



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

May 26, 2016

APPLICANT: NORTHWEST MEDICAL ISOTOPES, LLC

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON  
APRIL 21, 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 APPLICATION

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Northwest Medical Isotopes, LLC (NWMI) held a telephone conference call on April 21, 2016, to discuss and clarify NWMI responses to NRC's request for additional information (RAI) concerning the NWMI radioisotope production facility construction 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. ML15328A071) and on February 12, 2016 (ADAMS Accession No. ML16053A204). NWMI provided the NRC with responses via e-mail to the RAI response clarification questions on April 21, 2016 (ADAMS No. ML16117A489 and ML16123A047).

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

Docket No. 50-609

Enclosure:  
As stated

May 26, 2016

APPLICANT: NORTHWEST MEDICAL ISOTOPES, LLC

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON APRIL 21, 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 APPLICATION

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Northwest Medical Isotopes, LLC (NWMI) held a telephone conference call on April 21, 2016, to discuss and clarify NWMI responses to NRC's request for additional information (RAI) concerning the NWMI radioisotope production facility construction 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. ML15328A071) and on February 12, 2016 (ADAMS Accession No. ML16053A204). NWMI provided the NRC with responses via e-mail to the RAI response clarification questions on April 21, 2016 (ADAMS No. ML16117A489 and ML16123A047).

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the clarification questions discussed with NWMI, including a brief description of the status.

NWMI had an opportunity to comment on this summary.

*/RA/*

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

Docket No. 50-609

Enclosure:  
As stated

**ADAMS Accession No.: ML16124A510**

\*concurrence via e-mail

<b>OFFICE</b>	LA:DLR	PM:RERP:DLR	BC:RERP:DLR	PM:RERP:DLR
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<b>DATE</b>	5/ 10 /16	5/ 16 /16	5/ 17 /16	5/ 26 /16

**OFFICIAL RECORD COPY**

**TELEPHONE CONFERENCE CALL**  
**NORTHWEST MEDICAL ISOTOPES, LLC**

LIST OF PARTICIPANTS  
APRIL 21, 2016

**PARTICIPANTS:**

Gary Dunford  
Carolyn Haass  
Edward Helventson  
Nancy Martinez  
Michelle Moser

**AFFILIATIONS:**

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

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

APRIL 21, 2016

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Northwest Medical Isotopes, LLC (NWMI) held a telephone conference call on April 21, 2016, to discuss and clarify responses NWMI provided on requests for additional information (RAIs) concerning the construction application environmental review. The clarification questions below pertain to RAI responses submitted by NWMI on November 20, 2015 (ADAMS Accession No. ML15328A071) and on February 12, 2016 (ADAMS Accession No. ML16053A204). NWMI provided the NRC with responses via e-mail to the RAI response clarification questions on April 21, 2016 (ADAMS No. ML16117A489 and ML16123A047).

**RAI ECO-1 Response Clarification**

NRC Clarification Request: The vegetation assessment submitted with the response to RAI ECO-1 identifies the most common vegetative species as Indian grass (*Sorghastrum nutans*). The vegetation assessment also states that “plant species encountered during the quantitative assessment consisted mostly of non-native plants typically found in disturbed areas such as pastures and right-of-ways.” Indian grass, however, is a native grass species in Missouri that grows 3 to 5 feet tall, and is representative of the tallgrass prairie community. Please confirm that Indian grass is the correct species identified in the surveys.

Table 2 within the vegetation assessment identifies Indian grass, horseweed (*Conyza Canadensis*), and horsenettle (*Solanum carolinense*) as non-native. However, these species are native to Missouri. Please provide the source NWMI used to determine whether each species was native or non-native to Missouri.

Discussion: NRC stated that they reviewed the response NWMI provided in an e-mail (ADAMS No. ML16117A489) pertaining to this RAI response clarification question. NRC staff asked NWMI who conducted the vegetative assessment. NWMI stated that Portage, Inc. conducted the vegetation study and an Appendix to the vegetation assessment, including the biographies of the biologist that conducted the study, would be provided to the NRC at a later time.

**RAI ALT-2B Response Clarification**

NRC Clarification Request: The RAI response states that the Oregon State TRIGA Reactor (OSTR) site has the minimum amount of space required to construct and operate the proposed NWMI facility. The Environmental Report (ER) states, for OSTR, that the “site is immediately east of the university reactor on an area covering approximately 1.21 ha (3 acres).” Clarify if the 1.21 ha (3 acres) includes the Radiation Center and university reactor or if the 1.21 ha (3 acres) is the available space to construct the proposed facility.

Discussion: NRC stated that they reviewed the response NWMI provided in an e-mail (ADAMS No. ML16117A489) pertaining to this RAI response clarification question and have no further questions.

ENCLOSURE 2

### **RAI ALT-2A and ALT-2B Response Clarification**

NRC Clarification Request: The RAI response states that the University of Missouri Research Reactor (MURR) alternative site has the minimum amount of space required to construct and operate the proposed NWMI facility. The ER states, “the site is located directly to the south of the existing reactor building on a partially paved parking lot...the MURR site situated on a 3.0 ha (7.4- acre) lot in the central portion of the University Research Park...” Clarify if the 3.0 ha (7.4-acre) lot refers to the entire MURR facility complex or if this is the available space to construct the proposed facility. If the 3.0 ha (7.4-acre) lot refers to the entire MURR facility complex, what is the space that is available to construct the proposed facility?

Discussion: NRC stated that they reviewed the response NWMI provided in an e-mail (ADAMS No. ML16123A047) pertaining to this RAI response clarification. NRC stated that the response did not state where the diesel generator building or the external administrative building would be constructed on the MURR alternative site. NRC stated that this information is needed for the Alternatives analysis. NWMI stated they would provide the information on construction diesel generator building or the external administrative building at the MURR alternative site at a later time.

### **RAI CONN-1I and CONN-5 Response Clarification:**

NRC Clarification Request: Clarify whether the 3.93E-06 Sv dose to a maximally-exposed individual from highway transportation of radioactive materials (provided in Section 19.4.10.2.2 of the ER) is per year.

Discussion: NRC stated that they reviewed the response NWMI provided in an e-mail (ADAMS No. ML16117A489) pertaining to this RAI response clarification question and have no further questions.

### **RAI HH2-R-1 Response Clarification:**

NRC Clarification Request: The RAI response provided the dose to a member of the public on the ground when the plane is at a cruising altitude of 20,000 feet. Clarify whether Mo-99 will be transported on aircraft carrying members of the public, and if so, provide the public doses (total person-rem per year, and annual dose to maximally-exposed individual) from this transport, or justify why the dose to members of the public on the plane is negligible.

Discussion: NRC stated that they reviewed the response NWMI provided in an e-mail (ADAMS No. ML16117A489) pertaining to this RAI response clarification question and have no further questions.

**RAI CONN-5 and CONN-6F Response Clarification:**

NRC Clarification Request: For MURR, OSTR, and the hypothetical third reactor, clarify whether facility modification and refurbishment activities will change the types or quantities of effluents that may be released. Also, clarify whether these activities would result in an increase in individual or cumulative public or occupational radiation exposure.

Discussion: NRC stated that they reviewed the response NWMI provided in an e-mail (ADAMS No. ML16117A489) pertaining to this RAI response clarification question and have no further questions.

**RAI CONN-1I Response Clarification:**

NRC Clarification Request: Clarify whether any increase in dose to public (from direct radiation, or any other sources other than increased Ar-41 effluents) would be expected from irradiation services at the hypothetical third reactor.

Discussion: NRC stated that they reviewed the response NWMI provided in an e-mail (ADAMS No. ML16117A489) pertaining to this RAI response clarification question and requested a basis for the information provided in the e-mail response. NWMI stated that the basis for this response was that, similarly to OSTR, new activities performed at the hypothetical third reactor would be similar to fuel handling activities that are already performed at the hypothetical third reactor and do not cause significant offsite dose.