

Advance Act Implementation Recommendations for Fuel Cycle Facilities

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Introduction – Who am I?

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- ▶ David Tiktinsky - formerly worked for the USNRC for over 39 years until December 2021
- ▶ Last 20 years in NRC fuel cycle facility licensing including the MOX facility, medical isotope facilities, and other new and existing fuel cycle facilities
- ▶ Consultant to the fuel cycle industry since 2022
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Advance Act Implementation for Fuel Cycle Facilities

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- ▶ Important to right size and speed up reviews of fuel cycle facility applications (goal should be to reduce review time to under 18 months for new applications and reduce NRC staff review hours based on risk significance of licensing action)
- ▶ Successful licensing of fuel cycle facilities needed to support deployment of advanced light water reactors
- ▶ Leverage previous licensing review experiences from the early 2000's (enrichment facilities, deconversion, and the mixed oxide fuel fabrication facility)
- ▶ Use best practices and lessons learned from previous fuel cycle facility reviews, medical isotopes facilities and advanced reactors
- ▶ Right size the review by recognizing the lower risk profiles of fuel cycle facilities

Steps to improve efficiency and effectiveness of review

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- ▶ Establish and use core project teams for review (similar to what was previously done for enrichment facilities and the Mixed Oxide Fuel Fabrication Facility at the NRC and for advanced non-light water reactors (LWR) in NRR)
- ▶ The level of detail of the application and NRC safety review should be based on clear definitive and consistent expectations
- ▶ Current NRC positions on technical issues related to facilities should closely align with previous historical reviews of similar types of facilities as much as practicable
- ▶ The NRC should use tools such as conducting audits or in-office reviews to foster technical discussions between the NRC and the applicant similar to what is being done for advanced non-LWR reactors in NRR

Steps to improve efficiency and effectiveness of review (continued)

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- ▶ The NRC should compile a summary document that contains previous NRC management issue resolution letters (such as level of detail required in applications) and lessons learned from previous reviews. The NRC should also reaffirm their applicability for new applications
- ▶ The NRC should consider holding workshops with industry to discuss the agency's expectations for new license applications, including the level of detail.
- ▶ The NRC should evaluate whether it can adopt some of the licensing approaches that are currently used for other materials licensees.
- ▶ NRC management must keep NRC staff accountable for the technical review including a) the depth of the review, b) the breadth of the review, c) the scope of the review, and d) the regulatory basis of safety findings.
- ▶ Staff should focus on the most risk significant areas thereby minimizing the expenditure of resources. The goal should be a substantial reduction in need for NRC resources for new facility reviews, since many of the designs and safety related items, including consequences, are similar to previously reviewed and approved fuel cycle facility applications.

Steps to improve efficiency and effectiveness of review (continued)

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- ▶ The NRC should provide regular updates to applicants on both major and minor challenges or questions as they emerge. The NRC should avoid “holding” of concerns or questions until the end of a review to discuss with applicants
- ▶ The NRC should modify the acceptance review process and use tiger team assessments and preapplication reviews as the bases for recommendations to accept the application in a timely manner
- ▶ The NRC should ask more focused requests for additional information - RAs should also consider the level of the design information available at the time of the application and should focus on licensee commitments that can demonstrate compliance. Questions that relate to topics that will be looked at during the construction inspection or operational readiness phase should be avoided as they should not be part of the application review.
- ▶ ACRS reviews are not mandatory for fuel cycle facilities and are up to the discretion of the ACRS. Unless the new application has some unique safety significant feature that is not similar to existing fuel cycle facilities and has a higher risk profile, the review of the applications by ACRS should not be needed to be performed.

Summary

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- ▲ Thanks for the opportunity to provide input
- ▲ Desire more opportunities to provide more detailed suggestions
- ▲ Having more efficient and effective license reviews for fuel cycle facilities is needed to support national clean energy goals.
- ▲ Previous experiences with fuel cycle license reviews and other newer applications should be leveraged
- ▲ The goal for fuel cycle facility reviews should be completion in less than 18 months with significant NRC review resource reductions based on the risk profile of the facilities.