



October 31, 2012

Bryan Parker
U.S. Nuclear Regulatory Commission, Region III
Materials Licensing Branch
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4351

License No. 21-32816-01 - Request for Additional Information – Mail Control Number 579287

Bryan,

Following up from our phone conversation this morning, I am attaching 3 slides that were prepared by a colleague at Molecular Imaging prior to filing our current license amendment request. I believe the additional information you requested is adequately addressed in his slides.

Please contact me at (743) 260-7431 if you require any additional information.

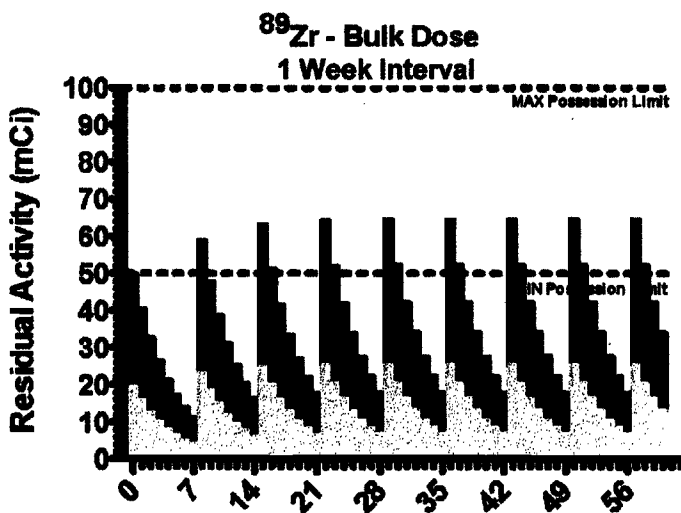
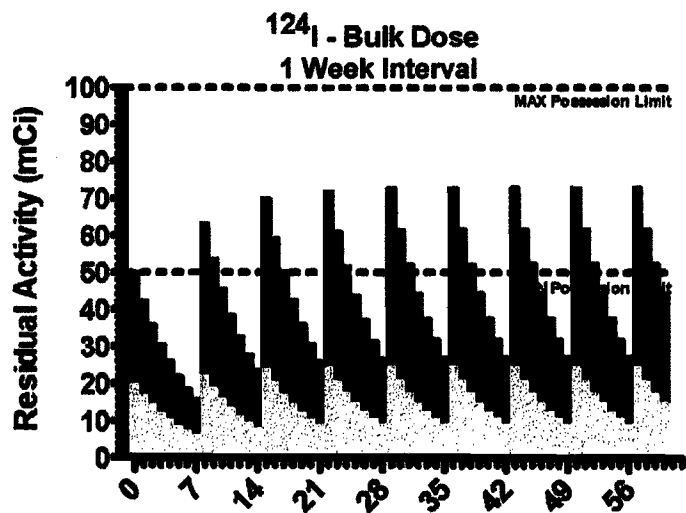
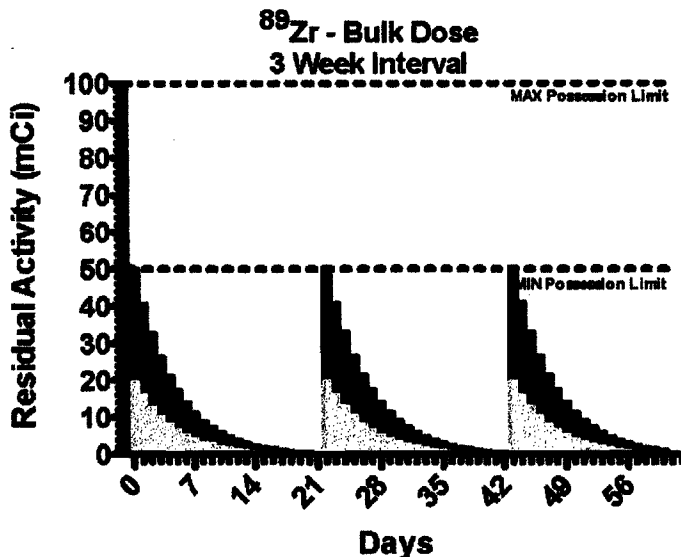
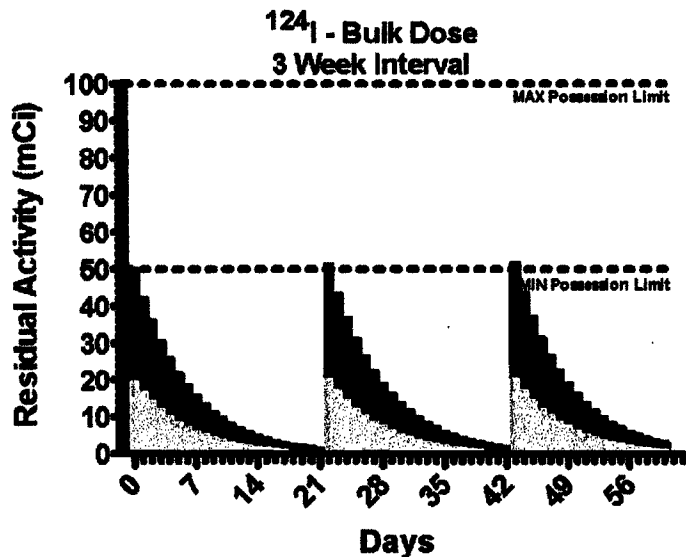
Sincerely,

Carol W. Lentz
Radiation Safety Officer
Molecular Imaging, Inc.

NRC Amendment Questions

- Description of the storage area for solid waste and carcasses for I-124 and Zr-89
- Expected average isotope per study (day): 20mCi (mice) - 50mCi (rats)
- Dose per animal (Zr-89 and I-124)
 - Mice: 0.2 mCi/animal
 - Rats: 0.5mCi/animal
- Number of studies per month
 - Short term: 1 per isotope
 - Long term: 4 per isotope

NRC Amendment Questions



Attenuation Calculations

F-18

I-124

Thickness	Half Layers	Attenuation	Thickness	Half Layers	Attenuation
2 inch	10.26	99.92%	7.06	99.2%	
1 inch	5.13	97.1%	3.53	91.3%	
0.5 inch	2.57	83.1%	1.76	70.6%	
0.25 inch	1.28	58.9%	0.88	45.7%	
	0.81	42.9%	0.56	32.0%	

1 INCH = 3.53 * 11 = 91.3% 11

Cu-64

Y-86

Thickness	Half Layers	Attenuation	Thickness	Half Layers	Attenuation
2 inch	9.94	99.90%	4.58	95.81%	
1 inch	4.97	96.3%	2.29	89.9%	
0.5 inch	2.49	82.1%	1.14	54.8%	
0.25 inch	1.24	57.7%	0.57	32.7%	
	0.78	41.9%	0.36	22.1%	

Co-55

Zr-89

Thickness	Half Layers	Attenuation	Thickness	Half Layers	Attenuation
2 inch	6.30	98.73%	5.63	97.98%	
1 inch	3.15	88.7%	2.82	85.8%	
0.5 inch	1.58	66.5%	1.41	62.3%	
0.25 inch	0.79	42.1%	0.70	38.6%	
	0.50	29.1%	0.44	26.5%	

1 INCH = 2.82 * 11 = 85.8% 11