



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

August 3, 2023

MEMORANDUM TO: Samantha C. Lav, Chief  
Fuel Facility Licensing Branch  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

FROM: James R. Downs, Senior Project Manager  
Fuel Facility Licensing Branch  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: SUMMARY OF JUNE 29, 2023, PUBLIC MEETING –  
TELECONFERENCE WITH NUCLEAR FUEL SERVICES, INC.  
REGARDING ADDITIONAL INFORMATION NEEDED ON THE  
U-METAL LICENSE AMENDMENT REQUEST

A handwritten signature in black ink that reads "James R. Downs".

Signed by Downs, James  
on 08/03/23

On June 29, 2023, the U.S. Nuclear Regulatory Commission (NRC) held a public meeting with Nuclear Fuel Services, Inc. (NFS) to discuss additional information needed on the U-metal license amendment request. The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML23173A161. This meeting was held via teleconference using the Microsoft Teams platform, and the enclosed attendance list provides the attendees for the meeting as captured by the NRC staff who helped facilitate the meeting. A recording of the meeting is available on the NRC's YouTube channel (<https://youtu.be/slptQwlbwBw>).

During the meeting, the NRC staff described the additional information that is needed to ensure that NFS has identified and evaluated potential accidents for natural phenomena hazards in its integrated safety analysis (ISA), established items relied on for safety (IROFS) and management measures for natural phenomena hazards (NPH) that comply with the regulatory requirements, and ensured adequate protection of public health and safety. The following key messages were displayed on a slide throughout the meeting:

- The NRC staff researched the licensing basis for NFS, including ISA documents and implementing procedures. The staff confirmed that, historically, the NFS licensing basis has contained inconsistent positions regarding the designation of buildings as IROFS for NPH and the demonstration of compliance with the performance requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) 70.61.

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- The NFS treatment of NPH in its U-metal license amendment request (LAR) appears inconsistent with the requirements of 10 CFR 70.4, 70.61(e), 70.62(c)(1), and 70.62(d); the currently documented NRC staff position in NUREG-1520, revision 2, "Standard Review Plan for Fuel Cycle Facilities License Applications" (ML15176A258); and a 2012 letter to the Nuclear Energy Institute (ML113420462).
- The NRC staff has stated that the terms "design feature" and "initial condition" are not defined in the NRC regulations and therefore lack regulatory significance in the oversight process. The staff's position is that engineered or administrative controls (e.g., structures, systems, equipment, components, and activities of personnel) used as "design features" or "initial conditions" to prevent or mitigate events and their consequences (i.e., meet the performance requirements of 10 CFR 70.61) may not be considered in the determination of unmitigated consequences unless those controls are designated as IROFS.
- Further communication is needed for the NRC staff to fully understand how NFS is going to meet the regulatory requirements of 10 CFR 70.4, 70.61(e), 70.62(c)(1), and 70.62(d) for this LAR. Without the LAR demonstrating that an ISA for NPH has been properly conducted for the U-metal process, the staff remains unable to make a finding that NFS has identified and evaluated potential NPH accidents or established IROFS and management measures for NPH that comply with the noted requirements.

After the NRC staff discussed the key messages, NFS staff voiced their appreciation and stated that they had no questions or comments. That concluded the business portion of the meeting.

After the business portion of the meeting was completed, members of the public were provided with an opportunity to ask questions of the NRC staff or make comments about the issues that were discussed. The referenced recording of the meeting captures these questions and comments. The NRC staff will consider how to further address concerns raised at this meeting and other recent public discussions. Whether an additional public engagement is conducted by the NRC, or some other communication tool is used, is to be determined. Note that the NRC maintains a public webpage (<https://www.nrc.gov/materials/fuel-cycle-fac/fuel-fab/nfs-faqs.html>) that provides information on frequently asked questions regarding NFS.

There were three items that the NRC staff committed to providing additional information on within this meeting summary:

#### Item #1

##### *Question:*

What are the regulatory limits regarding effluents released by NFS?

##### *Response:*

The provisions of 10 CFR 20.1301, "Dose limits for individual members of the public," and 10 CFR 20.1302, "Compliance with dose limits for individual members of the public," apply to radiological effluents. Section 20.1301 requires that the dose to the public not exceed 100 millirem in a year. Section 20.1302 describes two methods for complying with this limit. The first method of compliance is for the licensee to calculate the dose of a public member who would receive the highest dose. The second method is for the licensee to maintain effluent releases

below the effluent concentrations specified in 10 CFR Part 20, appendix B, table 2. The second method is more conservative since the release limits assume that an individual is continuously present at the site boundary. Both methods include airborne and liquid effluents and are crafted to ensure that the highest calculated dose from licensed activities does not exceed 100 millirem in a year to the maximally exposed member of the public.

The provisions of 10 CFR 20.2003, "Disposal by release into sanitary sewerage," limit radiological material discharged to the sanitary sewer. Limits are specified for various radionuclides and are based on an average monthly concentration. Monthly discharges to sanitary sewerage must be based on the volume of water released into the sewer to ensure that concentrations do not exceed applicable limits. The monthly average concentration limits are listed in 10 CFR Part 20, appendix B, table 3.

Note that the Tennessee Department of Environment and Conservation (TDEC) has jurisdiction over any radiological effluents from the activities authorized by the TDEC license such as natural uranium activities. TDEC also has regulatory jurisdiction over the chemical constituents in the effluents. The State issues permits for all chemical releases from the site.

#### Item #2

##### *Question:*

What is the ADAMS accession number for the NRC letter to NFS dated June 23, 2023?

##### *Response:*

The ADAMS accession number for the referenced letter is [ML23172A245](#). The document is available for public inspection in the NRC Public Document Room (PDR) or electronically from the publicly available records component of ADAMS. The PDR is currently open Monday - Friday by appointment only. To schedule an appointment, you may submit your request to the PDR via email at [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov) or call 1-800-397-4209 between 8:00 a.m. and 4:00 p.m. (EST), Monday through Friday, except Federal holidays. The ADAMS database is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>.

#### Item #3

##### *Question:*

What is the difference between highly enriched uranium (HEU) and very highly enriched uranium (VHEU)?

##### *Response:*

HEU is uranium that is enriched to at least 20 percent, by weight, in the fissile isotope uranium-235. VHEU is uranium enriched to more than 94 percent, by weight, in the fissile isotope uranium-235. Materials License special nuclear material (SNM)-124 currently authorizes NFS to possess uranium up to 100 percent, by weight, in the uranium-235 isotope and in a wide variety of chemical and physical forms.

The proposed uranium purification and conversion process (U-metal) would not change the possession limits in the materials license nor the authorized enrichment. Thus, VHEU is not a new type of material to be handled at NFS as part of the proposed U-metal contract.

Docket No. 70-143  
License No. SNM-124

Enclosure:  
Attendance List

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DOCUMENT DATE: August 3, 2023

**DISTRIBUTION:**

PUBLIC  
nfs@listmgr.nrc.gov  
DFM r/f

**ADAMS Accession No.: ML23206A171**

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<b>NAME</b>	JDowns	JCurry	SLav	JDowns
<b>DATE</b>	07/26/2023	08/03/2023	08/03/2023	08/03/2023

**OFFICIAL RECORD COPY**

ATTENDANCE LIST

<b>NAME</b>	<b>AFFILIATION</b>	<b>NAME</b>	<b>AFFILIATION</b>
Tom Holly	Nuclear Fuel Services, Inc.	Marilyn Maldonado	COMM/OCMAC
other staff	Nuclear Fuel Services, Inc.	Samantha Lav	NMSS/DFM/FFLB: BC
Chris Berg	member of public	Matt Bartlett	NMSS/DFM/FFLB
Buckey Boone	member of public	James Downs	NMSS/DFM/FFLB
Kathy Helms	member of public	Stephen Poy	NMSS/DFM/FFLB
Carol Landi	member of public	Jonathan Rowley	NMSS/DFM/FFLB
Bob Maurer	member of public	Patrick Koch	NMSS/DFM/MSB
Laura Mayes	member of public	Juan Lopez	NMSS/DFM/MSB
William Mayo	member of public	Travis Jones	OGC/LHE/MFW
Linda Modica	member of public	Kevin Roach	OGC/LHE/MFW
Barbara O'Neal	member of public	Dave Gasperson	OPA/OPA-RII
Wyatt Padgett	member of public	Anthony Masters	R-II/DFFI: DD
Janet Schlueter	member of public	Robert Williams	R-II/DFFI/PB1: BC
Brian Stone	member of public	Larry Harris	R-II/DFFI/PB1/NFSSO
Tim Tate	member of public	Lindsey Cooke	R-II/DFFI/PB1
Dave Tiktinsky	member of public	Joel Rivera-Ortiz	R-II/DFFI/PB1
Trudy Wallack	member of public	other staff	US NRC
other individuals	members of public		