

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS  
WASHINGTON, DC 20555-0001

June 26, 2023

**NRC REGULATORY ISSUE SUMMARY 2023-02  
SCHEDULING INFORMATION FOR THE LICENSING OF ACCIDENT TOLERANT,  
INCREASED ENRICHMENT, AND HIGHER BURNUP FUELS**

**ADDRESSEES**

All holders of operating licenses for nuclear power reactors under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," or holders of a combined license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," except those that have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

All holders of licenses and potential applicants for a fuel cycle facility under the provisions of 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," and holders of licenses and Certificates of Compliance (CoC) and potential applicants for transportation and storage systems under the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," and 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste."

**INTENT**

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to assist the NRC in determining budgetary and technical resource needs with respect to the licensing of reactor fuels with accident tolerant fuel (ATF) concepts, higher burnup, and increased enrichment and any changes in previously announced plans to license the use of these technologies.

Additionally, this RIS is intended to promote early communication between the NRC and licensees and potential applicants about the planned licensing of reactor fuel with ATF concepts, increased enrichment, and higher burnup. This RIS does not transmit or imply any new or changed requirements or staff positions. Although no specific action or written response is required, submission of the requested information will enable the NRC to plan its licensing activities more efficiently and effectively.

## **BACKGROUND INFORMATION**

The U.S. Congress has provided funding through the U.S. Department of Energy to support the development and deployment of fuels containing ATF concepts, increased enrichment, and higher burnup. The NRC understands that the industry's goal is to begin deploying fuels with combinations of these technologies in existing nuclear power reactors by the mid-to-late 2020s. The NRC encourages licensees and vendors to engage early with the NRC staff so that potential technical or policy issues can be identified before an application is submitted. Given this interest, the NRC is seeking additional information to forecast its project workload. The NRC will use the information obtained from this RIS to inform its budgetary and technical resource allocation planning.

## **SUMMARY OF ISSUE**

The NRC encourages licensees and potential applicants to provide the agency with scheduling information for preapplication activities and licensing submittals for ATF, increased enrichment, and higher burnup fuel. This information will allow the NRC to better allocate its budgetary and technical resources to perform timely and effective reviews of such applications.

## **VOLUNTARY RESPONSE**

The NRC staff has developed several questions on the scheduling of activities related to ATF, increased enrichment, and higher burnup fuel. The NRC will use addressees' responses to help determine resource allocation and prioritization for such applications that will be submitted in upcoming fiscal years.

The NRC may share the application schedules with other Federal agencies to support its planning for reviewing licensing submittals for ATF, increased enrichment, and higher burnup fuels. If a prospective applicant deems this information proprietary, a request to withhold information from public disclosure in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," must accompany the information. RIS 2004-11, "Supporting Information Associated with Requests for Withholding Proprietary Information," dated June 29, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML041180231), provides additional information about requests for withholding proprietary information from public disclosure. The NRC asks potential applicants to request withholding only for information that is currently treated as proprietary and to provide, where necessary, the proprietary information in designated attachments to their response to this RIS.

If an addressee chooses to provide a voluntary response, the NRC would like to obtain the information within 60 days of the date of this RIS. Respondents should answer the questions below to the best of their ability, providing as much detail as possible.

The NRC staff recognizes that the addressees' ability to respond to these questions depends, in part, on the stage of submittal preparation. In some cases, addressees may not be able to respond to all questions at this time. With this in mind, the NRC staff also encourages voluntary updates to initial responses to this RIS as significant scheduling changes occur.

The NRC seeks voluntary responses to the following questions, as applicable:

- (1) Do you plan to submit a license amendment request to adopt fuel with increased enrichment, higher burnup, or one or more ATF concepts, or a license amendment request for lead test assemblies with one or more of these technologies? If so, what technologies will the fuel include, and what is the timeframe for submitting the request?
- (2) Do you plan to submit any additional, related licensing actions (e.g., requests for exemption) to support transition to one or more of these fuel types? If so, what additional licensing request(s) do you plan to submit, and what is the timeframe for submitting the request(s)?
- (3) Do you anticipate that applications for new fuel concepts could benefit from modification or enhancement of existing NRC guidance or creation of new guidance? If so, which guidance documents could be considered for modification or what type of new guidance could be developed and for what purpose?
- (4) Existing fuel facility licensees and CoC holders of transportation and storage systems: Do you plan to submit a license amendment request to allow enrichment, fuel fabrication, and transportation of material with ATF concepts, increased enrichment, or higher burnup? If so, what is the increased enrichment limit requested, what technologies will the material include, and what is the timeframe for submitting the request?
- (5) New fuel facility licensee and CoC applicants of transportation and storage systems: Do you plan to submit a new application to allow fuel fabrication, and transportation of material with ATF concepts, increased enrichment, or higher burnup? If so, what is the enrichment limit, what technologies will the material include, and what is the timeframe for submitting the request?

## **BACKFITTING AND ISSUE FINALITY DISCUSSION**

This RIS requests the addressees to inform the NRC of its plans regarding the potential use of ATF, increased enrichment and higher burnup fuels, and the enrichment, manufacturing, and transportation of fuels with higher enrichment. This RIS requests the addressees to voluntarily provide information to assist the NRC in the administrative tasks of budgeting and resource allocation. This constitutes information collection and reporting and is not within the purview of the Backfit Rule, in accordance with 10 CFR 50.109, "Backfitting," 10 CFR 70.76, "Backfitting," 10 CFR 72.62, "Backfitting," or any of the issue finality provisions in 10 CFR Part 52. In addition, this RIS does not require any action or written response from the addressees. Any action on the part of addressees to collect and transmit information in accordance with the request contained in this RIS is strictly voluntary. For these reasons, the NRC staff did not perform a backfit analysis for this RIS or further address any issue finality criteria in 10 CFR Part 52.

## **FEDERAL REGISTER NOTIFICATION**

The NRC did not publish a notice of opportunity for public comment on this RIS in the *Federal Register*, because the RIS pertains to an administrative aspect of the regulatory process that involves the voluntary submission of information on the part of addressees and does not represent a departure from current regulatory requirements.

## CONGRESSIONAL REVIEW ACT

The NRC staff have determined that this RIS is not a rule as defined in the Congressional Review Act (5 U.S.C. 801-808).

## PAPERWORK REDUCTION ACT STATEMENT

This RIS contains voluntary information collections that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). The Office of Management and Budget (OMB) approved these information collections (approval number 3150-0258). The burden to the public for these information collections is estimated to average 20 hours per initial response and 10 hours for subsequent updates. Send comments regarding this information collection to the FOIA, Library, and Information Collections Branch, Office of the Chief Information Officer, Mail Stop: T6-A10M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and to the OMB reviewer at: OMB Office of Information and Regulatory Affairs (3150-0258), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; email: [oira\\_submission@omb.eop.gov](mailto:oira_submission@omb.eop.gov).

## Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, an information collection unless the requesting document displays a currently valid OMB control number.

## CONTACT

Please direct any questions about this matter to the technical contacts listed below.

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Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under NRC Library/Document Collections.

**REGULATORY ISSUE SUMMARY 2023-03, "SCHEDULING INFORMATION FOR THE LICENSING ACCIDENT-TOLERANT, HIGHER BURNUP, AND INCREASED ENRICHMENT FUELS," DATE: June 26, 2023**

**ADAMS Accession No.: ML23123A166**

**EPID No. L-2023-GEN-0004**

OFFICE	NRR/DORL/LLPB/PM	NRR/DORL/LLPB/PM	OE/EB/BC	QTE
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DATE	5/4/23	5/5/23	5/11/23	4/28/
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DATE	5/11/23	5/16/23	5/25/23	5/25/23
OFFICE	NRR/DRA/D	NRR/DORL/D	NRR/DSS/D	RES/DSA/D
NAME	MFranovich	BPham	JDonoghue	KWebber
DATE	5/30/23	5/24/23	5/24/23	5/24/23
OFFICE	OGC (NLO)	NRR/DRO/IOEB/PM	NRR/DRO/IOEB/PM	NRR/DRO/IOEB/LA
NAME		BBenney	PClark	IBetts
DATE	6/8/23	6/1/23	6/1/23	5/30/23
OFFICE	NRR/DRO/IOEB	NRR/DRMA/MIST	OCIO/GEMS/ISB	NMSS/DFM/CTCFB
NAME	LRegner	LHill	DCullison	JPiotter
DATE	6/16/23	6/2/23	6/5/23	6/20/23
OFFICE	NMSS/DFM/CTCFB	NMSS/DFM/D	NRR/DRO/D	
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DATE	5/16/23	6/26/23	6/26/23	

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