



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

April 27, 2016

APPLICANT: NORTHWEST MEDICAL ISOTOPES, LLC

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON MARCH 31, 2016, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND NORTHWEST MEDICAL ISOTOPES, LLC CONCERNING CLARIFICATIONS ON RESPONSES TO REQUEST FOR ADDITIONAL INFORMATION FOR THE ENVIRONMENTAL REVIEW OF THE NORTHWEST MEDICAL ISOTOPES CONSTRUCTION PERMIT APPLICATION

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Northwest Medical Isotopes, LLC (NWMI) held a telephone conference call on March 31, 2016, to discuss and clarify NWMI responses to NRC's request for additional information (RAI) concerning the NWMI radioisotope production facility construction permit application environmental review. The clarification questions pertain to RAI responses submitted by NWMI on November 20, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15328A010) and on February 12, 2016 (ADAMS Accession No. ML16053A221).

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the clarification questions discussed with NWMI.

NWMI had an opportunity to comment on this summary.

/RA/

Nancy Martinez, Environmental Project Manager  
Environmental Review and Projects Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-609

Enclosure:  
As stated

April 27, 2017

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**ADAMS Accession No.: ML16104A043**

\*concurrence via e-mail

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TELEPHONE CONFERENCE CALL  
NORTHWEST MEDICAL ISOTOPES, LLC

LIST OF PARTICIPANTS

MARCH 31, 2016

**PARTICIPANTS**

Michael Balazik  
Gary Dunford  
Carolyn Haass  
Edward Helvenston  
Nancy Martinez

**AFFILIATIONS**

U.S. Nuclear Regulatory Commission (NRC)  
AEM Consulting LLC  
Northwest Medical Isotopes, LLC  
NRC  
NRC

TELEPHONE CONFERENCE CALL CONCERNING  
CLARIFICATION ON RESPONSES TO REQUEST FOR ADDITIONAL INFORMATION  
RELATED TO NORTHWEST MEDICAL ISOTOPES, LLC  
CONSTRUCTION PERMIT APPLICATION

MARCH 31, 2016

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Northwest Medical Isotopes, LLC (NWMI) held a telephone conference call on March 31, 2016, to discuss and clarify responses NWMI provided on requests for additional information (RAIs) concerning the construction permit application environmental review. The clarification questions below pertain to RAI responses submitted by NWMI on November 20, 2015 (ADAMS Accession No. ML15328A010) and on February 12, 2016 (ADAMS Accession No. ML16053A221).

**RAI Response WM-NR-1B**

NRC Clarification Request: The RAI response provided a table that identifies solid waste that would be generated during operation of the proposed facility that would be encapsulated in cement and provides the volume and mass for this waste. Section 19.2.7.3.2 of the NWMI Environmental Report (ER) states that solid waste would be encapsulated in cement when practicable. Clarify if all solid waste would be encapsulated in cement or only when practicable as stated in Section 19.2.7.3.2 of the ER. If not all waste will be encapsulated, what mass and class of waste will not be encapsulated and will it also be shipped to Waste Control Specialists in Andrews, Texas?

Discussion: NWMI clarified that there would be Class A waste that would not be encapsulated on-site at the proposed NWMI facility and could include large pieces of equipment (e.g., equipment that may fail) and for which encapsulating in cement on-site may be difficult. Class A waste that would not be encapsulated could also include other items (i.e., lab waste, used personal protective equipment) included in Table 19-13 of the RAI response under Laboratory Facilities, or under Facility Support, potentially contaminated waste. The volume and mass of any Class A waste that would not be encapsulated are included in the quantities listed in Table 19-13 of the RAI response under Laboratory Facilities, or under Facility Support, potentially contaminated waste. The non-encapsulated waste would be collected and size reduced at the proposed NWMI facility and then shipped to Waste Control Specialist in Andrews, TX where it could be encapsulated. NWMI stated that the volume of waste not encapsulated in cement on-site is not expected to be substantial.

**RAI Response WM-NR-1B and WM-NR-3:**

NRC Clarification Request: The RAI response provided a table that identifies solid waste that would be generated during operation of the proposed facility and identifies Laboratory Facilities waste and Facility Support waste as a source of waste. Clarify if the mass provided in the table accounts for mixed waste and clarify if the Laboratory Facilities waste and Facility Support waste provided in the table will be non-radiological, radiological waste, or mixed waste.

ENCLOSURE 2

Discussion: NWMI clarified that mixed waste is accounted for in the table. The laboratory facility waste provided in the table is radiological waste, a portion of which could be mixed waste and the remainder would be radiological non-hazardous waste. The Facilities Support, potentially contaminated waste provided in the table is low-level, radiological non-hazardous waste. The Facilities Support, municipal waste provided in the table is non-radiological, non-hazardous waste.

### **RAI Response to CONN-5**

NRC Clarification Request: The RAI response identifies that solid waste will increase as a result of target handling and the response points to the discussions in Section 19.4.13.3.1, 19.4.13.3.2, and 19.4.13.3.3 of NWMI ER. The NWMI ER provides waste volume but activity is not provided. What is the activity of the waste?

Discussion: NWMI stated that they currently do not have activity levels of the waste. However, NWMI clarified that the waste at University of Missouri Research Reactor (MURR), Oregon State TRIGA Reactor (OSTR), and the third reactor would be of small volume and would be Class A waste.

### **RAI Response to WM-R-1 and WM-NR-1B**

NRC Clarification Request: The RAI response identified waste generated by the proposed NWMI facility, how it will be handled and disposed of, and states that no greater than class C waste will be generated. Spent low enriched uranium (LEU) however is not identified as Class A, B, C or greater than Class C waste or material that will be disposed of within the response. Clarify what NWMI means by spent LEU.

Discussion: NWMI clarified that spent LEU is uranium for which the U-235 isotope has decreased and it is no longer economically feasible to use for Mo-99 production. This uranium will be returned to the Department of Energy (DOE). Conditions for which NWMI will return LEU to DOE will be stipulated in the Uranium Lease contract between DOE and NWMI.

### **RAI Response to HH2-R-2**

NRC Clarification Request: The RAI response does not include tritium in the stack release source term input to the COMPLY computer modeling code. The NWMI ER (p.19-213) states that radioactive tritium could be present in the airborne effluent exhaust. Clarify whether, and how much, tritium would be released from the stack.

Discussion: NWMI provided how much tritium would be released on annual basis. This value is proprietary. Tritium release rate would be a small fraction of the noble gas rates provided in Table 11-2 of the response. The dose contribution from tritium would be a small fraction of the dose contributions from noble gas radionuclides, and the total public dose from all routine gaseous releases including tritium would remain well below 10 CFR Part 20 limits.

### **RAI Response to WM-NR-4**

NRC Clarification Request: The RAI response identifies that less than 1,000 kg of hazardous waste will be generated per month. Clarify if the 1,000 kg hazardous waste estimate is non-radiological waste or does the estimate include radiological and non-radiological hazardous waste?

Discussion: NWMI clarified that the 1,000 kg of hazardous waste per month includes both radiological and non-radiological waste. NWMI does not have an estimate for the hazardous non-radiological portion of waste generated.

### **RAI Response to NOI2-1B**

NRC Clarification Request: The response states that peak traffic counts to assess facility impacts used an increase of 100 vehicles traveling on U.S. Highway 63 and were 918 in the southbound lane and 1,102 in the northbound lane. Clarify if the model run was conducted with the peak traffic count both in the southbound and northbound lane simultaneously?

Discussion: NWMI will discuss this clarification with the NRC staff during a separate conference call.

### **RAI Response to NO12-1C**

NRC Clarification Request: The response states that the nearest resident distance to the proposed radioisotope production facility (RPF) is 792.5 m (2,600 ft). However, the ER identifies the nearest resident of 0.43 km (0.27 mi; 430 m). Why was a different distance/nearest resident used in the noise model?

Discussion: NWMI will discuss this clarification with the NRC staff during a separate conference call.

### **RAI Response to AIR2-2C**

NRC Clarification Request: Design File EDF-3124-0014 provided with the RAI responses supports the information provided in Table 19-59 of the NWMI ER. Table 19-59 provides the pollutant concentration for the nearest resident at 375 m (1230 ft) from the RPF. However, the supporting calculation, EDF-3124-0014, provides the pollutant concentration to the nearest resident at 430 m. Why is there a difference in the nearest resident distance between what is provided in Table 19-59 and the supporting calculation? Additionally, page 12 of 23 of design file EDF-3124-0014 contains model inputs for process boilers, however, the design file EDF-3124-0014 is for construction activities not operation activities. Why does the design file contain these process boiler inputs?

Discussion: NWMI clarified that the correct distance used is 430 m, as provided in EDF-3124-0014. The distance in Table 19-59 (Anticipated Gaseous Effluents and Their Associated Air Quality Parameters for Construction) of the ER should be 430 m (not 375 m), which was used in design file EDF-3124-0012. NWMI stated that they need to look into why design file

EDF-3124-0014 contained the model inputs for the process boiler and get back to the NRC on this matter during a separate conference call.

### **RAI Response to AIR-2C**

NRC Clarification Request: Design file EDF-3124-0012 provided in the RAI response supports information provided in Table 19-62 (AERSCREEN Model Total Annual Emissions) of the NWMI ER. The EDF-3124-0012 design file uses a distance of 375 m to the nearest residence. Why was a distance of 375 m used rather than the 430 m distance listed in Table 19-9 (Sensitive Populations) of the NWMI ER?

Discussion: NWMI clarified that the distance used was 375 m and this was to be more conservative.

### **RAI Response to GEO-1**

NRC Clarification Request: The response states that NWMI anticipates conducting a site-specific geotechnical and hydrologic study starting January 2016. Has this study been conducted?

Discussion: NWMI stated that the study has not been conducted, but will notify the NRC when the study is conducted.