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Preparing to License Accident Tolerant Fuel

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Preparing to License Accident Tolerant Fuel

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Submitter Information

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General Comment

Please see attached comments from URENCO USA on the NRC published draft project plan for preparing to license accident tolerant fuel. (Docket No. ID NRC-2017-0236)

Attachments

UUSA Comments on Preparing to License Accident Tolerant Fuel _Docket ID NRC_2017_0236

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**Subject: UUSA Comments on Preparing To License Accident Tolerant Fuel
(Docket No. ID NRC-2017-0236)**

On December 21, 2017, the Nuclear Regulatory Commission (NRC or Commission) published a draft project plan to license accident tolerant fuel (82 Fed. Reg. 60633). Comments were requested by February 5, 2018. Louisiana Energy Services, LLC (dba "UUSA") hereby submits and requests the Commission's consideration of the following comments. The UUSA uranium enrichment facility in southeast New Mexico, which began operating in 2010, reflects an investment of more than \$4.5 billion in U.S. manufacturing. The facility - which represents the nation's only commercial enrichment capability - is currently capable of meeting roughly one-third of annual demand for uranium enrichment services from U.S. utilities based on present capacity of 4.8 million SWU/year.¹

Executive Summary

The proposal, among others, indicated that there would be two approaches for new licensing activities depending upon whether the Accident Tolerant Fuel concepts in question are "evolutionary" and "revolutionary". UUSA encourages the effort to introduce Accident Tolerant Fuels of both types in order to provide multiple options to U.S. utilities in pursuing their forward fuel plans. As described further below:

- UUSA technology in place already supports the need for low enriched uranium >5% U₂₃₅. The licensing and nuclear criticality safety activities would account for the majority of UUSA's tasks in support of the project.
- UUSA recommends early coordination among the larger ATF community and the NRC to ensure timely development and licensing of packagings required for higher assays or pellets/assemblies containing new materials on a time line consistent with utility needs.
- Alignment across fuel cycle facilities' licensing actions is a concern. In order for a project of this magnitude to be successful, the industry needs to be in tune with all other facilities licensing actions.

UUSA's Contribution to the Project

While there may be revolutionary concepts involved in specific ATF solutions, this is not the case for the enrichment piece of the supporting nuclear fuel cycle. UUSA currently provides low enriched uranium to U.S. reactors at enrichments of less than 5% ²³⁵U and UUSA's advanced gas centrifuge technology is capable of addressing higher assays of Low Enriched Uranium as needed by the ATF developers from a technical standpoint. UUSA is eager to contribute our services for this project but we understand that this is an industry-wide agenda that requires tight alignment between the enricher, fabricators and utilities. UUSA has not seen evidence of whether the NRC plans on facilitating periodic meetings with updates to provide alignment and consistency through the industry. As the only operating enrichment facility in the United States, UUSA requests direct communication from the Commission on future proceedings. UUSA is interested in how the Commission will seek to support a fuel cycle-wide response to ATF activities. For Regulatory Efficiency, UUSA recommends a working group for such a project to include at least one representative from each Fuel Cycle Facility.

¹ Capacity in enrichment services is typically measured in terms of separative work units, or SWU, which is a standard measure of the effort required to increase the concentration of the fissionable ²³⁵U isotope.

Fuel Transportation and Storage Licensing Activities

For transport of uranium hexafluoride at assays above 5% ^{235}U from the enricher to the fabricator, new packaging solutions (including a cylinder/overpack combination) – whether through additional analysis of existing designs or development of new packagings – may be necessary, especially to ensure compliance with 10 CFR 71.55(g)(4). Similarly, new packagings for the transport of oxides, pellets and fabricated assemblies at higher LEU assays may also be required. Given the lead times associated with analysis, design, hypothetical accident testing and regulatory approval, the NRC is correctly focusing on this need in Task 2. UUSA encourages a working group drawing from Fuel Cycle Facilities, the Class 7 transportation community and utilities to identify appropriate packaging solutions, perhaps relying on a common set of criticality analyses to underpin any such evaluations.

NRC Resources Allotted for Fuel Facility Reviews

UUSA is concerned because the proposed Draft Project Plan's supporting document, Task 2, Regulatory Framework Fuel Facilities, Transportation and Storage (ML17325B774) states:

"If enriched uranium greater than 5 percent U235 is needed, amendment requests are expected to authorize the plants to produce the higher enriched material. Any facility change to produce U3Si2-based or uranium metal-based ATF is expected to require an amendment which will likely require greater effort than an amendment request for the production of UO2-based ATF. It is expected that any such requests would be made later. These activities are expected to be addressed in future updates of this plan as industry plans become more certain."

Although the quoted language specifically refers to future activities with the overall project, UUSA is concerned about multiple fuel facility amendment requests being reviewed in unison. It is understood that such a project is a combined effort across the industry. Due to the limit of NRC resources, there is a potential for a significant impact to the review of operational LARs.

UUSA appreciates the opportunity to comment on the subject draft project plan. If you have any questions, please contact Wyatt Padgett, Licensing and Performance Assessment Manager, at 575-394-5257.

Respectfully,



Stephen R. Cowne
Chief Nuclear Officer and Compliance Manager