



Missouri Department of dnr.mo.gov

**NATURAL RESOURCES**

Eric R. Greitens, Governor

Carol S. Comer, Director

**SEP 15 2017**

Ms. Carolyn C. Haass  
Northwest Medical Isotopes, LLC  
815 NW 9<sup>th</sup> Street, Suite 256  
Corvallis, OR 97330

RE: Clean Water Act Section 401 Water Quality Certification of Northwest Medical Isotopes, LLC Facility in Boone County, NUREG-2209/CEK007189

Dear Ms. Haass:

The Missouri Department of Natural Resources' Water Protection Program has reviewed your request for Clean Water Act Section 401 Water Quality Certification (WQC). Northwest Medical Isotopes, LLC (NWMI) plans to construct a radioisotope production facility to fabricate low-enriched uranium (LEU) targets; ship targets to university research reactors; irradiate LEU targets at university research reactors; return targets to the facility; conduct LEU target disassembly and dissolution; extract, purify, and ship molybdenum-99 for medical purposes; and recover and recycle uranium, which will be located on a 7.4-acre site within the University of Missouri's Discovery Ridge Research Park in Columbia, Missouri.

The NWMI facility will consist of four main buildings: radioisotope production facility, water management, diesel generator, and administration. Currently, no domestic producers of molybdenum-99 exist in the United States. The U.S. Department of Energy's National Nuclear Security Administration will review, approve, and contract NWMI to obtain LEU through the Uranium Lease and Take-Back Program established in January 2016.

This facility is currently seeking a license to construct the facility and will seek a separate, future licensing action to operate from the U.S. Nuclear Regulatory Commission (NRC) per the 'Environmental Impact Statement for the Construction Permit for the Northwest Medical Isotopes Radioisotopes Production Facility' dated May 2017. NWMI expects to request an operating license term of 30 years. The NRC considered the environmental impacts associated with the following alternatives:

- No action alternative (NRC construction permit not granted);
- Construction, operations, and decommissioning of the NWMI facility at the Discovery Ridge site (proposed action);
- Construction, operations, and decommissioning of the NWMI facility at the University of Missouri Research Reactor site (alternative site);



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- Construction, operations, and decommissioning of a linear accelerator-based facility at the Discovery Ridge site (alternative technology no. 1); and
- Construction, operations, and decommissioning of a subcritical fission-based facility at the Discovery Ridge site (alternative technology no. 2).

An approved, conditioned, denied or waived WQC is needed from the Department when a federal permit or license is granted in order to protect the state's water quality standards. As a requirement of the federal license, NWMI must provide the NRC with a WQC from the state of Missouri, or demonstrate the state's waiver. State WQC would indicate discharges from the project will comply with Clean Water Act requirements, as applicable, and the project will not cause or contribute to a violation of Missouri's water quality standards.

Stormwater from this site is expected to flow southwest to an unnamed tributary before flowing southeast to reach Gans Creek, 0.37 mile downstream. Gans Creek has both gaining and losing segments as a result of its location in a Karst system, which has caves, sinkholes, and springs transporting water and any potential pollutants underground. Within Rock Bridge Memorial State Park located downstream of the facility, Gans Creek is protected as an Outstanding State Resource Water.

The proposed project is located in the Discovery Ridge Research Park, Lot 15, within the city of Columbia in Section 33, Township 48 North, Range 12 West in Boone County, Missouri. Approximate geographic coordinates for the project are 38.900733°N and 92.275894°W.

This WQC is being issued under Section 401 of Public Law 95-217, The Clean Water Act of 1977 and subsequent revisions. This office certifies the ongoing activities will not cause the general or numeric criteria to be exceeded nor impair beneficial uses established in Water Quality Standards, 10 CSR 20-7.031, provided the following conditions are met:

1. NWMI's Columbia, Missouri, facility, which has a primary Standard Industrial Classification code of 2835 or North America Industry Classification System code of 32541, shall acquire at least once every five years a Clean Water Act Section 402 National Pollutant Discharge Elimination System/Missouri State Operating Permit (MSOP) or Certification of No-Exposure from the Department prior to operation to address industrial process and stormwater water quality. A MSOP or Certification of No-Exposure is issued through the Department's authority under Section 402 of the federal Clean Water Act and Chapter 644 of the Missouri Clean Water Law. Compliance with the conditions of the MSOP or Certification of No-Exposure ensures the facility will not cause the general or numeric criteria to be exceeded nor impair beneficial uses established in the state's water quality standards at 10 CSR 20-7.031 and complies with the state's effluent regulations at 10 CSR 20-7.015 and permit regulations at 10 CSR 20-6.

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2. This WQC 'prohibits all discharges of radiological, chemical, or biological warfare agent or high-level radioactive waste into waters of this state' per Missouri Clean Water Law at §644.026(18).
3. All streams and lakes shall conform to state and federal limits for radionuclides established for drinking water supply per 10 CSR 20-7.031(5)(I).
4. Once constructed, public drinking water will be supplied by the Boone County Consolidated Public Water Supply District No. 1 and sanitary sewer treated by the city of Columbia. NWMI's facility shall keep these waters isolated from water used in the production of radioisotopes and the resulting waste, which shall be recycled or properly disposed of off-site.
5. A Section 402 National Pollutant Discharge Elimination System Land Disturbance Permit MO-RA00000 is required for activities disturbing one or more acres of total area for the entire project or smaller than one acre for sites that are part of a common promotional plan of development. Instructions on how to apply for and receive the online land disturbance permit are located at [www.dnr.mo.gov/env/wpp/epermit/help.htm](http://www.dnr.mo.gov/env/wpp/epermit/help.htm). Questions regarding permit requirements may be directed to the Department's Land Disturbance phone line at 573-526-2082 or toll free at 855-789-3889.
6. Should a jurisdictional water be impacted by the construction of the facility, NWMI shall consult with the U.S. Army Corps of Engineers' Regulatory Branch to determine if a Section 404 Department of the Army permit is required. A WQC separate from this document would be required if a Section 404 permit is issued.
7. The city of Columbia, University of Missouri, and Boone County are covered under joint Municipal Separate Storm Sewer System Permit MO-0136557 with measures to control and possibly treat stormwater. You shall comply with all stormwater requirements of the city's Stormwater Management Plan and any related ordinances.
8. Any entity with equipment capable of withdrawing or diverting 100,000 gallons or more of water per day (70 gallons per minute) from one or multiple withdrawal points in a stream, river, lake, well, spring or other water source regardless of actual amount produced is considered a major water user in Missouri (<http://dnr.mo.gov/env/wrc/mwu-forms.htm>). All major water users are required by law to register water use annually. Additional information can be acquired from the Missouri Geological Survey's Water Resources Center's Groundwater Section at 573-368-2100 or toll free at 800-361-4827.
9. Acquisition of a WQC shall not be construed or interpreted to imply requirements for regulatory authorizations outside the scope of a WQC are replaced or superseded. Permits or any other requirements shall remain in effect.

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10. Best Management Practices shall be used during all phases of the project to limit the amount of discharge of water contaminants to waters of the state. The project shall not involve more than normal stormwater or incidental loading of sediment caused by construction disturbances.
11. The Department shall receive a copy of any plans or reports approved by the NRC, which may be provided electronically.
12. Environmental concerns shall be reported as soon as possible, but no later than 24 hours after discovery to the Department's Environmental Emergency Response number at 573-634-2436.
13. The Department shall review this WQC prior to issuance of an operating license and may review this WQC every five years thereafter to assure the project has not caused and apparently will not cause the general or numeric criteria to be exceeded nor impair designated uses established in Water Quality Standards, 10 CSR 20-7.031. This review may include but is not limited to on-site inspections, document reviews and requests for additional information to be provided by NWMI as necessary to make this determination.
14. The Department reserves the right to address any exceedance of water quality standards as authorized by law. If the Department determines water quality standards are being violated, additional conditions may be imposed or existing conditions amended by the Department. If NWMI fails to meet a standard, the Department may require development of a compliance plan, subject to Department approval, and timely implementation of the plan.
15. The Department may request at any time the NRC reopen the license to consider modifications to the license as necessary to ensure compliance with Missouri's Water Quality Standards.
16. The WQC is based on information submitted as of August 28, 2017. Should any facility modifications occur, please contact the Department to determine whether the WQC remains valid or needs to be amended or revoked. Except under emergency circumstances, any modification of this WQC or issuance of a new WQC shall be completed prior to implementing any changes.

Pursuant to Chapter 644, RSMo, commonly referred to as the Missouri Clean Water Law, and fee regulations under 10 CSR 20-6.011(2)(I), this WQC shall be valid only upon payment of a fee of \$150.00. The enclosed invoice contains the necessary information on how to submit your fee. Payment must be received within ten business days of receipt of this WQC. Upon receipt of the fee, the NRC will be informed the WQC is now in effect and final.

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You may appeal to have the matter heard by the Administrative Hearing Commission (AHC). To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

Water Quality Standards must be met during any operations authorized. If you have any questions, please contact Stacia Bax by phone at 573-526-4586, by email at [stacia.bax@dnr.mo.gov](mailto:stacia.bax@dnr.mo.gov), or by mail at the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176. Thank you for working with the Department to protect our environment.

Sincerely,

WATER PROTECTION PROGRAM



Chris Wieberg  
Director

CW:sbp

Enclosure

c: Mr. Joe Bowdish, Northeast Regional Office  
Ms. Sherry Bell, Fiscal Management Section, Budget and Fees Unit  
Mr. Michael Balazik, U.S. Nuclear Regulatory Commission  
Mr. David Drucker, U.S. Nuclear Regulatory Commission  
Mr. Jacob Faulkner, Operating Permits Section  
Mr. Michael Flagg, Northwest Medical Isotopes, LLC - Consultant  
Mr. Rob Hunt, Office of the Director  
Mr. John Jurgensmeyer, Hazardous Waste Program  
Ms. Kyra Moore, Air Pollution Control Program  
Mr. Chris Nagel, Solid Waste Management Program  
Ms. Missy Newman, Office of the Director  
Ms. Gayle Unruh, Missouri Department of Transportation