

NRR-PMDAPEm Resource

From: Carolyn Haass <carolyn.haass@nwmedicalisotopes.com>
Sent: Thursday, April 21, 2016 11:32 AM
To: Martinez, Nancy
Cc: Carolyn Haass; Balazik, Michael
Subject: [External_Sender] Preliminary Responses for Today's Telecon

Nancy,

Below are NWMI's preliminary responses for Today's Telecon at 2pm EDT.

RAI ECO-1 Response Clarification

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.

NWMI Response: Indian Grass (*Sorghastrum nutans*) is a native grass of Missouri tallgrass prairie communities. The NWMI site (Lot 15) at Discovery Ridge Research Park is considered as part of a historical tallgrass prairie. Indian grass is considered to be weedy or invasive in some regions or habitats and may displace desirable vegetation (Owsley, 2011). Based on the current use of the property (pasture land), Indian grass can be considered a weedy species because it is not the most desirable for that location. The RAI ECO-1 should classify Indian grass as weedy instead of non-native. Based on the photos taken while on site and plant identification reference books, the majority of the grass observed at the site is identified as Indian grass. Please note, at the time of NWMI's vegetation assessment, all grasses had been heavily grazed, and therefore, appeared to be short. In addition, horsenettle and horseweed are listed on the University of Missouri Weed ID guide (UM, 2016). These species are considered native; however, based on the listing these species are undesirable. The RAI ECO-1 should classify Indian grass as weedy instead of non-native.

References:

- Owsley, Mike, 2011. Plant fact sheet for Indiangrass (*Sorghastrum nutans* [L.] Nash). USDA-Natural Resources Conservation Service, Jimmy Carter PMC Americus, Georgia 31719.
- UM, 2016. University of Missouri, Division of Plant Science, Weed ID Guide. <http://weedid.missouri.edu/>

RAI ALT-2B Response Clarification

The RAI response states that the OSTR site has the minimum amount of space required to construct and operate the proposed NWMI facility. The 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.

NWMI Response: The potential proposed site at OSTR is northeast of the Radiation Center Building and immediately east of the Nuclear Reactor Building. The potential site available for the RPF was approximately 3 acres and does not include the Radiation Center Building or Nuclear Reactor Building.

RAI CONN-11 and CONN-5 Responses Clarification:

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) is per year.

NWMI Response: The maximally-exposed individual dose from highway transportation of radioactive materials was provided on an annual basis in Section 19.4.10.2.2.

RAI HH2-R-1 Response Clarification:

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.

NWMI Response: NWMI assumed that no commercial airliners would be used to transport Mo-99 product.

RAI CONN-5 and CONN-6F Responses Clarification:

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.

NWMI Response: None of the modifications and refurbishment activities at MURR, OSTR or the hypothetical third reactor will change the types or quantities of effluents that may be released nor will these activities result in an increase in individual or cumulative public or occupational radiation exposure. The reason for this is because none of the facility modifications or refurbishment activities will change the quantities or radioisotopes produced nor will they affect their effluent discharge rate. When completed, the modifications and refurbishments are projected to assist in the handling of the targets at each facility but they are not themselves related to the generation or release of radioactive material.

RAI CONN-11 Responses Clarification:

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.

NWMI Response: NWMI expects no increases in dose to the public (from direct radiation, or any other sources other than increased Ar-41 effluents) is expected at the hypothetical third reactor.

Carolyn Haass

Northwest Medical Isotopes, LLC

Chief Operating Officer | Vice President

509-430-6921

carolyn.haass@nwmedicalisotopes.com

www.nwmedicalisotopes.com

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"Carolyn Haass" <carolyn.haass@nwmedicalisotopes.com>

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"Balazik, Michael" <Michael.Balazik@nrc.gov>

Tracking Status: None

"Martinez, Nancy" <Nancy.Martinez@nrc.gov>

Tracking Status: None

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