Xe-100 PSAR Chapter 2 “Site Characteristics” and Environmental Report

Licensing Team
X Energy, LLC

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Department of Energy Acknowledgement and Disclaimer

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Agenda & Objectives

Agenda:

- Introductions/Opening Remarks
- Background and Context
- Chapter 2 “Site Characteristics”
  - Flooding and Hydrology
  - Seismic and Geology
  - Meteorology
  - Groundwater
- Questions/Closing Remarks
- Closed Portion

Objectives:

- Describe the Preliminary Safety Analysis Report (PSAR) Chapter 2 external flooding and seismic hazard analysis activities that are necessary and sufficient for a Construction Permits Application (CPA)
- Describe the scope of groundwater and meteorological data sets to support PSAR Chapter 2 and Environmental Report (ER) content
- Achieve a common understanding of how the PSAR Chapter 2 and ER content meets applicable regulations and guidance

Background and Context

- The Xe-100 design considers, and is informed by, external hazards based on a representative set of site locations across the U.S.
- External hazards at the Dow Seadrift site were evaluated in early 2023 as part of a Site Feasibility Assessment to support a single plot selection from four potential options
- The Site Feasibility Assessment:
  - Incorporated publicly available information from nearby locations that are well-characterized from an external hazard perspective (i.e., South Texas Project, Victoria Station)
  - Integrated results of ongoing groundwater monitoring programs from Dow Seadrift Operations (SDO)
  - Integrated results of geotechnical studies on adjacent land parcels
- The current Xe-100 preliminary design is expected to maintain sufficient design margin to site-specific external design basis hazard levels (DBHLs) that will be characterized by activities supporting PSAR Chapter 2 “Site Characteristics” development

Purpose

- Achieve a common understanding with regards to the necessary and sufficient information needed to support a CPA in accordance with 10 CFR Part 50, Part 51, and Part 100

  - Focus on external flooding and seismic hazard assessments and groundwater/ meteorological data
  - The full site characterization of external hazards and groundwater/meteorological data will be provided as a Supplement to the initial submittal

PSAR Chapter 2.4 – Flooding and Hydrology

energy

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.1 “Hydrologic Description”
  - Regulations: 10 CFR 100.20(c), Xe-100 PDC 2
  - Guidance: RG 1.27, 1.29, 1.59, 1.102, DANU-ISG-2022-02
  - X-energy will provide a summary description of the site location and major hydrological features in the site vicinity:
    - Surface and groundwater characteristics using historical data
    - Identification of hydrological items requiring special plant design bases
    - Discussion of current or likely future surface and groundwater uses that may impact plant safety
  - Publicly available South Texas Project (STP) and Victoria County Station (VCS) data will be leveraged to inform this section

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.2 “Floods”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d), Xe-100 PDC 2
  - Guidance: RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - This section identifies historical flooding and potential flooding mechanisms (both individual and combined flood-producing phenomena) for consideration in plant flood design bases. Discussion of local intense precipitation (LIP) is also included in this section.
    - A simple and bounding qualitative assessment will be provided for LIP. LIP in the area surrounding the site is expected to have low impact on the site flooding hazard level due to proposed site grading and Reactor Cavity Cooling System inlet and outlet elevations
    - United States Geological Survey (USGS) and United States Army Corps of Engineers (USACE) historical flooding info will be summarized
  - Site grading activities will limit the impact of LIP
  - A two-dimensional (2D) analysis will be provided in the Supplement to model site features and direct watershed draining into the site under LIP

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.3 “Probable Maximum Flood (PMF) on Streams and Rivers”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d), Xe-100 PDC 2
  - Guidance: RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - Probable maximum precipitation (PMP) will be developed from data available from the National Weather Services and other sources. PMP will be used to develop probable flood flow at the site and assess overall watershed response to maximum flooding events.
    - Probable maximum flood (PMF) on Guadalupe River due to probable maximum precipitation (PMP) is performed as part of Victoria County Station (VCS) site analysis, which is publicly available and will be used as part of this section. Proper justification will be provided on how the San Antonio River is an input to the combined PMF.
    - PMF with PMP center of storm focused on San Antonio River will be included with Supplement for NRC review after the CPA submittal

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.4 “Potential Dam Failures”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d), Xe-100 PDC 2
  - Guidance: RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - Dams located upstream of the site will be identified and the potential dynamic impact of dam breaks on the project site will be assessed
    - Dam failure of sites on Guadalupe River watershed are performed as part of Victoria County Station (VCS) site analysis and will be used here
    - Additional dam failure analysis for dams located on San Antonio River will be included with Supplement for NRC review after the CPA submittal
    - Dam failures affecting the Guadalupe River watershed are expected to have more of an impact on the PMF compared to the San Antonio River watershed

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.5 “Probable Maximum Surge and Seiche Flooding”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d), Xe-100 PDC 2
  - Guidance: RG 1.27, 1.29, 1.59, 1.221, 1.102, 4.7, NUREG/CR-7046, DANU-ISG-2022-02, Section 2.5
    - As per NUREG/CR-7046, and RG 1.59, Revision 2, National Weather Service (NWS) 23 will be used to establish probable maximum hurricane (PMH) parameters, including track angles, landfall, forward speed, radius of maximum wind, etc.
    - Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model from National Oceanic and Atmospheric Administration (NOAA) will be used to estimate storm surge at the site
    - The ADvanced CIRCulation (ADCIRC) storm surge model will be used to further analyze PMH tracks that are screened out from SLOSH as highest. Simulating WAves Nearshore (SWAN) model will then be combined with ADCIRC to establish waves for track that resulted in highest surge. These will be included with Supplement for NRC review after the CPA submittal

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.6 “Tsunami Hazards”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d), Xe-100 PDC 2
  - Guidance: RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - A simple and bounding qualitative assessment of the effects of tsunami flood-causing mechanisms will be performed in this section to show that tsunami hazards will have a negligible impact to potential water levels at the project site
  - The qualitative assessment will be based on a review of existing analysis of the Gulf of Mexico, Atlantic Ocean, and historical records that are publicly available, including data from South Texas Project (STP) and Victoria County Station (VCS)
  - Additional site-specific tsunami hazard evaluations will be included with Supplement for NRC review after the CPA submittal

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.7 “Ice Hazards”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d), Xe-100 PDC-2
  - Guidance: RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - For PSAR, a simple and bounding qualitative assessment will be performed to show that ice effect hazards will have a negligible impact to potential water levels at the project site
    - The assessment will include:
      - A review of the history of icing on local waterways and contributing watercourses to determine the potential for ice jams that may impact the site
      - A review of relevant publicly available data from STP and VCS
  - If deemed necessary, additional hydraulic modeling will be performed to evaluate impact of ice jams/dams to the flooding at the site and will be provided as supplement to NRC after CPA

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.8 “Cooling Water Canals and Reservoirs”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d)
  - Guidance: RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - A bounding qualitative assessment will be performed to show that cooling water canals and reservoirs will have a negligible impact to potential water levels at the project site
    - Project Long Mott does not utilize cooling water canals or reservoirs to support safety-related plant equipment
    - Low flow conditions within local waterways will not have a significant impact on safety-significant plant equipment

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.9 “Channel Migration or Diversion”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d)
  - Guidance: NUREG/CR-7046, RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - A bounding qualitative assessment will be performed to show that channel migration and diversion will have a negligible impact to potential water levels at the project site. This assessment relies on review of publicly available aerial photos and maps of nearby waterbodies.
    - Project Long Mott does not use cooling water supplied from local channels or other water bodies to support safety-related plant equipment
    - Stream channel diversion and migration toward the site will be evaluated for flooding impacts

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.10 “Flooding Protection Requirements”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d)
  - Guidance: NUREG/CR-7046, RG 1.27, 1.29, 1.59, 1.102, 4.7, DANU-ISG-2022-02, Section 2.5
  - For PSAR, permanent design features/barriers and manual contingencies to erect barriers will be discussed qualitatively at a high-level
    - The proposed site elevation is expected to be raised to support flooding protection
    - The Reactor Cavity Cooling System (RCCS) inlets/outlets will be placed at a height above ground level to adequately minimize flooding-related impacts

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.11 “Low Water Considerations”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d)
  - Guidance: RG 1.27, 1.29, DANU-ISG-2022-02, Section 2.5
  - A bounding qualitative assessment will be performed to demonstrate that Low Water Considerations will not have an impact on the Ultimate Heat Sink (UHS)
  - Qualitative statements will be supported by the RCCS passive air-cooling to the environment

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.13 “Accidental Releases of Radioactive Liquid Effluents in Ground and Surface Waters”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d)
  - Guidance: RG 1.113, DANU-ISG-2022-02, Section 2.5, NUREG/CR-5512, ASTMs (E1689, D5609, D5610, D5880)
  - Items that will be provided in the PSAR include:
    - An accidental release study identifying: the nature of release and In-situ Conditions (constituents, hydrogeologic data, groundwater model from 2.4.12), site-specific soil absorption coefficients (Kd values), and bounding Conditions (constituent attenuation, velocities, transport parameters)
    - Accidental releases calculations for vadose zone soil and groundwater fate and transport impacts, and a predictive model for transport and disposition of released radionuclides. The results of the calculations and model will be based in part on the comprehensiveness of the groundwater model at the time of PSAR submittal.
  - Items that will be provided with Supplement for NRC review include:
    - The calculations and fate and transport model will be updated/revised to incorporate the final hydrogeologic investigation data and groundwater model
    - The Supplement should confirm the calculation results and modeling information presented in the PSAR

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.14 “Technical Specifications and Emergency Operation Requirements”
  - Regulations: 10 CFR 50.34, 10 CFR 50.36, 10 CFR 100.20(c), 10 CFR 100.23(d)
  - Guidance: RG 1.29, 1.59, 1.102, DANU-ISG-2022-02, Section 2.5
  - A simple and high-level qualitative assessment will be provided.
    - This section is not required for the CPA
    - Xe-100 Technical Specifications are preliminary and Emergency Operating Procedures (EOPs) are currently under development

PSAR Chapter 2.5 – Seismic and Geology

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Proposed PSAR Scope – Chapter 2.5 Geology, Seismology, and Geotechnical Engineering

- Section 2.5.1 “Basic Geologic and Seismic Information”
  - Regulations: 10 CFR 100.23(c), NUREG-2213, 10 CFR 50 Appendix S
  - Guidance: RG 1.208, 4.7, DANU-ISG-2022-02, Section 2.6
  - PSAR Section 2.5.1 will be written to the extent possible with some site-specific geology/geotechnical data with the goal of providing a simple and bounding geologic and seismic description of the project site
  - Items that will be provided in the PSAR include:
    - The regional and area geology subsections will be based on a review of publicly available literature and references
    - The site-specific subsection will utilize site-specific data as it becomes available. The geotechnical field investigation (soil borings, SCPTs, test pits, and geophysical testing) will be sequenced to collect and present data from across the site. Boring logs, mapping, and cross sections will be provided for the data collected prior to the PSAR submittal. Laboratory testing will be performed as the soil samples become available and incorporated into the PSAR.
  - Items that will be provided with Supplement for NRC review include:
    - The site-specific subsection will be updated/revised to reflect the remaining geotechnical investigation data, including final boring logs, results for laboratory and geophysical testing, and final cross sections
    - The Supplement should confirm the geologic and seismic information presented in the PSAR

Proposed PSAR Scope – Chapter 2.5 Geology, Seismology, and Geotechnical Engineering

- Section 2.5.2 “Vibratory Ground Motion”
  - Regulations: 10 CFR 100.23(c), 10 CFR 50 Appendix S
  - Guidance: RG 1.132, 1.208, 4.7, 1.60, 1.138, 1.198, DANU-ISG-2022-02, Section 2.6
  - PSAR Section 2.5.2 will provide a bounding assessment for vibratory ground motion at the project site. The envelope of values used for design of Xe-100 plant Structures, Systems, and Components (SSCs) bound the project site values with significant margin based on USGS data, available Victoria County Station data, and limited site-specific geology/geotechnical data.
  - As such, final site-specific geotechnical data will not be provided until the Supplement, which will either demonstrate or correct the initial submittal’s position that the site-specific vibratory ground motion fits within the Xe-100 SSC design response spectrum
  - The Central and Eastern United States Seismic Source Characterization model (CEUS SSC, NUREG-2115) and the Next Generation Attenuation for Central and Eastern North America (NGA East, Goulet et al., 2018; RIL 2020-11) are the starting-point for modeling seismic hazards at the site

Proposed PSAR Scope – Chapter 2.5 Geology, Seismology, and Geotechnical Engineering

- Section 2.5.2 “Vibratory Ground Motion” (continued)
  - Items that will be provided in the PSAR include:
    - Section 2.5.2.1 will describe the seismicity reported to 200 mi (320 km) of the site. This will include earthquakes in the CEUS SSC (NUREG-2115) earthquake catalog updated to include events from 1/1/2009 to present. Aftershocks will be identified and removed using the same methodology as in NUREG-2115, and the resulting records of mainshocks post-2008 will be combined with the pre-2008 records from CEUS SSC. Earthquakes caused by petroleum production activities will be identified and considered separately.
    - Section 2.5.2.2 will summarize the NUREG-2115 and NGA-East models and discuss data, models, and methods that became available after the publication of each study
    - Section 2.5.2.3 will discuss patterns of observed seismicity and the correlation between earthquakes and geologic structures
  - Items that will be provided with Supplement for NRC review include:
    - Section 2.5.2.4 describing the seismic hazard model, which will incorporate updates (if necessary) to the CEUS SSC and NGA East models
    - Section 2.5.2.5 describing the site response analyses and the development of site amplification functions for the local site conditions
    - Section 2.5.2.6 describing the application of Approach 3 (NUREG/CR-6728) for the calculation of the site-specific horizontal and vertical GMRS

Proposed PSAR Scope – Chapter 2.5 Geology, Seismology, and Geotechnical Engineering

- Section 2.5.3 “Surface Deformation”
  - Regulations: 10 CFR 100.23(c), 10 CFR 100.23(d)(2), 10 CFR 50 Appendix S
  - Guidance: RG 1.208, 4.7, DANU-ISG-2022-02, Section 2.6
  - PSAR Section 2.5.3 will provide a bounding assessment for surface deformation at the project site
    - The potential for tectonic and non-tectonic deformation at the site will be evaluated using available geological, geophysical, and seismological data and published studies
    - The evaluation will include an analysis of the correlation between historical earthquakes reported within 25 miles (40 km) of the site, with capable tectonic structures that could extend to within 5 miles (8 km) of the site, and an evaluation of the age of the most recent movement
    - Any capable tectonic source identified within 5 miles (8 km) radius of the site will be further evaluated to determine if there is sufficient information to fully characterize the source for inclusion in the seismic hazard model
  - No Supplemental information is expected

Proposed PSAR Scope – Chapter 2.5 Geology, Seismology, and Geotechnical Engineering

- Section 2.5.4 “Stability of Subsurface Materials and Foundations”
  - Regulations: 10 CFR 50.55a(a)(1), 10 CFR 50 Appendix B, 10 CFR 50 Appendix S, 10 CFR 100.23(c)
  - Guidance: RG 1.27, 1.28, 1.132, 1.208, 1.138, 1.198, DANU-ISG-2022-02, Section 2.6
  - PSAR Section 2.5.4 will provide a bounding assessment for stability of subsurface materials and foundations at the project site based on some geotechnical data
  - The PSAR will be submitted prior to the completion of geotechnical exploration and testing. As such, the PSAR will include a discussion of site geology based on literature. Detailed analysis compliant with the guidance will be presented in the supplemental information.

Proposed PSAR Scope – Chapter 2.5 Geology, Seismology, and Geotechnical Engineering

- Section 2.5.5 “Stability of Slopes”
  - Regulations: 10 CFR 50.55a(a)(1), 10 CFR 50 Appendix B, 10 CFR 50 Appendix S, 10 CFR 100.23
  - Guidance: RG 1.27, 1.28, 1.132, 1.208, 1.138, 1.198, DANU-ISG-2022-02, Section 2.6.
  - PSAR Section 2.5.5 will provide a bounding assessment for stability of slopes at the project site.
    - Growth faults are expected to be addressed in section 2.5.3. Due to minimal raising of the site grade during construction, the likelihood for areas of slope instability at the project site is expected to be minimal.
    - Since site specific geotechnical data will not be available for the PSAR, we will develop conservative soil parameters based on other sites and report bounding slopes and slope heights. This evaluation will consider static and seismic conditions.
    - Upon completion of the field work, laboratory testing, and further evaluation, a supplement will be developed to validate or correct the conservative soil parameters considered in the PSAR. At this time, the other key requirements for Section 2.5.5 will be presented

PSAR and ER - Meteorology

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Proposed PSAR and ER Scope

- PSAR Ch. 2.3 “Meteorology” and ER Ch. 2.7 “Meteorology and Air Quality”
  - Regulations: 10 CFR 20, 10 CFR 50 Appendix E, Section IV.E.2, 10 CFR 50.47(b), 10 CFR 50.34(a), 10 CFR Part 51, 10 CFR 100.20(c)(2), 10 CFR 100.21(d)
  - Guidance: RG 1.76, 1.27, 1.221, 1.23, 4.2, 4.7, NUREG-1555, DANU-ISG-2022-02, Section 2.4
  - On-site meteorological tower data will not be available for initial CPA submittal, however X-energy plans to build a meteorological tower that meets the requirements of Regulatory Guide 1.23, Revision 1, March 2007 to be the primary source of meteorological data
    - On-site meteorological tower installation is planned in 2024. Two years of on-site data will be provided once collected and will be used to confirm that the publicly available meteorological data from STP, Victoria (KVCT), and Palacios (KPSX) to adequately bound the on-site data

Proposed PSAR and ER Scope

- PSAR Ch. 2.3 “Meteorology” and ER Ch. 2.7 “Meteorology and Air Quality” (continued)
  - Meteorological data from the South Texas Project (STP) Nuclear Generating Station (NGS) Tower, the Victoria National Weather Service (NWS) Station (station identifier KVCT), Calhoun County-Port Lavaca Airport (station identifier KPKV), Palacios-R.B. Trull Municipal Airport (KPSX), and Seadrift, TX (SDRT2) will be used to develop sections 2.3.1 “Regional Climatology” and 2.3.2 “Local Meteorology”
    - Measurements are taken at 10 meters (m) (32.8 feet [ft.]) and 60 m (196.9 ft.) above ground level (AGL)
    - Measurements include wind speed, wind direction, temperature, relative humidity, air pressure, and precipitation
  - Publicly available meteorological data from the Victoria National Weather Service (NWS) Station (station identifier KVCT), Calhoun County-Port Lavaca Airport (station identifier KPKV), Palacios-R.B. Trull Municipal Airport (KPSX), and Seadrift, TX (SDRT2) will be used to develop sections 2.3.1 “Regional Climatology” and 2.3.2 “Local Meteorology”
  - Short and long-term atmospheric and meteorological sections of the PSAR are developed using the STP NGS Tower and Victoria NWS Station (KVCT) data

PSAR and ER – Groundwater

energy

Objectives for Groundwater Well Plan Development

- Regulations: 10 CFR 50.55a(a)(1), 10 CFR 50 Appendix B, 10 CFR 50 Appendix S, 10 CFR Part 51, 10 CFR 100.23
- Guidance: RG 1.27, 1.28, 1.132, 1.208, 1.138, 1.198, 4.2, 4.7, DANU-ISG-2022-02, Section 2.6.

1. Spatial configuration of the well array (vertical and horizontal placement) that properly allows characterization of appropriate water-bearing geologic formations
2. Support data needs per RG 4.2/NUREG 1555 for groundwater and soil physical parameters and groundwater water quality parameters
3. Establishment of upgradient wells to act as monitoring locations for the potential constituent migration from the Project Long Mott area, and as background data for future construction and operation of the Xe-100 facility
4. Establishment of downgradient wells to facilitate monitoring of construction and operational effects
5. Support for documentation of temporal variation in groundwater conditions
6. Provide appropriate data for calculation of parameters for PSAR Chapter 2

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.12 “Groundwater”
  - Regulations: 10 CFR 100.20(c), 10 CFR 100.23(d), 10 CFR Part 50.55a
  - Guidance: RG 1.27, 1.29, DANU-ISG-2022-02, Section 2.5
  - A bounding qualitative assessment will be performed and is expected to demonstrate that groundwater effects will have a negligible impact on Reactor Building (RB) structural integrity and a negligible impact on systems contained inside the RB required to maintain core geometry
    - A regional groundwater study identifying sources of groundwater and estimate potential availability and capacity to be used at the site. Data used to assist with the characterization of the site groundwater and evaluate the potential impact from the site to off-site groundwater use.
    - A qualitative assessment based on existing groundwater data from USGS and supplemented with on-site aquifer data collected from strategically-placed monitoring and pumping test wells. Assessment components include: a literature review and field investigation, evaluation of hydraulic conductivity for select site aquifers using slug test methodology, and evaluation of aquifer transmissivity, storage coefficient and hydraulic conductivity characteristics, collected from aquifer pumping tests.
    - A site-specific groundwater model developed to simulate site groundwater flow for both pre- and post-construction. The model will include model geometry, layering, boundary conditions, and spatial distribution of hydraulic/hydrogeologic parameters, designed as a steady-state flow model representing long term average flow at the site. The model detail will be limited to the data available at the time of PSAR submittal.

Proposed PSAR Scope – Chapter 2.4 Hydrologic Engineering

- Section 2.4.12 “Groundwater” (continued)
  - Items that will be provided with the Supplement for NRC review include:
    - The results of the qualitative assessment and groundwater model will be updated and revised to incorporate the remaining investigation data, including water level data for various aquifers final characteristics
    - The Supplement should confirm the previous groundwater characterization and modeling information presented in the PSAR

Proposed ER Scope

- Section 3.3 “Plant Water Use”
  - Regulations: 10 CFR Part 51
  - Guidance: RG 4.2, 4.7, NUREG-1555
  - The Xe-100 design will not rely on site groundwater as a water source for the project, the requirement to evaluate the environmental impacts of groundwater use is not applicable
    - The project will rely on surface water withdrawn from the Guadalupe River Basin via an existing intake structure for the Dow SDO plant

Questions & Closing Remarks

Closed Portion

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Topics

- Licensing Strategy and Schedule
  - [[ ]]P
- Geotechnical and Groundwater Well Installation Schedule
  - [[ ]]P
- Meteorological Data Sources
- External Flooding DBHL
- Seismic DBHL

Licensing Strategy Schedule [[

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Licensing Strategy Schedule [[

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Licensing Strategy Schedule [[

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Geotechnical and Groundwater Sampling Schedule

- Groundwater Sampling Schedule:
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- Geotechnical Schedule:
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Groundwater Well Locations

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PSAR and ER Meteorological Data Sources

- South Texas Project (STP)
  - Raw hourly meteorological data are not publicly available
  - Seasonal joint wind direction/speed/Pasquill stability joint frequency distributions (JFDs) are publicly available in effluent release reports provided to the NRC
  - Seasonal JFDs are compiled into annual JFDs for input into dose calculations requiring JFDs
- Victoria Regional Airport (KVCT)
  - Raw meteorological data are publicly available
  - [[

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  - Resulting hourly data with Pasquill stability classifications can be used in short-term dose calculations requiring hourly input data

External Flooding DBHL – Control Heat Removal

- Reactor Cavity Cooling System (RCCS) Flood Protection:
  - Passive, once-through natural convection air-cooled system
  - RCCS air inlets/outlets placed at elevation approximately [[

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Seismic DBHL – Maintain Core Geometry

- Safety-related (SR) Civil Structural Response to Seismic Events:
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