



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

June 6, 2022

MEMORANDUM TO: William B. Kennedy, Acting Chief  
Advanced Reactor Licensing Branch  
Division of Advanced Reactors and Non-Power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

FROM: Lucieann Vechioli, Project Manager  
Advanced Reactor Licensing Branch  
Division of Advanced Reactors and Non-Power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

*Lucieann Vechioli Feliciano*

Signed by Vechioli, Lucieann  
on 06/06/22

SUBJECT: SUMMARY OF THE MARCH 17, 2022, PUBLIC MEETING  
BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION  
STAFF AND X ENERGY LLC REGARDING THE XE-100  
PRINCIPAL DESIGN CRITERIA

On March 17, 2022, the U.S. Nuclear Regulatory Commission (NRC) staff held a virtual partially open to the public meeting with representatives from X Energy LLC (X-energy) regarding the Xe-100 reactor design principal design criteria. The meeting notice can be located at Agencywide Documents Access and Management System (ADAMS) Accession No. ML22069A135 and the presentation slides for the open session of the meeting at ML22076A063. The Enclosure provides the list of meeting attendees.

The Xe-100 design approach for the principal design criteria (PDC) is been developed using insights from the Regulatory Guidance (RG) 1.232, "Guidance for developing principal design criteria for non-light water reactors," NEI 18-04, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactors," and NEI 21-07, "Technology Inclusive Guidance for Non-Light Water Reactor Safety Analysis Report: For Applicants Utilizing NEI 18-04 Methodology." The purpose of the meeting was for X-energy to present on their approach and to receive feedback from the NRC staff and address it prior submitting the information as a topical report for review and approval.

CONTACT: Lucieann Vechioli, NRR/DANU  
301-415-6035

The discussion included X-energy's identified cases in which the modular high-temperature gas-cooled reactor design criteria (MHTGR-DC) from RG 1.232 do not align with the Xe-100 design approach. X-energy representatives stated that justification for the safety case of those instances will be provided as needed.

The NRC staff asked questions and provided insight to X-energy representatives during the discussion. The NRC staff mentioned that it is currently developing a draft document for NEI 21-07 that will be out for public comments in the upcoming months. The NRC staff asked about X-energy's approach of having public meetings for every principal design criteria. X-energy responded that it will request meetings on the chapters that it decides early feedback from the NRC staff would be practical.

Concluding thoughts from the NRC staff included that X-energy's approach seems reasonable and that when developing RG 1.232, the NRC staff envisioned a similar approach to the one proposed by X-energy.

X-energy intends to continue to engage with the NRC staff on this and several other topics as part of the pre-application activities for the Xe-100 design. X-energy plans to submit a principal design criteria white paper for the NRC review and subsequently a topical report in the near future.

Project No. 99902071

Enclosure:  
List of Attendees

SUBJECT: SUMMARY OF THE MARCH 17, 2022, PUBLIC MEETING BETWEEN THE  
U.S. NUCLEAR REGULATORY COMMISSION STAFF AND X ENERGY LLC  
REGARDING THE XE-100 PRINCIPAL DESIGN CRITERIA  
DATED: JUNE 6, 2022

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**NRR-052**

<b>OFFICE</b>	NRR/DANU/UAL1/PM	NRR/DANU/UAL1/LA	NRR/DANU/UAL1/BC (A)	NRR/DANU/UAL1/PM
<b>NAME</b>	LVechioli	DGreene	WKennedy	LVechioli
<b>DATE</b>	6/2/2022	6/6/2022	6/6/2022	6/6/2022

**OFFICIAL RECORD COPY**

List of Attendees

Public Meeting between the U.S. Nuclear Regulatory Commission staff and X Energy LLC

Thursday, March 17, 2022

<b>Name</b>	<b>Organization</b>
Ian Jung	U.S. Nuclear Regulatory Commission (NRC)
William Kennedy	NRC
Michelle Hayes	NRC
Michael Orenak	NRC
Lucieann Vechioli	NRC
Boyce Travis	NRC
Steven Lynch	NRC
Eric Oesterle	NRC
Joseph Sebrosky	NRC
Travis Chapman	X Energy LLC (X-energy)
Steve Vaughn	X-energy
Ray Wang	X-energy
Ingrid Nordby	X-energy
Jon Facemire	X-energy
Tom Braudt	X-energy
Brian Froese	X-energy
Matt Hertel	X-energy
Shawn Hanvy	X-energy
Patrick Robinson	X-energy
Paul Loza	X-energy
Maggie Staiger	X-energy
Yvonne Mirowski	X-energy
Charlotte Geiger	X-energy
Kevin Pigg	X-energy
David Alberstein	X-energy
Eddie Grant	X-energy
Neil Haggerty	X-energy
Brian Hallee	X-energy
Don Gregoire	Energy Northwest

Enclosure