

Mid-America Isotopes, Inc.
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Ashland, MO 65010
573.657.1776

April 21, 2024

U.S. Nuclear Regulatory Commission, Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352
Attn: Materials Licensing Branch

Subject: Amendment request for license 24-26241-01MD

Dear Sir or Madam,

I am requesting an amendment to license 24-26241-01MD to allow for the following change:

Air Sampling for I-131 radioiodine air monitoring shall be performed at a frequency of once per week. The spreadsheet used for radioiodine air monitoring is represented on page 31.5 of our license renewal application dated 12/27/2020 and approved on 06/25/21 as Amendment 23. Air sampling is currently performed within 24 hours of I-131 manipulation. Enclosed is a copy of page 31.5 "Worksheet for radioiodine air monitoring." Effluents are ALARA and within the dose limits of 10 CFR.1301 and are within the constraint for air emissions established under 10 CFR 20.1101(d).

If you have any questions, please call me at 573.657.1776

Respectively,



Jon Woodward, R.Ph. RSO
Authorized Nuclear Pharmacist and Radiation Safety Officer.

enclosures

RECEIVED MAY 07 2024

WORKSHEET FOR RADIOIODINE AIR MONITORING

INSTRUMENT: LUDLUM 2200/203 SERIAL #S 74459/PR069500

WELL COUNTER SETTING: 275 KeV TO 425 KeV (RANGE OF 150KeV)

A. uCi OF IODINE IN FILTER:

NET SAMPLE COUNT (CPM) X ((uCi OF BA-133 STD / NET BA-133 STD COUNT (CPM) X 1.00))

1) RESTRICTED FILTER

$$22.00 \text{ CPM} \times 0.01633 \text{ uCi} / (9353.00 \text{ CPM} \times 1.00) = 3.84\text{E-}05 \text{ uCi}$$

2) UNRESTRICTED FILTER

$$17.00 \text{ CPM} \times 0.01633 \text{ uCi} / (9353.00 \text{ CPM} \times 1.00) = 2.97\text{E-}05 \text{ uCi}$$

B. AIR FLOW THROUGH SAMPLING PUMP:

$$\text{MEASURED PUMP FLOW (ML/MIN)} \times \text{PUMP DURATION (MIN)} = 5000.00 \text{ ML/MIN} \times 4260.00 \text{ MIN} = 2.13\text{E+}07 \text{ ML}$$

C. CONCENTRATION OF IODINE IN AIR:

1) RESTRICTED AIR FILTER:

$$\frac{3.84\text{E-}05 \text{ uCi (A.1)}}{2.13\text{E+}07 \text{ ML (B)}} = 1.80\text{E-}12 \text{ uCi/ML}$$

RESTRICTED AIR FILTER ACTION LEVEL = 2.00E-08 uCi/ML

PERCENT OF ACTION LEVEL : 0.0090%

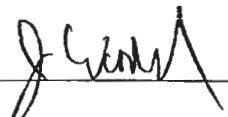
2) UNRESTRICTED AIR FILTER:

$$\frac{2.97\text{E-}05 \text{ uCi (A.2)}}{2.13\text{E+}07 \text{ ML (B)}} = 1.39\text{E-}12 \text{ uCi/ML}$$

UNRESTRICTED AIR FILTER ACTION LEVEL = 2.00E-10 uCi/ML

PERCENT OF ACTION LEVEL: 0.6968%

REVIEWED BY RADIATION SAFETY OFFICER



DATE August 31, 2020

BKG CPM: 29

BA-133 STD uCi 0.016331

BA-133 STD CPM: 9382

PUMP DURATION (HRS): 71

PUMP FLOW (ML/MIN): 5000

RESTRICTED FILTER CPM: 51

UNRESTRICTED FILTER CPM: 46

TIME PUMP TURNED OFF/ON: 9:00 AM