



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

February 29, 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 DECEMBER 7, 2023, PUBLIC MEETING  
WITH X ENERGY, LLC. (X-ENERGY), "XE-100 PSAR CHAPTER  
2 "SITE CHARACTERISTICS" AND ENVIRONMENTAL  
REPORT" (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.: ML23333A056

Applicant Presentation Slides ADAMS Accession No.: ML23325A241

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 this meeting was for X-energy to describe (1) the Preliminary Safety Analysis Report (PSAR) external flooding and seismic hazards analysis activities, and (2) the scope of groundwater and meteorological data sets to support PSAR Chapter 2 and Environmental Report content related to the proposed construction permit (CP) application for an Xe-100 high temperature gas reactor at the Dow Chemical Company (Dow) Seadrift site, in Seadrift, Texas.

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

- Description of a site feasibility study performed by X-energy.
- Description of the scope that X-energy plans to cover in selected sections of PSAR Chapter 2 related to hydrology, external flooding events, and tsunami hazards, ice hazards, geology, seismology, and geotechnical engineering.

The NRC staff made the following questions/observations (including X-energy's responses):

- Clarify what is meant by "supplement to the initial submittal" in the X-energy's presentation materials. X-energy indicated that it means subsequent to its CP application.
- Clarify if X-energy intends to deviate from the regulatory guidance listed in Slide 8 of its presentation materials. X-energy stated that the intent is to follow existing guidance and that Chapter 2 of the PSAR will look like a typical Chapter 2 that follows NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition."
- Will the site be backfilled? How is this consideration accounted for liquefaction and other geotechnical studies? X-energy indicated that the site grading will have an effect on liquefaction but that this risk is eliminated by locating the safety-related scope below grade. The NRC staff indicated liquefaction will be a focus area during the detailed review of the construction permit application.
- The NRC staff noted that there is DANU-ISG-2022-02 Advanced Reactor Content of Application Project Chapter 2, "Site Information" Draft Interim Staff Guidance (ML22048B541) related to the time frame for the meteorological datasets. X-energy should look into the acceptance criteria for less than 2 years of data in the draft guidance.
- Is there a plan to characterize groundwater with monitoring data for the conceptual model transport pathways? X-energy indicated that for the initial submittal there will not be sufficient data, but that supplements will include additional data to support the conclusion of no impact to the reactor building.
- The NRC staff observed that the Chapter 2 section structure is different from the structure presented in the Advanced Reactor Content of Application interim staff guidance (DANU-ISG-2022-02). X-energy should explain these differences when submitting the licensing application.

During the closed portion of the meeting, X-energy discussed its licensing strategy, geotechnical and groundwater well installation schedule, meteorological data sources and design basis hazard levels for external flooding and seismic hazards.

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 DECEMBER 7, 2023, PUBLIC MEETING WITH X ENERGY, LLC. (X-ENERGY), "XE-100 PSAR CHAPTER 2 "SITE CHARACTERISTICS" AND ENVIRONMENTAL REPORT" (EPID NO. L-2018-LRM-0076) DATED: FEBRUARY 29, 2024

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**ADAMS Accession Number: ML24060A001**

**NRR-001**

OFFICE	NRR/DANU/UAL2/PM	NRR/DANU/UAL2/BC	NRR/DANU/UAL2/PM
NAME	JHernandez	MWentzel	JHernandez
DATE	02 / 29 / 2024	02 / 29 / 2024	02 / 29 / 2024

**OFFICIAL RECORD COPY**

**List of Meeting Attendees  
For the December 7, 2023 Public Meeting With X Energy, LLC. (X-Energy), “Xe-100 PSAR  
Chapter 2 “Site Characteristics” and Environmental Report”**

**Open Meeting**

<b>Name</b>	<b>Organization</b>
Jorge Hernandez Munoz	U.S. Nuclear Regulatory Commission (NRC)
Ian Tseng	NRC
Amitava Ghosh	NRC
Donald Palmrose	NRC
Ian Jung	NRC
Joseph Giacinto	NRC
Brian Glowacki	NRC
Jenise Thompson	NRC
Michael Wentzel	NRC
Patricia Vokoun	NRC
Rosalynn Wang	NRC
Ondra Dukes	NRC
Jason White	NRC
Jose Pires	NRC
Mihaela Biro	NRC
Madelyn Nagel	NRC
Nebiyu Tiruneh	NRC
Charles O'Connor	Dow
Bobby Kunkle	X-energy
Dominik Muszynski	X-energy
Jessa Hultgren	X-energy
Jessica Maddocks	X-energy
Jon Facemire	X-energy
Maggie Staiger	X-energy
Milton Gorden	X-energy
Steve Vaughn	X-energy
CM Launi	X-energy (contractor)
David Nielson	X-energy (contractor)
Greg Boswell	X-energy (contractor)
James Starnes	X-energy (contractor)
Jeffrey Mann	X-energy (contractor)
Jessica Howe	X-energy (contractor)
Joshua Bickett	X-energy (contractor)
Matthew Kyper	X-energy (contractor)
Mehrdad Salehi	X-energy (contractor)
Prater, Erwin T	X-energy (contractor)
Russell Light	X-energy (contractor)
Sandra Jannetty	X-energy (contractor)
Tim Glover	X-energy (contractor)
Valentina Montalvo	X-energy (contractor)
William Elzinga	X-energy (contractor)
Rachel Turney	Enercon
Tim Basham	Enercon

<b>Name</b>	<b>Organization</b>
Woody Wodrich	Enercon
Stephan Moen	Energy Northwest
Jan Mazza	Holtec
Jean-Philippe Ohanessian	Holtec
Steven Mitchell	Holtec
Gary Becker	NuScale
Rebecka Bence	Pacific Northwest National Laboratory
Irv Mermelstein	Terrapower

### Closed Meeting

<b>Name</b>	<b>Organization</b>
Jorge Hernandez Munoz	U.S. Nuclear Regulatory Commission (NRC)
Amitava Ghosh	NRC
Ian Jung	NRC
Joseph Giacinto	NRC
Brian Glowacki	NRC
Jenise Thompson	NRC
Michael Wentzel	NRC
Patricia Vokoun	NRC
Rosalynn Wang	NRC
Ondra Dukes	NRC
Jason White	NRC
Madelyn Nagel	NRC
Nebiyu Tiruneh	NRC
Bobby Kunkle	X-energy
Jessa Hultgren	X-energy
Jessica Maddocks	X-energy
Jon Facemire	X-energy
Maggie Staiger	X-energy
Mark Feltner	X-energy
Milton Gorden	X-energy
Steve Vaughn	X-energy
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