

From: Ross Moore <ross@oklo.com>
Sent: Thursday, June 17, 2021 8:27 PM
To: Mazza, Jan
Cc: Caroline Cochran; Kennedy, William; Reckley, William; Shams, Mohamed; Taylor, Robert
Subject: [External_Sender] Update on Oklo Licensing Topical Reports
Attachments: Oklo Topical Reports - Letter of Intent and Fee Waiver Request.pdf

Jan,

As discussed, I wanted to provide an update on the Oklo licensing topical reports that we are preparing. These topical reports will be submitted as non-proprietary, for use by any reactor designer, and we expect to provide them for review by July 2, 2021.

These topical reports outline the methodologies that Oklo utilizes in accident selection, evaluation of defense-in-depth, and functional classification of structures, systems, and components to support the overall safety analysis and licensing basis for our designs. We believe these topical reports can play a significant role, not just in the continuation of the review of the Aurora COLA, but also to inform the ongoing rulemaking for Part 53 to accommodate a variety of licensing basis development approaches. We have therefore submitted a letter to the CFO to request a fee waiver for these reports. Attached is a courtesy copy of the letter (ML21168A377).

We are open to having conversations prior to submitting the topical reports to discuss their content as well as the value they can provide in supporting the agency's overall effort to create a technology-inclusive, risk-informed, performance-based framework for advanced reactors.

Let me know if you have any questions. Thanks!

Ross

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June 17, 2021

ATTN: Document Control Desk
Ms. Cherish K. Johnson
Chief Financial Officer
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Ms. Johnson,

The purpose of this letter is to inform the U.S. Nuclear Regulatory Commission (NRC) that Oklo Inc. (Oklo) intends to submit two generic topical reports for review and approval, a Maximum Credible Accident methodology topical report and a Performance-based Licensing methodology topical report. These methodologies establish the techniques, including the use of risk information, Oklo utilized for accident selection, evaluation of defense-in-depth, and functional classification of structures, systems, and components in the overall safety analysis and licensing basis development for the Aurora-Idaho National Laboratory (Aurora-INL) combined license application (COLA). These methodologies are both novel and build on the longstanding NRC concept of using information from a “Maximum Credible Accident” represent a philosophical shift in the way these analyses are performed and presented for review to support licensing advanced fission and can play a key role in the ongoing efforts to establish a technology-inclusive, risk-informed performance based, regulatory framework.

In 2019, recognizing the importance of advanced fission in our nation’s energy portfolio and to mitigate the impacts of climate change, Congress enacted the Nuclear Energy Innovation and Modernization Act (NEIMA). NEIMA directed the NRC to re-visit the current framework for licensing nuclear reactors and provide for an efficient, technology-inclusive framework, that allowed for a suite of unique, inherently safe, advanced fission designs be considered. In doing so, NEIMA specified the need for a program to develop the expertise and regulatory processes necessary to allow innovation and commercialization of advanced nuclear reactors.

Over the past year, the NRC has interacted with stakeholders to develop this new, optional rule for advanced reactors, titled Part 53. As part of the abbreviated timeline provided the NRC staff to finalize the rule, NRC staff have engaged early and often with key stakeholders as draft language has been prepared, to ensure comments on the language and their impacts can be wholly considered. Early discussions have centered around the increased reliance of probabilistic risk assessment as an analysis tool in the draft rule language. The draft rule language leverages existing, NRC endorsed, guidance in Regulatory Guide 1.233, “Guidance for a Technology-Inclusive, Risk-Informed, and Performance-Based Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light Water Reactors,” which also focuses heavily on the use of probabilistic risk assessment in the development of the licensing basis.



The discussion surrounding probabilistic risk assessment has resulted in the NRC staff's informal request that, to consider alternative approaches beyond those that are probabilistic risk assessment leading, the NRC needs to understand those alternative approaches in greater detail. Oklo, as part of the licensing basis and application development for its Aurora-INL combined license application, developed methodologies that rely first on deterministic analysis methods, which are then complemented by probabilistic risk assessment in a confirmatory manner. This approach is directly in line with the Commission Policy statement¹ on the "Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities," which states:

"(1) The use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy."

Considering the Aurora-INL combined license application is the only application for an advanced fission reactor currently under review by NRC staff, it is appropriate that these approaches be scoped into the Part 53 rule language.

The purpose of these topical reports is, in part, to outline the novel methodologies employed by Oklo in its safety analysis for the Aurora reactor, as well as demonstrate for understanding these alternative licensing basis approaches, as requested by the NRC staff, and not yet fully considered in the development of the rule language for Part 53. These topical reports will be submitted as generic, non-proprietary licensing topical reports that can be used as a noncommercial public display of alternative approaches, and assist the NRC in its generic regulatory effort to develop a comprehensive framework for advanced reactors.

Oklo therefore requests that the review fees associated with the NRC evaluation of these licensing topical reports be waived pursuant to 170.11 on the basis that the request is to assist in developing the NRC regulatory requirements and associated guidance for a technology-inclusive rule, as directed by Congress, in accordance with 10 CFR 170.11(b). It is Oklo's understanding that the fee waiver would be applicable to the complete NRC review of both the Maximum Credible Accident and Performance-based Licensing methodological topical reports.

The current target date for this submittal is July 2, 2021. Oklo respectfully requests a decision on the request for this fee waiver as soon as practicable to support timely and efficient preparation of these topical reports.

If you have any questions or need any additional information, please contact us at regulatory@oklo.com or (650) 550-0127.

Sincerely,

A handwritten signature in black ink, appearing to read "Ross Moore".

Ross Moore
Director of Regulatory Affairs
Oklo Inc.
Sunnyvale, CA

¹ See "Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities; Final Policy Statement," 60 Fed. Reg. 42622 (Aug. 16, 1995)



CC:

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