



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

February 16, 2022

MEMORANDUM TO: William Kennedy, Acting Chief  
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 02/16/22

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

SUBJECT: SUMMARY OF THE JANUARY 10, 2022, PUBLIC MEETING  
BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION  
STAFF AND X ENERGY LLC REGARDING THE XE-100  
MAINTENANCE STAFFING OPTIMIZATION WHITE PAPER

On January 10, 2022, the U.S. Nuclear Regulatory Commission (NRC) staff held a virtual observation public meeting with representatives from X Energy LLC (X-energy). The purpose of the meeting was for X-energy to provide an overview of their Xe-100 Maintenance Staffing Optimization white paper that was submitted to the NRC on December 28, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21362A751). The meeting notice can be located at ADAMS Accession No. ML21350A168 and the presentation slides under ADAMS Accession No. ML22011A147. The enclosure to this document provides the list of meeting attendees.

The meeting began with an overview of the Xe-100 design and its licensing approach. The discussion was followed by X-energy staff presentation about the approach developed to determine and optimize the maintenance staffing plan for the Xe-100 site. The white paper summarizes the philosophy and strategy developed for the maintenance of the Xe-100 reactor. The methodology was developed by X-energy and the Electric Power Research Institute (EPRI). The time and personnel requirements were assessed through the use of the EPRI Preventive Maintenance Basis Database, EPRI Member experience, and EPRI Subject Matter Experts. X-energy pointed out that the information provided in the white paper is preliminary and subject to change as the design progresses. X-energy will revise and submit other reports as more information becomes available.

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1/29/2019 X-energy provided the status of the ARPA-E Gemina Project regarding using a Digital Twin tools system to reduce fixed operation and maintenance costs. X-energy also discussed their maintenance strategy which was determined using the criticality ranking created from the Xe-100 equipment reliability process, that identifies the importance, value, and impact of all the structures, systems and components of the Xe-100 reactor design.

During the discussion, X-energy staff explained the different roles of the onsite and offsite personnel that will be performing maintenance at the Xe-100 plants. The discussion included examples and rationale of the maintenance staffing analysis process.

The meeting included an open discussion where the NRC staff asked questions about the content in the report. One of the questions raised was about the type of controls that will be in place to monitor tasks and confirm that they are done correctly. X-energy and EPRI explained that they are currently working on defining this process and will provide the information to the NRC once it is available.

At the end of the meeting, the NRC staff informed X-energy that it will develop informal observations on the white paper. The schedule for developing the feedback will be provided to X-energy within a month of the meeting.

Enclosure:  
List of Attendees

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U.S. NUCLEAR REGULATORY COMMISSION STAFF AND X ENERGY LLC  
REGARDING THE XE-100 MAINTENANCE STAFFING OPTIMIZATION WHITE  
PAPER DATED: FEBRUARY 16, 2022

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**ADAMS Accession No.: ML22021B664****NRC-001**

OFFICE	NRR/DANU/UARL/PM	NRR/DANU/UARL/LA	NRR/DANU/UARL/BC (A)	NRR/DANU/UARL/PM
NAME	LVechioli	CSmith (SLent for)	WKennedy	LVechioli
DATE	1/26/2022	2/14/2022	2/16/2022	2/16/2022

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Public Meeting between the U.S. Nuclear Regulatory Commission staff and X Energy LLC  
January 10, 2022

List of Attendees

<b>Name</b>	<b>Organization</b>
Brian Green	U.S. Nuclear Regulatory Commission (NRC)
William Kennedy	NRC
Justin Vazquez	NRC
Kenneth Erwin	NRC
Lucieann Vechioli	NRC
Brian Tindell	NRC
Maurin Scheetz	NRC
Julie Ezell	NRC
Niav Hughes	NRC
John Hughey	NRC
Kerri Kavanaugh	NRC
Aaron Armstrong	NRC
Ian Davis	NRC
Travis Chapman	X Energy LLC (X-energy)
Ingrid Nordby	X-energy
Tony Qualantone	X-energy
Tom Braudt	X-energy
Jon Facemire	X-energy
Raymond Wang	X-energy
Charlotte Geiger	X-energy
Steve Vaughn	X-energy
Andrew Bridges	X-energy
Tony Qualantone	X-energy
Greg Crannick	X-energy
Paul Hippely	X-energy
James Park	X-energy
Alex Brazalovich	X-energy
Andrew Rodgers	X-energy
Clevin Canales	X-energy
Vicki Morgan	X-energy
Shawn Hanvy	X-energy
Dan Williamson	X-energy (Contractor)
Eddie Grant	X-energy (Contractor)
David Rackiewicz	X-energy (Contractor)
Pareez Golub	Sargent & Lundy
Maury Pressburger	Sargent & Lundy
David Daigle	Tennessee Valley Authority

Enclosure

Ian Gifford	Terrapower
Curt Nehrkorn	ARPA-E Contractor Booz/Allen And Hamilton
William Cohen	Member of the public