

Health Physics Office
M.C. 20-00
100 N. Academy Ave.
Danville, PA 17822
570 271-7016 Tel
570 214-9248 Fax

Catherine M. Anderko
Director, System
Medical Health Physics

GEISINGER HEALTH SYSTEM

P-6

US Nuclear Regulatory Commission
Region I
Nuclear Material Section B
475 Allendale Road
King of Prussia, Pa. 19406

March 24, 2008

03002984

Licensee: Geisinger Health System, Danville, PA 17822-2900
License: #37-01421-01
Subject: Modification to the amendment request to add Ca-45/financial assurance requirement
Mail Control Number: 141978

Geisinger Health System is requesting a modification to the above referenced amendment request dated 2/15/2008. We are still requesting the addition of ⁴⁵Ca; however, at a lower activity than previously specified (we are requesting 8.8 mCi of ⁴⁵Ca; see Attachment #1a). We are also requesting a modification to lower the existing license limits for ³H and ¹⁴C (for ³H, we are requesting a decrease from 900 mCi to 100 mCi; for ¹⁴C, we are requesting a decrease from 10 mCi to 2 mCi). As noted in Attachment #2a, Geisinger Health System will not be required to obtain financial assurance requirements (per 10 CFR 30.35). Currently licensed quantities for ³H and ¹⁴C are well below the modified activities that are being requested. Please let us know if you require any additional information. We look forward to your prompt review of this request.

Sincerely,



Catherine Anderko
Director, System, Medical Health Physics
Radiation Safety Officer



Robert W. Davies
Vice President
Geisinger System Services

cc: Dr. Wannian Yang, Ph.D., Weis Center for Research
Cathy Beinlich, Ph.D., Weis Center for Research

Geisinger Health System
Danville, PA

Amendment Request 2/15/2008
License #: 37-01421-01

Attachment #1a

1. This application is for: Amendment to License Number: 37-01421-01

2. Name and mailing address of applicant:

Institution Name: Geisinger Health System
Street Address: 100 N. Academy Avenue
City, State & ZIP Code: Danville, PA 17822-2900

3. Address where licensed material will be used or possessed:

Street Address: 100 N. Academy Avenue, Danville Pa 17822-2900
Building: Wels Center for Research
Room: Lab 119

4. Name of person to be contacted about this application:

Name: Catherine M. Anderko
Telephone Number: (570) 271-7015

5. Radioactive Material:

A. Radionuclide: Ca-45
B. Half-life: 163 days
C. Form: Liquid, CaCl₂
D. Source Item #: NEZ013000MC
E. Max amount: 10 millicuries per year
F. License possession limit: 8.8 millicuries
G. RAM manufacturer: PerkinElmer Life and Analytical Sciences

6. Purpose(s) for which licensed material will be used:

Non-human experiments for calcium-binding assays of the HECT ubiquitin E3 ligases.

7. Individuals responsible for radiation safety and their training & experience:

Radiation Safety Officer (RSO): Catherine M. Anderko, M.S., CHP, DABR
Research Scientist(s): Wannlan Yang, PhD and Jian Wang, PhD

8. Training for individuals working in or frequenting restricted areas:

- The Geisinger health physics department provides general and annual radiation safety refresher training. Dr. Yang has taken the Research Radionuclide Safety Training on 9/3/2007. Dr. Wang has taken the Research Radionuclide Safety Training class on 11/16/2007.

9. Facilities and Equipment

- Facilities and equipment are already in place for research using beta emitting radionuclides of similar energy.

10. Radiation Safety Program

- Annual research radionuclide safety training by medical health physics.
- Standard operating procedure already in place for handling beta emitting radionuclides of similar energy.
- Will add a GM survey to supplement wipe test surveys.

Geisinger Health System
Danville, PA

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11. Waste Management

- Standard operating procedure already in place for handling liquid and solid waste resulting from research activities with beta emitting radionuclides of similar energy and half-lives > 120 days.

12. Authorized User Credentials

- Dr. Yang has been an authorized user in the Geisinger Health System since January 2003. He has been granted approval by the Radiation Safety Committee for use of phosphorus 32, iodine 125, hydrogen 3, sulfur 35 and carbon 14 for non-human research use. Recently, at the January 21, 2008 Radiation Safety Committee meeting, voting members approved Dr. Yang's request to add calcium 45 to his non-human use research protocol. This was voted on and approved unanimously.

Financial Assurance Requirement Worksheet

Nuclide w/ $T_{1/2} > 120$ days	(S)ealed or (U)nsealed	License Limit, Ci	App. B value, Ci	10^3 x App. B Value	10^4 x App. B Value	10^5 x App. B Value	10^{10} x App. B Value	Financial Assurance Required	DFP Required?
C-14	U	2.00E-03	1.00E-04	1.00E-01	1.00E+00	1.00E+01	-	NO	NO
H-3	U	1.00E-01	1.00E-03	1.00E+00	1.00E+01	1.00E+02	-	NO	NO
Ca-45	U	8.80E-03	1.00E-05	1.00E-02	1.00E-01	1.00E+00	-	NO	NO
Cs-137	S	1.5302E+03	1.00E-05	-	-	-	1.00E+05	NO	NO
Am-241	S	2.0E-03	1.00E-08	-	-	-	1.00E+02	NO	NO
Ba-133	S	6.00E+00	1.00E-05	-	-	-	1.00E+05	NO	NO
Cd-109	S	6.00E+00	1.00E-05	-	-	-	1.00E+05	NO	NO
Co-60	S	6.00E+00	1.00E-06	-	-	-	1.00E+04	NO	NO
Mn-54	S	6.00E+00	1.00E-05	-	-	-	1.00E+05	NO	NO
Sr-90	S	6.00E+00	1.20E-07	-	-	-	1.20E+03	NO	NO
Tl-204	S	6.00E+00	1.00E-05	-	-	-	1.00E+05	NO	NO
I-129	S	6.00E+00	1.00E-07	-	-	-	1.00E+03	NO	NO
Eu-152	S	6.00E+00	1.00E-06	-	-	-	1.00E+04	NO	NO
-	-	R	-	$R/10^3$	$R/10^4$	$R/10^5$	$R/10^{10}$	-	-
R-Values	U	1.00E+03	-	1.00E+00	1.00E-01	1.00E-02	N/A	NO	NO
R-Values	S	2.78E+08	-	N/A	N/A	N/A	2.78E-02	NO	NO

Reference: 10CFR30.35