

## PROVIDENCE HOSPITAL

November 17, 2017

UNITES STATES NUCLEAR REGULATORY COMMISSION  
Region III, Materials Licensing Section  
2443 Warrenville Road, Suite 210  
Lisle, IL 60532-4352

Re: Amendment to License No. 21-02802-03

1. Please remove John F. K. Brown, M.D. as the Radiation Safety Officer and Authorized User for 35.100, 35.200 and 35.300 on this license.
2. Please add Vikram Aroor Kinni, M.D. as the Radiation Safety Officer. Please find the enclosed NRC 313A(RSO) form and RSO Agreement letter for your review.

Thank you for your cooperation with this matter. If you have any question please contact our physicist, Michelle Kritzman, at (734) 662-3197 or by email at [mkritzman@mpcphysics.com](mailto:mkritzman@mpcphysics.com)

Sincerely,



Lou Bischoff, MBA, MHA, CRA  
Director, Imaging Services  
Providence Hospital  
Southfield, Michigan

RECEIVED DEC 05 2017

RSO / EXECUTIVE MANAGEMENT  
LETTER OF UNDERSTANDING

November 16, 2017

Vikram Aroor Kinni, MD  
Radiation Safety Officer  
16001 W. Nine Mile Road  
Southfield, MI 48037Re: Radiation Safety Officer / Executive Management  
Letter of Understanding

Dear Dr. Kinni,

You have been appointed the Radiation Safety Officer (RSO) of this facility for our United States Nuclear Regulatory Commission Materials License. This "Letter of Understanding" is prepared to comply with Title 10 Code of Federal Regulations (CFR) Part 35.24(b). This section of the regulations requires that you agree in writing to the following:

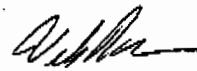
- Assume responsibility for implementing the Radiation Protection Program
- Ensure that radiation safety activities are being performed in accordance with our own approved procedures and all regulatory requirements.

Furthermore, in compliance with 10 CFR 35.24(e),(g), the executive management of this facility agrees to provide you as RSO:

- Specific written notation of your authority, duties and responsibilities, see attached.
- Sufficient authority, organizational freedom, time, resources and management prerogative to:
  1. Identify radiation safety problems;
  2. Initiate, recommend, or provide corrective actions;
  3. Stop unsafe operations; and,
  4. Verify implementation of corrective actions.

Our signatures noted below will attest to the issues noted above. Please make a copy of this document for your files and return the original to my attention.

Sincerely,

  
\_\_\_\_\_  
Lou Bischoff, MBA, MHA, CRA  
Director, Imaging Services  
\_\_\_\_\_  
Vikram Aroor Kinni, M.D.  
Radiation Safety Officer

NRC FORM 313A (R50) <small>(08-2218)</small>	U.S. NUCLEAR REGULATORY COMMISSION <b>RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION</b> <b>[10 CFR 35.50]</b>	APPROVED BY OMB: NO. 3150-0120 EXPIRES: 08/30/2019																													
Name of Proposed Radiation Safety Officer Vikram Arora Kinnal, MD																															
Requested Authorization(s) The license authorizes the following medical uses (check all that apply): <input checked="" type="checkbox"/> 35.100 <input checked="" type="checkbox"/> 35.200 <input checked="" type="checkbox"/> 35.300 <input checked="" type="checkbox"/> 35.400 <input type="checkbox"/> 35.500 <input type="checkbox"/> 35.600 (remote afterloader) <input type="checkbox"/> 35.800 (teletherapy) <input type="checkbox"/> 35.600 (gamma stereotactic radiosurgery) <input checked="" type="checkbox"/> 35.1000 ( _____ )																															
<b>PART I. TRAINING AND EXPERIENCE</b> (Select one of the four methods below)																															
*Training and Experience, including board certification, must have been obtained within the 7 years preceding the date of application or the individual must have obtained related continuing education and experience since the required training and experience was completed. Provide dates, duration, and description of continuing education and experience related to the uses checked above.																															
<input type="checkbox"/> 1. <u>Board Certification</u> a. Provide a copy of the board certification. b. Use Table 3.c. to describe training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license. c. Skip to and complete Part II Preceptor Attestation.																															
OR																															
<input type="checkbox"/> 2. <u>Current Radiation Safety Officer Seeking Authorization to Be Recognized as a Radiation Safety Officer for the Additional Medical Uses Checked Above</u> a. Use the table in section 3.c. to describe training in radiation safety, regulatory issues, and emergency procedures for the additional types of medical use for which recognition as RSO is sought. b. Skip to and complete Part II Preceptor Attestation.																															
OR																															
<input type="checkbox"/> 3. <u>Structured Educational Program for Proposed Radiation Safety Officer</u> a. Classroom and Laboratory Training																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Description of Training</th> <th style="width: 35%;">Location of Training</th> <th style="width: 15%;">Clock Hours</th> <th style="width: 15%;">Dates of Training*</th> </tr> </thead> <tbody> <tr> <td>Radiation physics and instrumentation</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Radiation protection</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mathematics pertaining to the use and measurement of radioactivity</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Radiation biology</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Radiation dosimetry</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;">Total Hours of Training: <span style="border: 1px solid black; display: inline-block; width: 50px; height: 15px; vertical-align: middle;"></span></td> </tr> </tbody> </table>				Description of Training	Location of Training	Clock Hours	Dates of Training*	Radiation physics and instrumentation				Radiation protection				Mathematics pertaining to the use and measurement of radioactivity				Radiation biology				Radiation dosimetry				Total Hours of Training: <span style="border: 1px solid black; display: inline-block; width: 50px; height: 15px; vertical-align: middle;"></span>			
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NRC FORM 313A (RSC)  
(09-2016)

U.S. NUCLEAR REGULATORY COMMISSION

## RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)

## 3. Structured Educational Program for Proposed Radiation Safety Officer (continued)

## b. Supervised Radiation Safety Experience

(If more than one supervising individual is necessary to document supervised work experience, provide multiple copies of this section.)

Description of Experience	Location of Training/ License or Permit Number of Facility	Dates of Training*
Shipping, receiving, and performing related radiation surveys		
Using and performing checks for proper operation of instruments used to determine the activity of dosages, survey meters, and instruments used to measure radionuclides		
Securing and controlling byproduct material		
Using administrative controls to avoid mistakes in administration of byproduct material		
Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures		
Using emergency procedures to control byproduct material		
Disposing of byproduct material		
Licensed Material Used (e.g., 35.100, 35.200, etc.)+ <div style="border: 1px solid black; height: 40px; width: 250px; margin-top: 5px;"></div>		

\* Choose all applicable sections of 10 CFR Part 35 to describe radionuclides and quantities used: 35.100, 35.200, 35.300, 35.400, 35.500, 35.600 remote afterloader units, 35.600 teletherapy units, 35.600 gamma stereotactic radiosurgery units, emerging technologies (provide list of devices).

NRC FORM 313A (R30) (03-2016)		U.S. NUCLEAR REGULATORY COMMISSION
<b>RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)</b>		
<b>3. Structured Educational Program for Proposed Radiation Safety Officer (continued)</b>		
<b>b. Supervised Radiation Safety Experience (continued)</b>		
<i>(If more than one supervising individual is necessary to document supervised work experience, provide multiple copies of this section.)</i>		
Supervising Individual	License/Permit Number listing supervising individual as a Radiation Safety Officer	
This license authorizes the following medical uses:		
<input type="checkbox"/> 35.100	<input type="checkbox"/> 35.200	<input type="checkbox"/> 35.300
<input type="checkbox"/> 35.400	<input type="checkbox"/> 35.500	<input type="checkbox"/> 35.600 (remote afterloader)
<input type="checkbox"/> 35.600 (gamma stereotactic radiosurgery)	<input type="checkbox"/> 35.600 (teletherapy)	<input type="checkbox"/> 35.1000 ( )
<b>c. Describe training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license.</b>		
Description of Training	Training Provided By	Dates of Training*
Radiation safety, regulatory issues, and emergency procedures for 35.100, 35.200, and 35.500 uses	John Brown, MD RSO Providence Hospital Southfield, MI	10-3-2017
Radiation safety, regulatory issues, and emergency procedures for 35.300 uses	John Brown, MD RSO Providence Hospital Southfield, MI	10-3-2017
Radiation safety, regulatory issues, and emergency procedures for 35.400 uses	Vijaya Narayana, Ph.D. Providence Hospital Southfield, MI	24 Oct 17
Radiation safety, regulatory issues, and emergency procedures for 35.600 - teletherapy uses		
Radiation safety, regulatory issues, and emergency procedures for 35.600 - remote afterloader uses		
Radiation safety, regulatory issues, and emergency procedures for 35.600 - gamma stereotactic radiosurgery uses		
Radiation safety, regulatory issues, and emergency procedures for 35.1000, specify use(s):	Vijaya Narayana, Ph.D. Providence Hospital Southfield, MI	24 Oct 17

NRC FORM 313A (R30)  
(05-2016)

U.S. NUCLEAR REGULATORY COMMISSION

## RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)

3. Structured Educational Program for Proposed Radiation Safety Officer (continued)

- c. Training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license (continued)

Supervising Individual *If training was provided by supervising RSO, AU, AMP, or ANP. (If more than one supervising individual is necessary to document supervised training, provide multiple copies of this page.)*

John F.K. Brown, M.D.

License/Permit Number listing supervising individual

21-04072-01

License/Permit lists supervising individual as:

- ☒ Radiation Safety Officer    ☐ Authorized User    ☐ Authorized Nuclear Pharmacist  
☐ Authorized Medical Physicist

Authorized as RSO, AU, ANP, or AMP for the following medical uses:

- ☒ 35.100    ☒ 35.200    ☒ 35.300    ☒ 35.400  
☐ 35.500    ☐ 35.600 (remote afterloader)    ☐ 35.600 (teletherapy)  
☐ 35.800 (gamma stereotactic radiosurgery)    ☒ 36.1000 ( )

- d. Skip to and complete Part II Preceptor Attestation.

OR

☒ 4. Authorized User, Authorized Medical Physicist, or Authorized Nuclear Pharmacist identified on the licensee's license

- a. Provide license number.  
b. Use the table in section 3.c. to describe training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license.  
c. Skip to and complete Part II Preceptor Attestation.

## PART II - PRECEPTOR ATTESTATION

Note: This part must be completed by the individual's preceptor. The preceptor does not have to be the supervising individual as long as the preceptor provides, directs, or verifies training and experience required. If more than one preceptor is necessary to document experience, obtain a separate preceptor statement from each.

## First Section

Check one of the following:

☐ 1. Board Certification☐ I attest that \_\_\_\_\_ has satisfactorily completed the requirements in

Name of Proposed Radiation Safety Officer

10 CFR 35.50(a)(1)(i) and (a)(1)(ii); or 35.50 (a)(2)(i) and (a)(2)(ii); or 35.50(c)(1).

OR

☐ 2. Structured Educational Program for Proposed Radiation Safety Officers☐ I attest that \_\_\_\_\_ has satisfactorily completed a structural educational

Name of Proposed Radiation Safety Officer

program consisting of both 200 hours of classroom and laboratory training and one year of full-time radiation safety experience as required by 10 CFR 35.50(b)(1).

OR

**RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)**

### 3. Structured Educational Program for Proposed Radiation Safety Officer (continued)

c. Training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license (continued)

<b>Supervising Individual</b> <i>If training was provided by supervising RSO, AU, AMP, or ANP. (If more than one supervising individual is necessary to document supervised training, provide multiple copies of this page.)</i> Vrinda Narayana, PhD	<b>License/Permit Number listing supervising individual</b> 21-26632-01
--	--

**License/Permit lists supervising individual as:**

☐ Radiation Safety Officer    
 ☐ Authorized User    
 ☐ Authorized Nuclear Pharmacist  
☒ Authorized Medical Physicist

**Authorized as RSO, AU, ANP, or AMP for the following medical uses:**

<input type="checkbox"/> 35.100	<input type="checkbox"/> 35.200	<input type="checkbox"/> 35.300	<input type="checkbox"/> 35.400
<input type="checkbox"/> 35.500	<input checked="" type="checkbox"/> 35.600 (remote afterloader)	<input type="checkbox"/> 35.600 (teletherapy)	
<input type="checkbox"/> 35.600 (gamma stereotactic radiosurgery)	<input type="checkbox"/> 35.1000 ( _____ )		

**d. Skip to and complete Part II Preceptor Attestation.**

**OR**

☐ 4. Authorized User, Authorized Medical Physicist, or Authorized Nuclear Pharmacist identified on the licensee's license

a. Provide license number.

b. Use the table in section 3.c. to describe training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license.

**c. Skip to and complete Part II Preceptor Attestation.**

## PART II – PRECEPTOR ATTESTATION

**Note:** This part must be completed by the individual's preceptor. The preceptor does not have to be the supervising individual as long as the preceptor provides, directs, or verifies training and experience required. If more than one preceptor is necessary to document experience, obtain a separate preceptor statement from each.

### First Section

**Check one of the following:**

## ☐ 1. Board Certification

☐ I attest that \_\_\_\_\_ has satisfactorily completed the requirements in \_\_\_\_\_  
Name of Proposed Radiation Safety Officer

10 CFR 35.50(a)(1)(i) and (a)(1)(ii); or 35.50 (a)(2)(i) and (a)(2)(ii); or 35.50(c)(1).

**OR**

☐ **2. Structured Educational Program for Proposed Radiation Safety Officers**

☐ I attest that \_\_\_\_\_ has satisfactorily completed a structural educational  
Name of Proposed Radiation Safety Officer

program consisting of both 200 hours of classroom and laboratory training and one year of full-time radiation safety experience as required by 10 CFR 35.50(b)(1).

**OR**

NRC FORM 312A (R50) (2-7-95)	U.S. NUCLEAR REGULATORY COMMISSION
<b>RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)</b>	
<b>Preceptor Attestation (continued)</b>	
<b>First Section (continued)</b> Check one of the following:	
<input checked="" type="checkbox"/> <b>3. Additional Authorization as Radiation Safety Officer</b>	
<input checked="" type="checkbox"/> I attest that <u>Vikram Arora Kinni, MD</u> is an <small>Name of Proposed Radiation Safety Officer</small>	
<input checked="" type="checkbox"/> Authorized User	
<input type="checkbox"/> Authorized Nuclear Pharmacist	
<input type="checkbox"/> Authorized Medical Physicist	
identified on the Licensee's license and has experience with the radiation safety aspects of similar type of use of byproduct material for which the individual has Radiation Safety Officer responsibilities.	
<b>AND</b>	
<b>Second Section</b> Complete for all (check all that apply):	
<input checked="" type="checkbox"/> I attest that <u>Vikram Arora Kinni, MD</u> has training in the radiation safety, regulatory issues, and <small>Name of Proposed Radiation Safety Officer</small>	
emergency procedures for the following types of use:	
<input checked="" type="checkbox"/> 35.100	
<input checked="" type="checkbox"/> 35.200	
<input checked="" type="checkbox"/> 35.300 oral administration of less than or equal to 33 millicuries of sodium iodide I-131, for which a written directive is required	
<input checked="" type="checkbox"/> 35.300 oral administration of greater than 33 millicuries of sodium iodide I-131	
<input checked="" type="checkbox"/> 35.300 parenteral administration of any beta-emitter, or a photon-emitting radionuclide with a photon energy less than 150 keV for which a written directive is required	
<input checked="" type="checkbox"/> 35.300 parenteral administration of any other radionuclide for which a written directive is required	
<input checked="" type="checkbox"/> 35.400	
<input type="checkbox"/> 35.500	
<input type="checkbox"/> 35.600 remote afterloader units	
<input type="checkbox"/> 35.600 teletherapy units	
<input type="checkbox"/> 35.600 gamma stereotactic radiosurgery units	
<input checked="" type="checkbox"/> 35.1000 emerging technologies, including:	
<u>Yttrium-90 for TheraSphere dose delivery system</u>	



NRG FORM 313A (RSO)  
(05-2016)

U.S. NUCLEAR REGULATORY COMMISSION

## RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)

AND

Third Section  
Complete for ALL

☒ I attest that Vikram Aroor Kinnl, MD has achieved a level of radiation safety knowledge  
Name of Proposed Radiation Safety Officer  
sufficient to function independently as a Radiation Safety Officer for a medical use licensee.

Fourth Section  
Complete the following for Preceptor Attestation and signature

I am the Radiation Safety Officer for Providence Hospital  
Name of Facility

License/Permit Number: 21-02802-03

Name of Preceptor

John F.K. Brown, M.D.

Signature

Telephone Number

Date

248 308-7745

10-31-17

NRG FORM 313A (RSO) (05-2016)

PAGE 5

**RADIATION SAFETY OFFICER  
AUTHORITY, DUTIES AND RESPONSIBILITIES**

The Radiation Safety Officer (RSO) shall:

1. Have the authority to implement the Radiation Protection Program as referenced in 10 CFR 20.1101.
2. Have the authority, organizational freedom, time, resources, and management prerogative to:
  - a. Identify radiation safety problems;
  - b. Initiate, recommend or provide corrective actions,
  - c. Stop unsafe operations; and,
  - d. Verify implementation of corrective actions.
3. Investigate deviations from the radiation safety practices approved by facility management and/or the Radiation Safety Committee, if applicable.
4. Collect in a centralized location, executive management approved procedures that can include policy and technical issues which, would makeup the Radiation Protection Program as follows:
  - a. Authorization for the purchase of radioactive material.
  - b. Receipt and opening of packages containing radioactive material.
  - c. Storage of radioactive material.
  - d. Inventory control of radioactive material.
  - e. Safe use of radioactive material.
  - f. Emergency procedures in the event of loss, theft, etc.
  - g. Periodic radiation surveys and wipe tests
  - h. Checks of radiation survey and other radiation safety instruments.
  - i. Disposal of radioactive material.
  - j. Personnel training of those who work in or frequent areas of radioactive material use or storage.
5. Oversee a record system of the Radiation Protection Program per 10 CFR 20.2102 to include at least the following:

The provisions of the Radiation Protection Program until the license is terminated by the NRC such as:

- a. All records, reports, written policies and procedures required by regulatory agencies concerning radioactive material.
- b. A copy of the regulations governing the possession, use and disposal of licensed material, such as Title 10 Code of Federal Regulations.

## RSO Authority, Duties &amp; Responsibilities

2

Audits and other reviews of the Radiation Protection Program content and implementation for a period of three (3) years after the record is made.

6. Periodically evaluate "action levels" for continued appropriateness to ensure compliance with 10 CFR 20.1501 and 1502 for the following:
  - a. Personnel exposure investigation levels
  - b. Area surveys dose rate and contamination levels
  - c. Bioassays, if necessary
  - d. Radioactive effluent concentrations, if necessary
7. Review the following Radiation Protection Program records, if applicable:
  - a. Sealed source inventories
  - b. Sealed source leak tests
  - c. Dose calibrator linearity tests
  - d. Dose calibrator accuracy tests
  - e. Dose calibrator geometrical variation tests
  - f. Occupational radiation exposure reports
  - g. Medical event documentation
  - h. Spill / incident reports for cause and corrective action
  - i. Dose rate and contamination survey results
  - j. Changes in the radiation safety program
8. Ensure the use of reasonable practices and controls to strive to maintain doses to workers and to the public are ALARA, in compliance with 10 CFR 20.1101(b).
9. Review with facility management at least annually of the content of the Radiation Protection Program and determine if the written program is being implemented in compliance with 10 CFR 20.1101(c).
10. Ensure as a part of the ALARA effort that individual members of the public shall not receive a Total Effective Dose Equivalent (TEDE) of more than 10 mrem (0.1 mSv) per year from airborne radioactive material releases as per 10 CFR 20.1101(d) as necessary.
11. Be a member of the Radiation Safety Committee (RSC), if applicable, that will oversee all uses of byproduct material permitted by the license as per 10 CFR 35.24(f).

**F A X**

PROVIDENCE HOSPITAL  
DIAGNOSTIC IMAGING DEPT.  
16001 W. NINE MILE RD  
SOUTHFIELD, MI 48075



To: NRC

Fax number: 630-515-1078

From: Providence Southfield

Fax number: NURMED  
248-849-8511

Date: 12-5-17

Regarding: Material Licensing

Phone number for follow-up:

## Comments:

Attn: Material  
Licensing

The information contained in the facsimile message may be privileged, confidential, and protected information, intended for the use of the addressee listed above. DO NOT PERMIT ACCESS BY ANY OTHER PERSON. If you are neither the intended recipient or the employee or the agent responsible for delivering this information to the intended recipient, please telephone us immediately, and mail all pages of this transmission to us at the address on this form. You are hereby notified that any disclosure, copying, distribution or taking of any action in reliance on the content of the telecopied information is strictly prohibited.