotopes used, uptake and scan times, distances to the adjacent areas, thicknesses of shielding material and the resulting exposure levels.

3) Addition of Authorized Users:

- Provide a signed and dated NRC Form 313 A (AUD) for Mohamad Kenaan M.D.
- Provide continuing education training and additional hours of classroom and work experience for Dale Leffler, M.D.
- Provide additional hours of classroom and work experience for Michael McNamara, M.D.


4) Termination of license nos. 21-00243-06 (Spectrum Health Ludington Hospital) and 21-18667-01 (Spectrum Health Pennock):

- Describe the radioactive materials use history including radioisotopes used (both sealed and unsealed sources), quantities;
- Provide a sample survey map providing contamination and exposure rates keyed to specific locations within each room where radioactive material is used and stored;
- Specify background readings as well as guidance/action levels;
- Specify the instrumentation used including the manufacturer's names and model numbers, last calibration date, and efficiency/correction factors;
- Document the date and name of individual/s performing the survey;
- List sealed sources used at the location;
- Provide the most recent leak test results for each source;
- Indicate the final location of the source.

Please provide a written response to this letter by July 23, 2018. Your response should be signed and dated by an authorized personnel. You may submit your response via email at [Magdalena.Gryglak@nrc.gov](mailto:Magdalena.Gryglak@nrc.gov). Please reference control no. 608868 in your response.

We will resume our review once we receive your response. If you have any questions, please do not hesitate to contact me at 630-829-9875 or [Magdalena.Gryglak@nrc.gov](mailto:Magdalena.Gryglak@nrc.gov).

Sincerely,



Magdalena R. Gryglak  
Health Physicist  
Materials Licensing Branch

License No. 21-00243-06  
Docket No. 030-01989

## **Gryglak, Magdalena**

---

**From:** Gryglak, Magdalena  
**Sent:** Monday, July 09, 2018 10:44 AM  
**To:** 'Evan.Boote@spectrumhealth.org'  
**Subject:** Request for Additional Information, NRC license no. 21-00243-06, Spectrum Health Hospitals  
**Attachments:** Request for Information.pdf

Mr. Boote,

As you and I discussed on June 20, 2018, I am requesting additional information as summarized in the attached letter.

Thank you

Magdalena R. Gryglak  
U.S. NRC, Region III  
630-829-9875