



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

January 10, 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: Jorge Hernandez, Project Manager **/RA/**
Advanced Reactor Licensing Branch 2
Division of Advanced Reactors and Non-power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE OCTOBER 11, 2023, PUBLIC MEETING
WITH X ENERGY, LLC. (X-ENERGY), "SPENT FUEL
MANAGEMENT WHITE PAPER" (EPID NO. L-2018-LRM-0076)

Meeting Information:

Applicant: X ENERGY, LLC. (X-energy)

Docket/Project No.(s): 99902071

Public Meeting Notice Agencywide Documents Access and Management System (ADAMS)
Accession No.: ML23268A054

Applicant Presentation Slides ADAMS Accession No.: ML23258A105

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

CONTACT: Jorge Hernandez, NRR/DANU
301-287-9096

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](#)).

The purpose of the meeting was for X-energy to present their proposed plan for spent fuel management, which will be submitted for NRC review in a white paper.

The X-energy staff's presentation discussed the following topics:

- Design overview of the Tri-structural Isotropic (TRISO) particle fuel and fuel cycle facilities.
- Xe-100 functional arrangement for spent fuel transfer and storage facilities.
- Regulatory approach for spent fuel management during operations and post-operating license storage. X-energy explained that NUREG-2215, "Standard Review Plan for Spent Fuel Dry Storage Systems and Facilities," provides guidelines for design and concept of operations that are more applicable to the Xe-100 dry intermediate spent fuel storage facility than the guidance provided in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," for wet spent fuel storage facilities.
- Compliance strategy options for criticality accident requirements under 10 CFR 50.68.
- Contents of the proposed white paper.

The NRC staff asked the following questions:

- Are the fuel pebbles individually traceable? X-energy indicated they are not.
- Has X-energy considered using the NUREG-0800 guidelines along with NUREG-2215? X-energy indicated most significant aspects of NUREG-0800 are concerned with maintaining safe water level, which are not applicable to the Xe-100 design.
- Will there be details of instrumentation and controls in the white paper? X-energy indicated that only as an overview and that additional details will be included in a future licensing topical report.

In addition, during the closed portion of the meeting, NRC and X-energy staff discussed proprietary details pertaining to the design of the spent fuel facilities.

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

Project No. 99902071

Enclosure: List of Meeting Attendees

cc: X-energy Xe-100 via GovDelivery

SUBJECT: SUMMARY OF THE NOVEMBER 9, 2023, PUBLIC MEETING WITH X ENERGY, LLC. (X-ENERGY), "SPENT FUEL MANAGEMENT WHITE PAPER" (EPID NO. L-2018-LRM-0076) DATED: JAN 10, 2024

DISTRIBUTION:

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ADAMS Accession Number: ML24004A021

NRR-001

OFFICE	NRR/DANU/UAL2/PM	NRR/DANU/UAL2/BC	NRR/DANU/UAL2/PM
NAME	JHernandez	MWentzel	JHernandez
DATE	01 / 09 / 2024	01 / 10 / 2024	01 / 10 / 2024

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**List of Meeting Attendees
For the October 11, 2023 Public Meeting With X Energy, LLC. (X-Energy), “Spent Fuel
Management White Paper”**

Open Meeting

Name	Organization
Adrian Muniz	U.S. Nuclear Regulatory Commission (NRC)
Bernie White	NRC
Dan Beacon	NRC
Greg Oberson	NRC
Ian Jung	NRC
Jorge Hernandez Munoz	NRC
Joseph Ashcraft	NRC
Kristina Banovac	NRC
Lance Kingsbury	NRC
Michael Wentzel	NRC
Ondra Dukes	NRC
AJ Clore	X-energy
Brandon Hartle	X-energy
Eddie Grant	X-energy
Jessica Maddocks	X-energy
Maggie Staiger	X-energy
Mark Natale	X-energy
Sarah Gibboney	X-energy
Steve Vaughn	X-energy
Carl Friesen	U.S. Department of Energy
Rasheed Auguste	U.S. Department of Energy
Timothy Stuhldreher	U.S. Department of Energy
Charlyne Smith	Breakthrough Institute
Nicole Schlichting	Kairos Power
Timothy Polich	RoPower
Edwin Lyman	Union of Concerned Scientists
Carlyn Greene	UxC, LLC
Dominik Muszynski	Member of the Public
Toru Nakatsuka	Member of the Public

Closed Meeting

Name	Organization
Adrian Muniz	NRC
Bernie White	NRC
Dan Beacon	NRC
Greg Oberson	NRC
Ian Jung	NRC
Kristina Banovac	NRC
Michael Wentzel	NRC
Ondra Dukes	NRC
AJ Clore	X-energy
Jessica Maddocks	X-energy
Maggie Staiger	X-energy

Name	Organization
Mark Natale	X-energy
Sarah Gibboney	X-energy
Steve Vaughn	X-energy
Carl Friesen	U.S. Department of Energy
Rasheed Auguste	U.S. Department of Energy
Timothy Stuhldreher	U.S. Department of Energy