

August 14, 2007

NMSB2

U.S. Nuclear Regulatory Commission
Region I
Nuclear Materials Safety Branch
475 Allendale Road
King of Prussia, PA 19406-1415

03033578

RE: Material License #24-04206-19MD (Pittsburgh, PA)

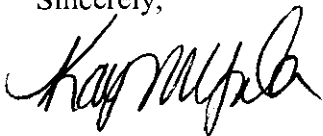
Dear License Reviewer:

Please amend the above reference material license to reflect the following modification:

1. Amend to name **Brian Thurston, Pharm.D.** as an Authorized Nuclear Pharmacist. Mr. Thurston has completed the necessary didactic and practical experience training in accordance with 10 CFR 35.980 (refer to attached documentation). In addition, the Pennsylvania Board of Pharmacy recognizes Mr. Thurston as a Registered Pharmacist.

All other items relating to our radioactive material license and established Radiation Safety Program remain unchanged at this time. Please contact April Chance, Manager, Radiological Affairs at (314) 654-7960 for further information regarding this matter. Your prompt review and approval of this license modification is greatly appreciated.

Sincerely,



Kay M. Yoder
Director, Radiation, Environment, Safety & Health – Mallinckrodt Inc.

Attachment

cc: M. Mezeivtch, Radiation Safety Officer (Pittsburgh, PA)
A. Chance, Manager, Radiological Affairs (Hazelwood, MO)

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RECEIVED
REGION 1

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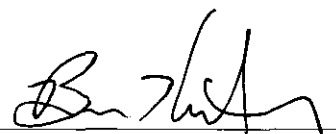
**ATTACHMENT
DOCUMENTATION FOR BRIAN THURSTON**

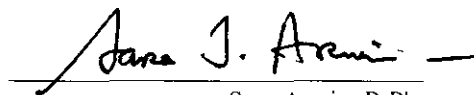
PRACTICAL TRAINING DOCUMENTATION


Hours of Radioactive Material Experience

Proposed Authorized Nuclear Pharmacist: Brian Thurston, Pharm.D.
 (August 21, 2006 – September 15, 2006; April 23, 2007 – August 6, 2007)

Week Dates	Location	Total Hours Worked
8/21/06 – 8/25/06	Cardinal Health NPS, Pittsburgh, Pa	40
8/28/06 – 9/1/06	Cardinal Health NPS, Pittsburgh, Pa	40
9/4/06 – 9/8/06	Cardinal Health NPS, Pittsburgh, Pa	40
9/11/06 – 9/15/06	Cardinal Health NPS, Pittsburgh, Pa	40
4/23/07 – 4/27/07	Mallinckrodt Inc, Loma Linda, Ca	40
5/1/07 – 5/5/07	Mallinckrodt Inc, Loma Linda, Ca	40
5/7/07 – 5/11/07	Mallinckrodt Inc, Loma Linda, Ca	40
5/14/07 – 5/18/07	Mallinckrodt Inc, Loma Linda, Ca	40
5/21/07 – 5/25/07	Mallinckrodt Inc, Loma Linda, Ca	40
5/28/07 – 6/1/07	Mallinckrodt Inc, Loma Linda, Ca	40
6/4/07 – 6/8/07	Mallinckrodt Inc, Loma Linda, Ca	40
6/11/07 – 6/15/07	Mallinckrodt Inc, Loma Linda, Ca	40
6/18/07 – 6/22/07	Mallinckrodt Inc, Loma Linda, Ca	40
6/25/07 – 6/29/07	Mallinckrodt Inc, Loma Linda, Ca	40
7/2/07 – 7/6/07	Mallinckrodt Inc, Loma Linda, Ca	32
7/9/07 – 8/3/07	Ohio State University	40
Total Hours		632


 Brian Thurston, Pharm.D.


 Sara Arwin, R.Ph.
 Radiation Safety Officer, PIC


 Rick Wride, R.Ph., BCNP, MBA
 Pharmacy Manager

Experience with radioisotopes for Brian Thurston:

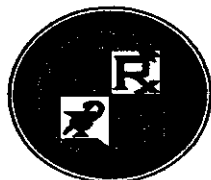
Duration of Experience	Isotope	Maximum Amount	Location	Type of Use
8/21/06 - 9/15/06; 04/23/07 - present	Tc-99m	10 Ci	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA; Mallinckrodt, Inc., Loma Linda, CA	Generator Elution, Mo assay, radiopharmaceutical kit preparation, dispensing of bulk vials of Tc-99m, dispensing of unit doses of prepared radiopharmaceutical kits, leukocyte labeling
8/21/06 - 9/15/06; 04/23/07 - present	In-111	10 mCi	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA; Mallinckrodt, Inc., Loma Linda, CA	Preparation of Radiopharmaceutical kits, dispensing of unit doses of prepared radiopharmaceutical kits, leukocyte labeling
8/21/06 - 9/15/06; 04/23/07 - present	I-123	3 mCi	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA; Mallinckrodt, Inc., Loma Linda, CA	Dispensing of prepared oral dosage forms (capsules)
8/21/06 - 9/15/06; 04/23/07 - present	I-131	200 mCi	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA; Mallinckrodt, Inc., Loma Linda, CA	Dispensing of prepared oral dosage forms (capsules and solutions)
8/21/06 - 9/15/06; 04/23/07 - present	Xe-133	20 mCi/vial	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA; Mallinckrodt, Inc., Loma Linda, CA	Dispensing of manufacturer's unit dose vials
8/21/06 - 9/15/06; 04/23/07 - present	Tl-201	24 mCi/vial	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA; Mallinckrodt, Inc., Loma Linda, CA	Dispensing of bulk vials and unit doses
8/21/06 - 9/15/06; 04/23/07 - present	Ga-67	22 mCi/vial	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA; Mallinckrodt, Inc., Loma Linda, CA	Dispensing of bulk vials and unit doses
8/21/06 - 9/15/06	Y-90	40 mCi	Cardinal Health Nuclear Pharmacy Services, Pittsburgh, PA	Preparation of Radiopharmaceutical kits, dispensing of unit doses of prepared radiopharmaceutical kits

Total Hours of Experience = 600 hours

Experience Documented and certified by:

Sara I. Arwin
 Sara I. Arwin, RPh.
 Radiation Safety Officer, PIC

08/06/07
 Date



THE OHIO STATE UNIVERSITY
COLLEGE OF PHARMACY
UNIVERSITY MEDICAL CENTER



NUCLEAR PHARMACY CERTIFICATE PROGRAM

RADIONUCLIDE HANDLING EXPERIENCE

Name: Brian Thurston

Date: August 3, 2007

Document the actual use/handling of radioactive material under the supervision of an Authorized Nuclear Pharmacist.

RADIONUCLIDE	RADIOACTIVITY	USE see below	EXPERIENCE Actual clock hours (Include date range of experience)	LOCATION
Mo-99	10 Curies	1,2,3,4,5,6,7	7/9/07	The Ohio State University Medical Center Columbus, OH
Tc-99m	8 Curies	1,2,3,4,5,6,7	through	
I-131	200 mCi	1,2,3,4,5,6	8/3/07	
I-123	1 mCi	1,2,3,4,5,6		
Ga-67	25 mCi	1,2,3,4,5		
Tl-201	50 mCi	1,2,3,4,5		
In-111	7.5 mCi	1,2,3,4		
Sr-89	5 mCi	1,2,3,4,5,6		
Sm-153	100 mCi	1,2,3,4,5,6		
F-18	200 mCi	1,2,3,4,5,6		
Cs-137	0.2 mCi	1,2,5		
			TOTAL HOURS: 40 hours	

Key for "Use": the number, or numbers, entered under "Use" should correspond to the handling experience for each radionuclide.

1. Ordering, shipping, receiving radioactive materials and performing related radiation surveys.
2. Calibrating, using and performing checks for proper operation of dose calibrators, scintillation detectors, survey meters, and, if applicable, instruments used to measure alpha- or beta-emitting radionuclides.
3. Calculating, assaying and safely preparing dosages for patients or human research subjects.
4. Using appropriate internal controls to avoid mistakes in the labeling and/or administration of by product material.
5. Using procedures to prevent or minimize contamination and using proper decontamination procedures.
6. Learning emergency procedures to handle and contain spilled materials safely, including related decontamination procedures, surveys and wipe tests.
7. Eluting Tc99m from generator systems, assaying the eluate for Tc99m and for Mo99 and processing the eluate with reagent kits to prepare Tc99m labeled radioactive drugs.

Authorized Nuclear Pharmacist:


George H. Hinkle, RPh, MS, BCNP

Date: August 3, 2007



**The Ohio State University
College of Pharmacy
and
University Medical Center
Department of Pharmacy**



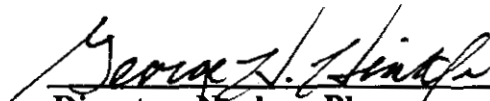
By this certificate warrants that

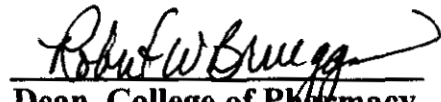
BRIAN THURSTON

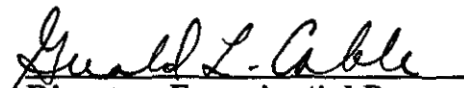
has satisfactorily fulfilled all requirements
and completed the prescribed course

Nuclear Pharmacy Certificate Program


August 3, 2007


Director, Nuclear Pharmacy
Associate Professor of Pharmacy


Dean, College of Pharmacy


Director, Experiential Programs
College of Pharmacy




Chair, Pharmacy Practice
and Administration



THE OHIO STATE UNIVERSITY
COLLEGE OF PHARMACY
UNIVERSITY MEDICAL CENTER

NUCLEAR PHARMACY CERTIFICATE PROGRAM

TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

Name: Brian Thurston

Location of Training	Dates of Attendance	Course Title	Total Clock Hours	BREAKDOWN OF COURSE CONTENT IN CLOCK HOURS				
				Radiation Physics & Instrumentation	Radiation Protection	Math Pertaining to Radioactivity	Radiation Biology	Radiopharmaceutical Chemistry
The Ohio State University, Columbus, OH	July 9, 2007 through August 3, 2007	Nuclear Pharmacy Certificate Program	214	88	45	20	22	39
*Note: Show a breakdown of hours by institution, dates, and subjects. List each hour only once (i.e., under the most applicable subject category) TOTAL HOURS			214	88	45	20	22	39

Authorized Nuclear Pharmacist/Authorized User: George H. Hinkle
George H. Hinkle, RPh, MS, BCNP, FASHP, FAPhA

DATE: August 3, 2007



Pennsylvania Department of State Bureau of Professional and Occupational Affairs



License Verification

Person Information

Name: BRIAN D THURSTON

Address(city,state zipcode): Redlands CA 92373

Employer Information

No Information Found

License Information

Type: Pharmacist

Secondary Type: N/A

Number: RP441624

Profession: Pharmacy

Status: Active

Obtained By: Examination

Issue Date: 2/13/2007

Expires: 9/30/2008

Last Renewed: N/A

Standing: This license is in good standing.

Disciplinary action history: No disciplinary actions were found for this license.

[Return to Licensee Search](#) | [Back to Results](#)

This is to acknowledge the receipt of your letter/application dated

8/14/2007, and to inform you that the initial processing which includes an administrative review has been performed.

ATTEND. 24-04206-19MD
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 140946.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.