



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

May 9, 2024

MEMORANDUM TO: Michael Wentzel, Chief  
Advanced Reactor Licensing Branch 2  
Division of Advanced Reactors and Non-power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

FROM: Patrick Boyle, Project Manager *Patrick L Boyle* — Signed by Boyle, Patrick  
Advanced Reactor Licensing Branch 2 on 05/09/24  
Division of Advanced Reactors and Non-power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE MAY 1, 2024, OBSERVATION MEETING  
WITH X-ENERGY, "PRE-APPLICATION MEETING TO DISCUSS  
PROPOSED ANALYTICAL METHODS TOPICAL REPORT"

**Meeting Information:**

Applicant: X-Energy

Docket/Project No.(s): 99902118

Public Meeting Notice Agencywide Documents Access and Management System  
Accession No.: ML24116A023

Applicant Presentation Slides: ML24108A117

Meeting Attendees: See the enclosure for a list of meeting attendees.

CONTACT: Patrick Boyle, NRR/DANU  
(301) 415-3936

**Meeting Summary:**

The U.S. Nuclear Regulatory Commission (NRC) staff conducted the meeting in accordance with NRC Management Directive 3.5, "Attendance at NRC Staff-Sponsored Meetings" ([ML21180A271](#)).

During the meeting, X-Energy presented information on the licensing approach, including regulatory guidance documents. These documents included Regulatory Guide (RG) 1.168, "Verification, Validation, Reviews and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," and Draft Regulatory Guide (DG) 1120, "Transient and Accident Analysis Methods." The NRC staff suggested that the applicant include in the Topical Report (TR) a clear explanation of the purpose and intent of applying RG 1.168 to the development of its analytic methods, and suggested that the applicant may wish to consider referencing the final version of DG-1120, RG 1.203, which was issued in 2005 and constitutes the official NRC staff position on acceptable ways to undertake an evaluation model development and assessment process.

At multiple points during the meeting, both the NRC staff and X-Energy observed that the topic of analytic methods could be much broader than simply those methods used to perform safety analysis. The NRC staff suggested that the applicant consider what scope of analytic methods will require NRC approval and include a clear description of this scope in the incoming submittal.

No regulatory decisions were made as a result of this meeting.

Project No. 99902118

Enclosure:  
List of Meeting Attendees

cc: X-Energy Xenith via GovDelivery

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DATED: MAY 9, 2024

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**NRR-106**

OFFICE	NRR/DANU/UAL2/PM	NRR/DANU/UAL2/BC	NRR/DANU/UAL2/PM
NAME	PBoyle	MWentzel	PBoyle
DATE	05/08/2024	05/09/2024	05/09/2024

**OFFICIAL RECORD COPY**

**LIST OF MEETING ATTENDEES  
FOR THE MAY 1, 2024, OBSERVATION MEETING WITH X-ENERGY,  
PRE-APPLICATION MEETING TO DISCUSS PROPOSED ANALYTICAL METHODS  
TOPICAL REPORT**

May 9, 2024

Name	Organization
<b>In Person Attendees</b>	
Patrick Boyle	U.S. Nuclear Regulatory Commission (NRC)
Ondra Dukes	NRC
Pravin Sawant	NRC
Nathan Hudson	NRC
Paul Mouring	NRC
Michael Dudek	X-Energy
Dov Rhodes	X-Energy
Bradley Reardon	X-Energy
Adam Oler	X-Energy
Stephen Wilson	X-Energy
<b>Teams Attendees</b>	
Daniel Beacon	NRC
Jing Xing	NRC
Ayesha Athar	NRC
Inseok Baek	NRC
Lucas Kyriazidis	NRC
Scott Burnell	NRC
Hossein Esmaili	NRC
Benjamin Parks	NRC
Mathew Gordon	NRC
Andrew Bielen	NRC
Tarek Zaki	NRC
Shawn Campbell	NRC
Nazila Tehrani	NRC
Seker, Volkan	NRC
Pravin Sawant	NRC
Kenneth Armstrong	NRC
Michael Rose	NRC
Wilson Cowherd	X-Energy
Rob Hannan	X-Energy
Mathew Hertel	X-Energy
Kate Lyons	X-Energy
Harry Rhodes	Food-Animal Concerns Trust
Michael Empey	Jensen Hughes
Volkan Seker	University of Michigan
Cody Fretheim	Idaho National Lab (INL)
Kenneth Fossum	INL
Jana Bergman	Curtiss-Wright Corporation
Helene Rhodes	Charles E. Smith Jewish Day School
Sukjoon Kim	Argonne National Laboratory
Dominik Muszynski	None Listed
Yeon-jong Yoo	"
Thomas Ligon	"

Enclosure

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<b>Name</b>	<b>Organization</b>
Andrew Hermosillo	None Listed
Hans Gougar	"
Dr. Nicolas Quintanar	"
Tom Downar	"
Shawn Hanvy	"
Renee	"
Joel	"