

From: Mazza, Jan
Sent: Monday, September 13, 2021 4:38 PM
To: Ross Moore
Cc: Kennedy, William; Lupold, Timothy; Drzewiecki, Timothy; Siwy, Alexandra; Orenak, Michael
Subject: Information on "tabletop" exercises for the Licensing Modernization Project

Hi Ross,

During the public meeting discussion on the Performance-Based Licensing Methodology topical report supplemental information item I.D.3, NRC offered to provide information on the "tabletop" exercises that were done to demonstrate how the Licensing Modernization Project process could be implemented. This information is provided below.

SC-29980-101, Rev. 1, "Modernization of Technical Requirements for Licensing of Advanced Non-Light Water Reactors: Probabilistic Risk Assessment Approach," (OSTI Identifier 1700670) provides examples for the probabilistic approach for modular high temperature gas reactors, the PRISM sodium-cooled fast reactor, and fluoride-salt cooled high temperature reactors. It identifies the need of exposing and evaluating sources of uncertainty in the identification of hazards, initiating events, and accident scenarios.

"Molten Salt Reactor Experiment (MSRE) Case Study Using Risk-Informed, Performance-Based Technical Guidance to Inform Future Licensing for Advanced Non-Light Water Reactors," September 4, 2019 (ADAMS Accession No. ML19249B632) used a combination of techniques to inform a limited selection of licensing basis events (HAZOPs for specific systems used to inform event trees). The report acknowledges that the list of licensing basis events associated with these limited systems is not comprehensive and that this report could serve as input to a preliminary hazard analysis.

"Modernization of Technical Requirements for Licensing of Advanced Non-Light Water Reactors – High Temperature, Gas-Cooled Pebble Bed Reactor Licensing Modernization Project Demonstration," August 2018 (ADAMS Accession No. ML18228A779) stated that the initiating events for the Xe-100 were identified for internal events at full power using the master logic diagram method.

"Modernization of Technical Requirements for Licensing of Advanced Non-Light Water Reactors – PRISM Sodium Fast Reactor Licensing Modernization Project Demonstration," December 2018 (ADAMS Accession No. ML19036A584) incorporates uncertainty in the probabilistic risk assessment. This exercise did not describe the approach used to identify the licensing basis events for the PRISM reactor but references "PRISM Preliminary Safety Information Document," (ADAMS Accession No. ML082880397) which clarifies that the initial basis for the event trees was the set of initiating events developed in the liquid metal reactor base technology program.

If you have any questions or would like to discuss this further, we could do this during one of the upcoming public meetings..

Thanks - Jan

Jan Mazza
Project Manager, Advanced Reactor Licensing Branch

Division of Advanced Reactors and
Non-Power Production and Utilization Facilities
NRC Office of Nuclear Reactor Regulation

301-415-0498

Jan.Mazza@nrc.gov

Hearing Identifier: Oklo_COL_Docs_Public
Email Number: 19

Mail Envelope Properties (SA0PR09MB674616B2CA862163DC930882F3D99)

Subject: Information on "tabletop" exercises for the Licensing Modernization Project
Sent Date: 9/13/2021 4:37:39 PM
Received Date: 9/13/2021 4:37:00 PM
From: Mazza, Jan

Created By: Jan.Mazza@nrc.gov

Recipients:

"Kennedy, William" <William.Kennedy@nrc.gov>
Tracking Status: None
"Lupold, Timothy" <Timothy.Lupold@nrc.gov>
Tracking Status: None
"Drzewiecki, Timothy" <Timothy.Drzewiecki@nrc.gov>
Tracking Status: None
"Siwy, Alexandra" <alexandra.siwy@nrc.gov>
Tracking Status: None
"Orenak, Michael" <Michael.Orenak@nrc.gov>
Tracking Status: None
"Ross Moore" <ross@oklo.com>
Tracking Status: None

Post Office: SA0PR09MB6746.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	2877	9/13/2021 4:37:00 PM

Options

Priority:	Normal
Return Notification:	No
Reply Requested:	No
Sensitivity:	Normal
Expiration Date:	