



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

February 8, 2011

The Queen's Medical Center
ATTN: Brian Oyadomari
Radiation Safety Officer
1301 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: DECOMMISSIONING FINANCIAL ASSURANCE

Dear Mr. Oyadomari:

In electronic email sent January 19, 2011 you responded to Nuclear Regulatory Commission letter dated January 7, 2011 regarding the submittal of decommissioning financial assurance in accordance with Title 10 of the Code of Federal Regulation, Part 30, Paragraph 35 (10 CFR 30.35). In the e-mail you attached a scientific paper describing the decommissioning of a self-shielded accelerator and a table of your financial assurance calculations based on isotopes presented in the scientific paper. You based your assumptions on the fact that the accelerator in the paper is similar to the one used at The Queen's Medical Center. In order to continue our review, we need the following additional information:

1. Please show a comparison of the workload between the cyclotron in the paper (CTI RDS112) and the Siemens model RDS-111 in units of $\mu\text{A h}^{-1} \text{wk}^{-1}$. If the workload is comparable then it can be assumed that you will have comparable results. Include a brief description of your calculations.
2. In the table provided to calculate financial assurance you used all the produced radionuclides described in the paper. However, the accelerator decommissioned in the paper also produced Carbon-11 using a gaseous target mixture. Please note it is possible that some of the activated products and measured activity were solely a result of this reaction and not of the F-18 production.
3. Please provide a brief description on the calculation of specific activities for the activated products on the table.
4. Please provide a brief description on the calculation used to determine the activities in microcurie quantities as specified on the table.
5. Please define the activated products you have labeled as "other" in the cyclotron shield and concrete floor table as either "Any alpha emitting radionuclide not in 10 CFR Part 30 Appendix B or mixtures of alpha emitters of unknown composition" OR "Any radionuclide other than alpha emitting radio-nuclides, not listed in 10 CFR Part 30 Appendix B or mixtures of beta emitters of unknown composition". It appears the table is referring to the later description.

6. You may forego addressing Items 1 through 5 if you provide a list of activated products directly from the Siemens manufacturer for your specific model RDS-111 and target. For example, you may provide the information if it is found in the operating manual, a specification sheet or directly from the manufacturer via letter head or email.

You must respond to this letter by February 24, 2011. You may send your response in a PDF format or by facsimile to 817-860-8263. If you have any questions, please do not hesitate to contact me at 817-276-6596.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Thank you for your cooperation.

Sincerely,

/RA/

Lizette Roldán-Otero, Ph.D., Health Physicist
Nuclear Materials Safety Branch B

Docket: 030-38244
License: 53-29377-03

Cc: Arthur Ushijima, President