

Greenwich Hospital

5 Perryridge Road
Greenwich, CT 06830-4608

Date: 3/19/2020

U.S. Nuclear Regulatory Commission
Region 1
2100 Renaissance Blvd. Suite 100
King of Prussia, PA 19406-2713

RE: License No.: 06-09522-01

Dear Sir or Madam:

We are requesting the addition of a temporary mobile PET/CT trailer that will be located on a pad at our 5 Perryridge Road facility in Greenwich, CT. The mobile unit will be used for several months during our renovation of our in house unit. The trailer will include a PET/CT unit and a hot lab please reference enclosure 1.

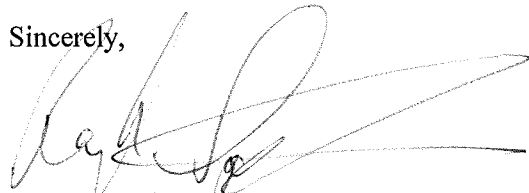
The hot lab will contain the following:

A table top shield
Shielded waste container
Dose calibrator Capintec CRC 15R or equivalent
Capintec Caprac R or equivalent
137 Cs dose calibrator source of approximately 200 uCi.
57 Co dose calibrator source of approximately 5 mCi
137 Cs rod source of approximately 0.5 uCi
68 Ge rod source of approximately 1.5 mCi

The nuclear medicine staff of Greenwich Hospital will operate the PET/CT unit as well as perform the radiation safety duties as previously described in our license.

If you have any additional questions please contact me at (203)863-3063 or
Ralph.sgambato@greenwichhospital.org

Sincerely,



Ralph Sgambato
Program Director of Radiology and Diagnostic Imaging

Enc (1)

Date: February 7, 2020

**Alliance Imaging
Mobile Van #54**

Annual Exposure Assessment For Exposures Received to "Members of the General Public"

The annual exposure evaluation was completed through a series of ambient exposure surveys, inverse square calculations and estimated occupancy times. Following this examination, it was concluded the annual exposure limit of 100 mrem had not been exceeded by this licensee. Please refer to the following for details:

Patient Injected Activity @ Time of Survey = 13.0 mCi F-18

Ambient Exposure Surveys completed with Victoreen, Model 451B Ion Chamber

Orange cones are placed at 2 meters around the mobile van to establish a security border.

Members of the General Public are required to maintain a minimum distance of 2 meters from the mobile van.

Survey Location(s)

<u>Location</u>		<u>Ambient Exposure Reading</u>
1.	6 inches from PET Patient (PET Resting Chair)	20.20 mR/hr
2.	1 meter from PET Patient (PET Resting Chair)	4.82 mR/hr
3.	1 meter from PET Patient (PET Resting Chair)	4.82 mR/hr
4.	1 meter from PET Patient (PET Resting Chair)	4.80 mR/hr
5.	1.5 meters from PET Patient (Imaging Table)	2.27 mR/hr
6.	1.5 meters from PET Patient (Imaging Table)	2.25 mR/hr
7.	1.5 meters from PET Patient (Imaging Table)	2.30 mR/hr
8.	1.0 meter from Outside Wall of PET Van, South Side (PET Resting Chair)	0.51 mR/hr
9.	2.0 meters from Outside Wall of PET Van, South Side (PET Resting Chair)	0.25 mR/hr
10.	1.0 meter from Outside Wall of PET Van, East Side (PET Resting Chair)	0.44 mR/hr
11.	2.0 meters from Outside Wall of PET Van, East Side (PET Resting Chair)	0.14 mR/hr
12.	1.0 meter from Outside Wall of PET Van, North Side (PET Resting Chair)	0.20 mR/hr
13.	2.0 meters from Outside Wall of PET Van, North Side (PET Resting Chair)	0.11 mR/hr
14.	1.0 meter from Outside Wall of PET Van, North Side (Imaging Room)	0.22 mR/hr
15.	2.0 meters from Outside Wall of PET Van, North Side (Imaging Room)	0.09 mR/hr
16.	1.0 meter from Outside Wall of PET Van, West Side (Imaging Room)	0.14 mR/hr
17.	2.0 meters from Outside Wall of PET Van, West Side (Imaging Room)	0.03 mR/hr
18.	1.0 meter from Outside Wall of PET Van, South Side (Imaging Room)	0.18 mR/hr
19.	2.0 meters from Outside Wall of PET Van, South Side (Imaging Room)	0.06 mR/hr

Assumptions:

1. Member of the General Public - Standing Outside the Mobile Van @ approximately 2 meters from the van and a Maximum Occupancy of 3.00 hours/year).
2. Distance From Radioactive Patient to Members of the General Public (2.00 meters(6.00 ft). Ambient exposure dose rate from exposure emitted from the radioactive patient @ an average of 6.00 ft = 0.25 mR/hr. Patient exposure @ 6 inches = 20.20 mR/hr - PET Patient lying in recliner in the PET quiet area of the mobile van.
3. Van Operating with PET patients and radioactive materials approximately 260 days/year. Hours of Operation: 8 hours/day.
4. Ambient exposure dose rates measured utilizing a Victoreen 451B Ion Chamber.

Calculations:

Maximum External Exposure received by a Member of the General Public, standing two 2 meters 6.0 ft (Area of Maximum Exposure) from outside of the exterior wall of the mobile van for 3 hours/year.

$$(0.250\text{mR/hr})(3.0\text{ hrs/year})= 0.75\text{ mrem/year (PET Patient Exposure)}$$

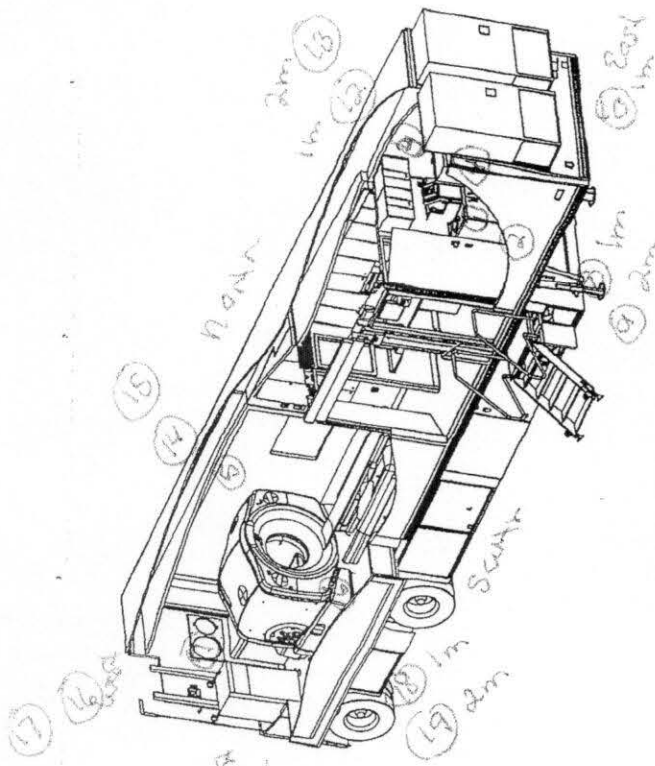
Exposure Received by a "Member of General Public" sitting 1.0 meter (3 ft) from the PET Patient resting in the PET Quiet Room, for a maximum period of 3.0 hours.

$$(4.80\text{ mR/hr})(3\text{ hrs/year}) = 14.40\text{ mrem/year}$$

Based on this analysis, a "Member of the General Public" would not exceed 100 mrem/year.

Yearly analysis completed by Michael W. Lairmoe, M.S.

A hand-drawn floor plan of a vehicle interior, oriented vertically. The drawing includes several numbered circles (1-17) indicating specific areas or components. Key labels include "E-STOP BEHIND MONITOR" pointing to a location near the rear, "CONSOLE" in the central area, "CPU" near the front right, "E-STOP" near the front left, "ESCAPE HATCH" near the front left, "REAR DOOR" at the top, and "FRONT DOOR" at the bottom. Dimensions are noted along the sides: "2m" on the left, "192m" and "48-0" on the right, and "134.716" at the top. A note "North" is written on the left side, and "South" is written on the right side. Other handwritten notes include "2m" at the top, "1m" near the front left, and "2m" near the front right. The drawing shows a detailed layout of seats, control panels, and structural elements.

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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