Haskell Environmental Report

Pre-application discussion with the NRC

INTRODUCTION

Purpose

- To review Last Energy's Haskell project in Texas
- To receive feedback as it pertains to our environmental report

INTRODUCTION

PWR-20 Design Highlights

PWR generation III+ nuclear technology

80 MW thermal/20 MW electric with standard temperatures, pressures, and fuel enrichment.

Fully modular

Leveraging fully factory built design to deliver superior quality assurance and control.

Safe by design

Fully passive safety systems with no operator actions in accident scenarios.

Limited environmental impact

Building footprint < 1/3 acre, no water dependency due to air cooling, and no effluent.

INTRODUCTION

Proven Technologies

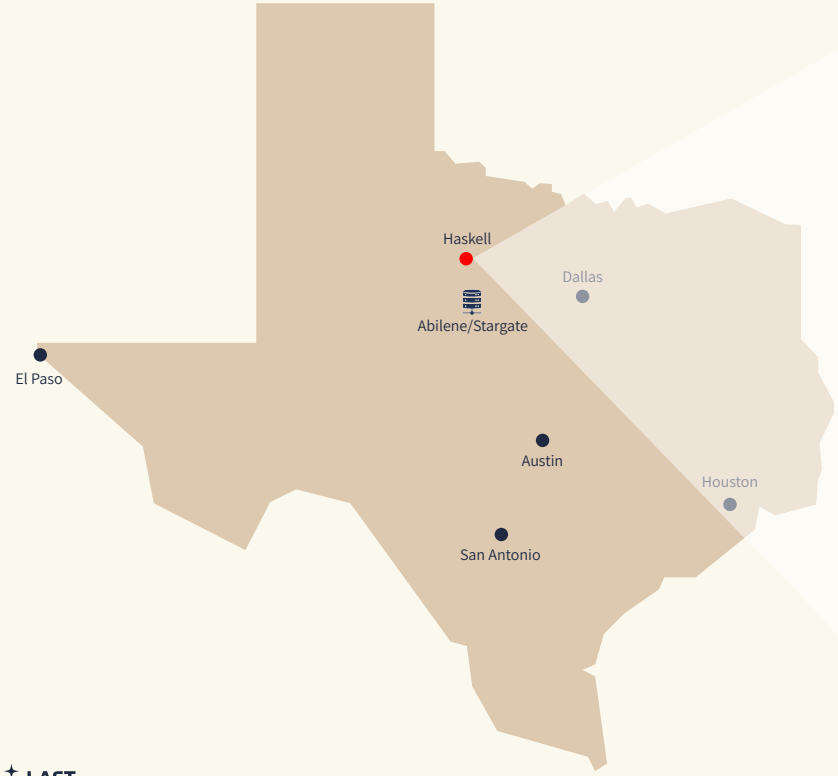
Reactor Type	Pressurized water reactor
Electrical/Thermal Capacity	~20 MWe/~80 MWth
Reactor Coolant	Light water
Heat Sink	Air cooled
Primary Circulation	Forced circulation
Fuel Type/Assembly Array	UO2 pellet / 17x17 square array
Fuel Enrichment	<4.95%
Design Life	42 years

INTRODUCTION

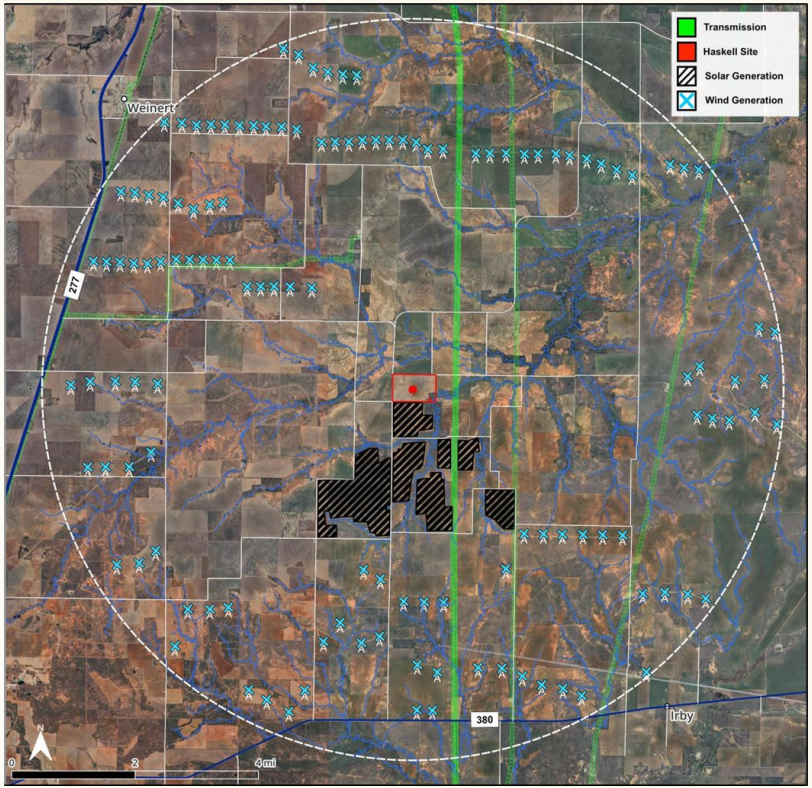
Metal Containment

INTRODUCTION

Haskell County, Texas



Haskell Site Vicinity



Source: Homeland Infrastructure Foundation Level Data (HIFLD)

Plot Profile (1/2)

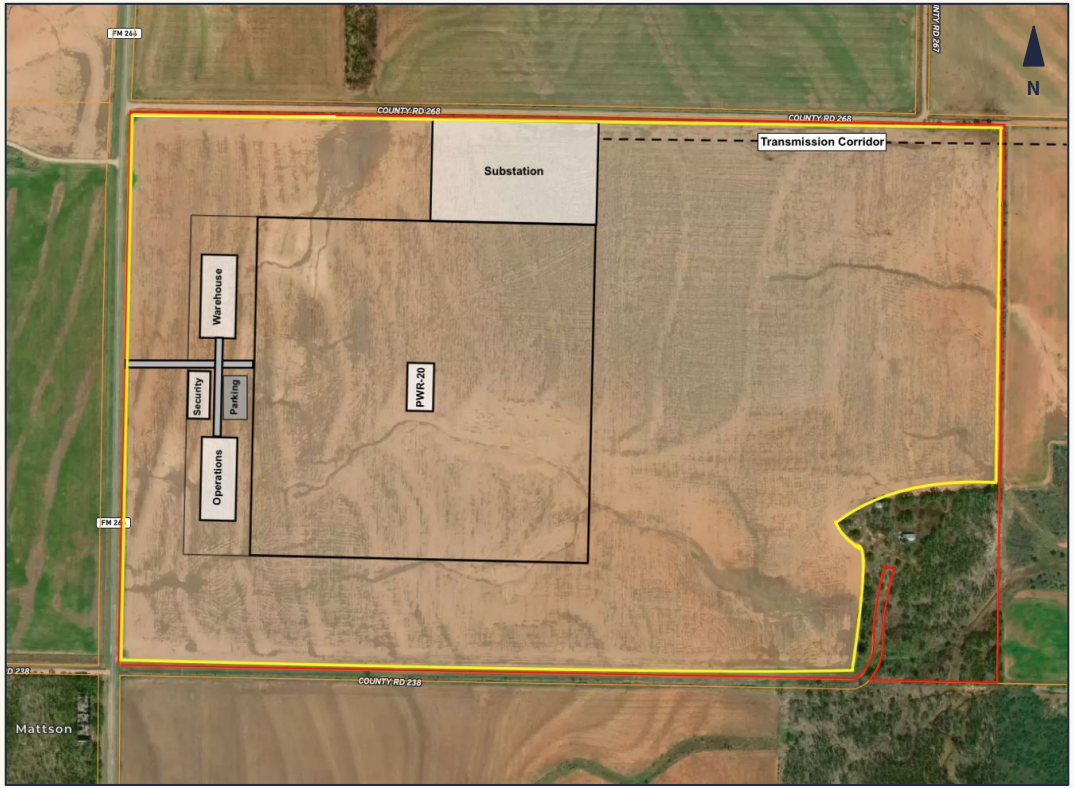
Source: HCR Realty

Plot Profile (2/2)

Source: Last Energy

Site Control & Layout

Site Boundary
Property Line



Source: Last Energy

Environmental Impact

ENVIRONMENTAL IMPACT

Residential Receptors

Source: Texas Historical Commission; US Census

Visual

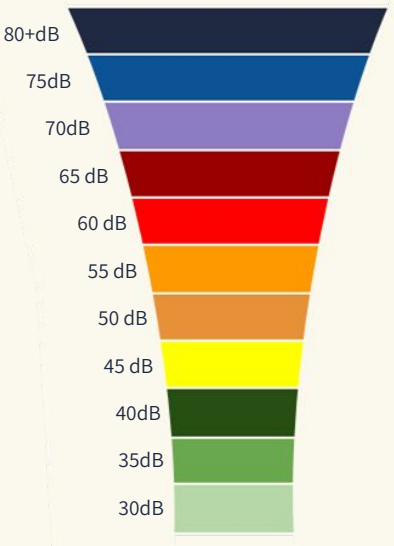
Source: Last Energy

Ecology

Source: HCR Realty, Texas Parks and Wildlife

ENVIRONMENTAL IMPACT

Noise



Power tools

Busy restaurant

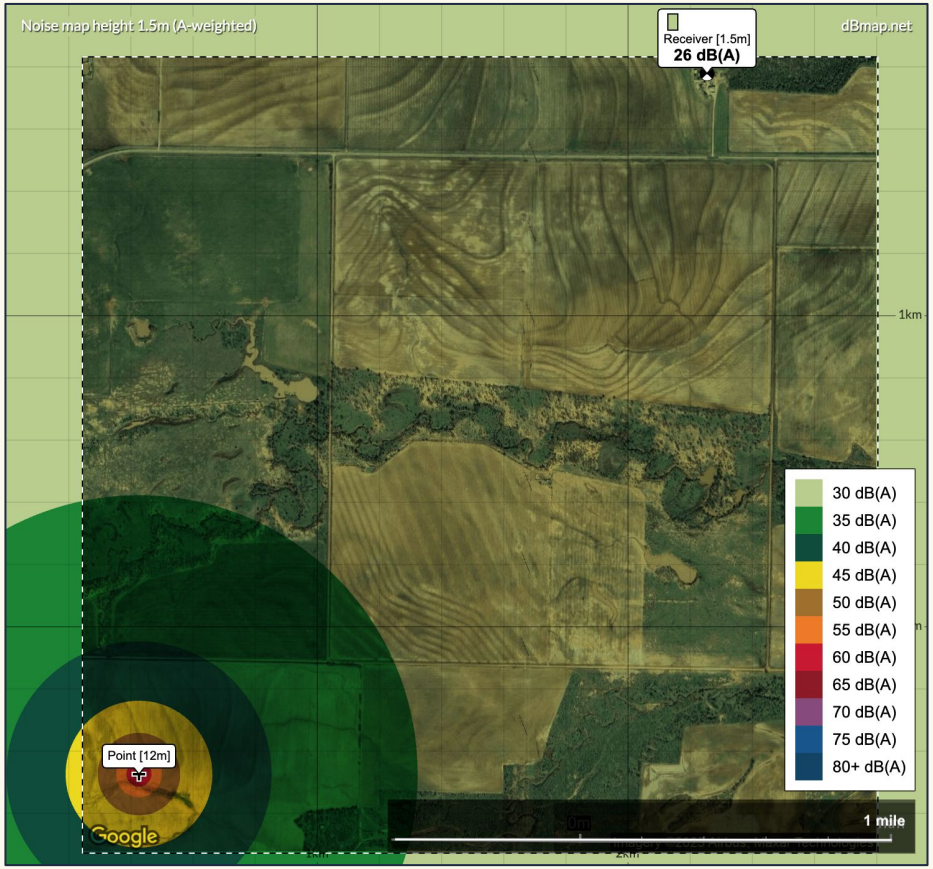
City street

Normal conversation

PWR-20 at site boundary

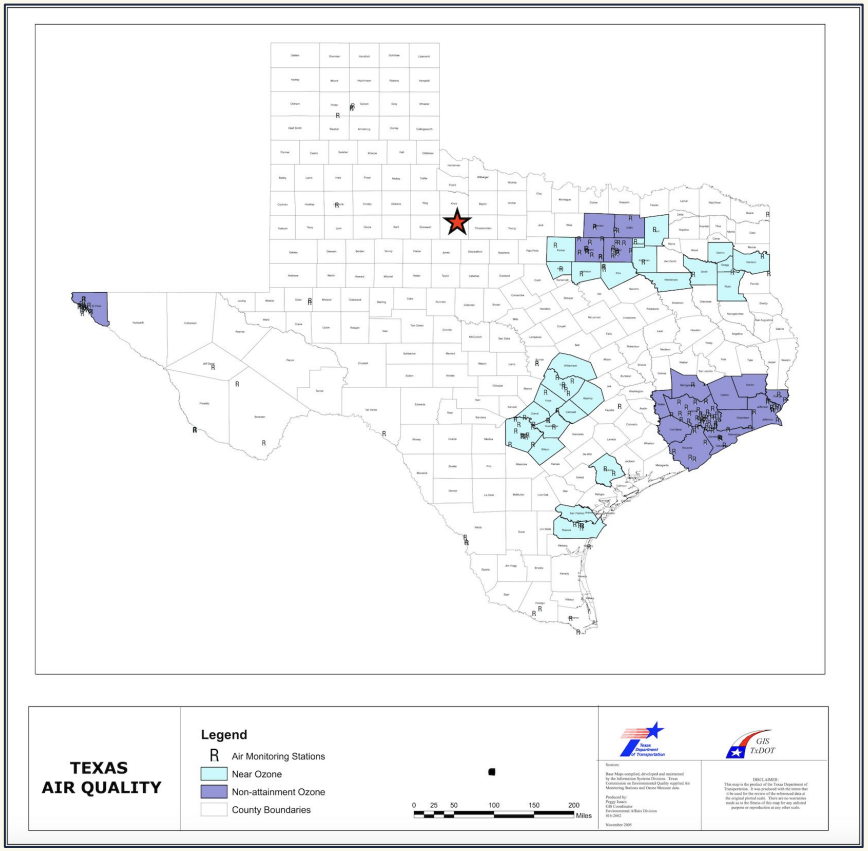
Quiet bedroom

PWR-20 at receptor



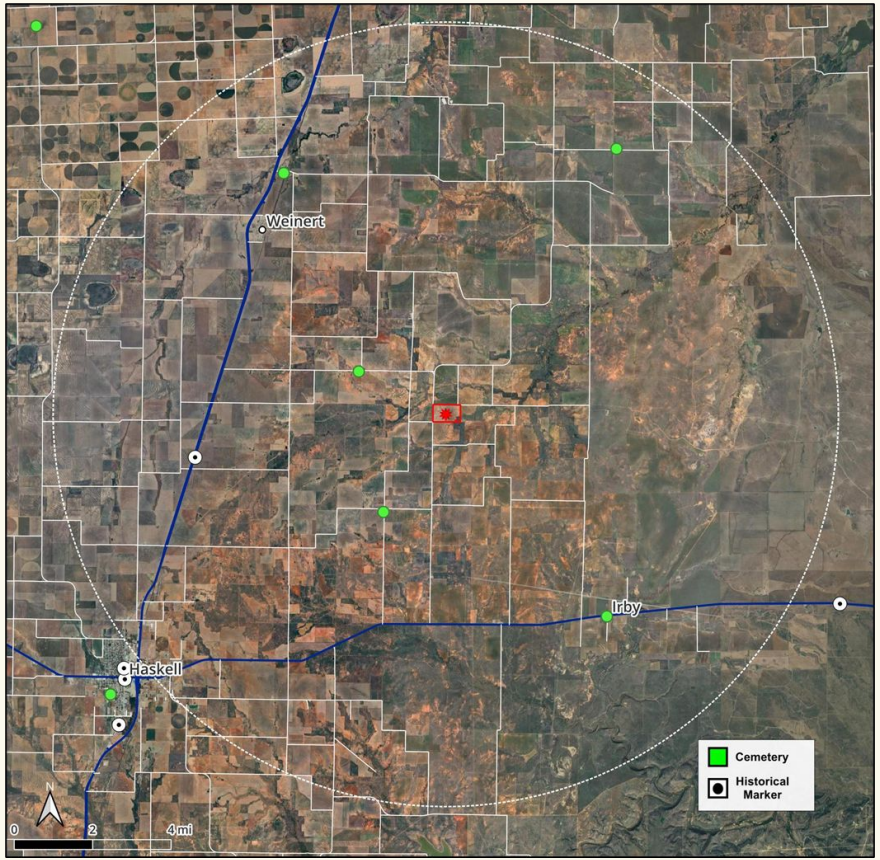
Source: NoiseTools

Air Quality



Source: Texas Department of Transport, Attainment and Nonattainment Areas

Historical and Cultural Resources



Source: Texas Historical Commission

ENVIRONMENTAL IMPACT

Transmission Corridor

Source: US Geological Survey (USGS); Homeland Infrastructure Foundation Level Data (HIFLD)

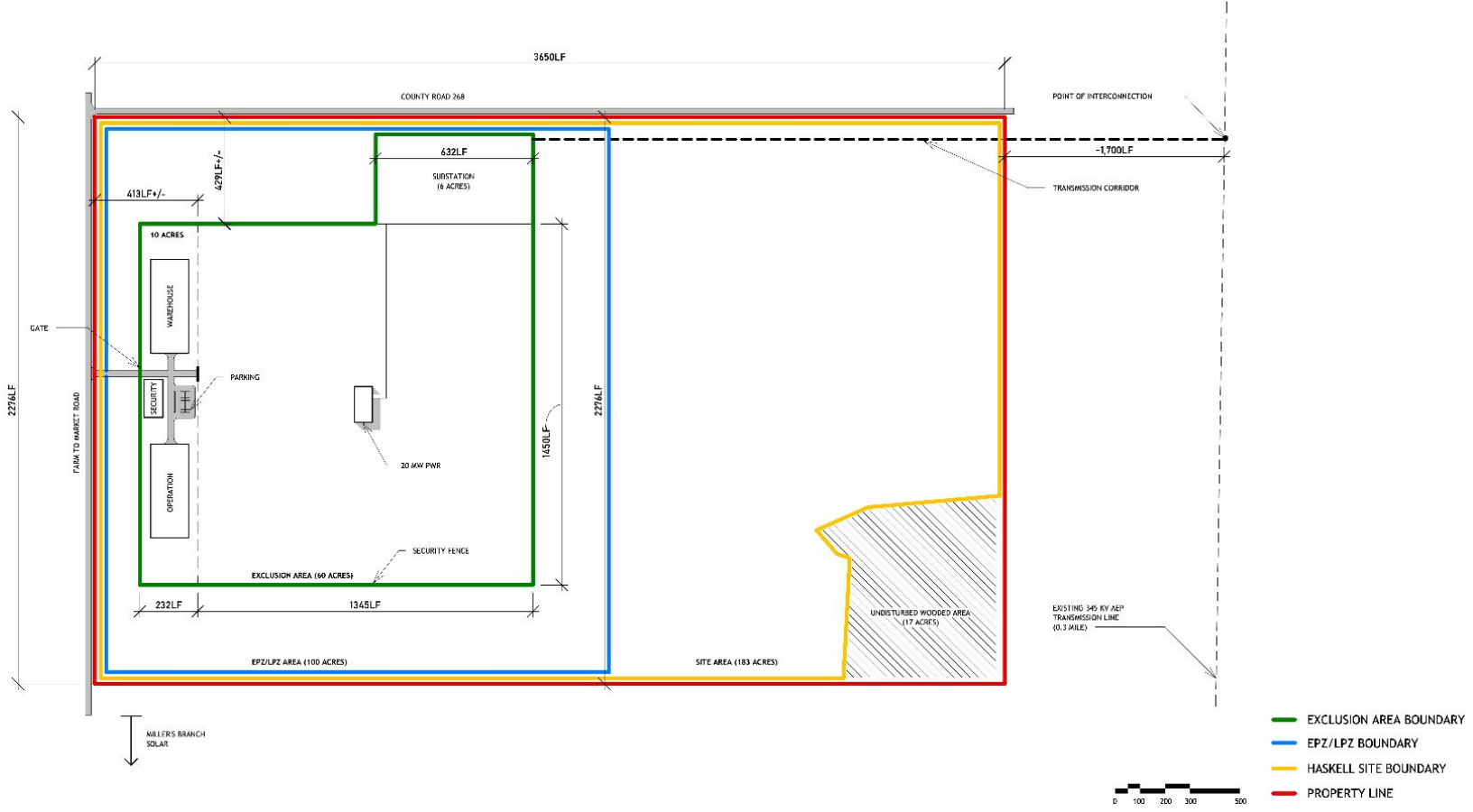
Demography

DEMOGRAPHY

Plant Parameter Envelope

Demography	PWR-20 Design Minimum	Haskell, TX Site-Specific
Exclusion Area Boundary (EAB)	164 ft	630 ft
Low Population Zone (LPZ) / Emergency Planning Zone (EPZ)	164 ft	960 ft
Population Center Distance	219 ft[1] (1 mile)[2]	43 mi (Abilene)

1 Equation from 10 CFR 100.21(b): EAB * 1.33
2 The greater of either 10 CFR 100.21 (b) or Reg guide 4.7



JURISDICTION: Haskell County
PARCEL ID: R03017
ADDRESS: 747 COUNTY ROAD 206,
HASKELL, TX 79521-9319
AREA: 200 ACRES (8,712,000 sqft)

LAST ENERGY
www.lastenergy.com +1 (202) 630-6611
1923 Vermont Ave NW Washington, DC 20001

NO.	ISSUANCE	DATE

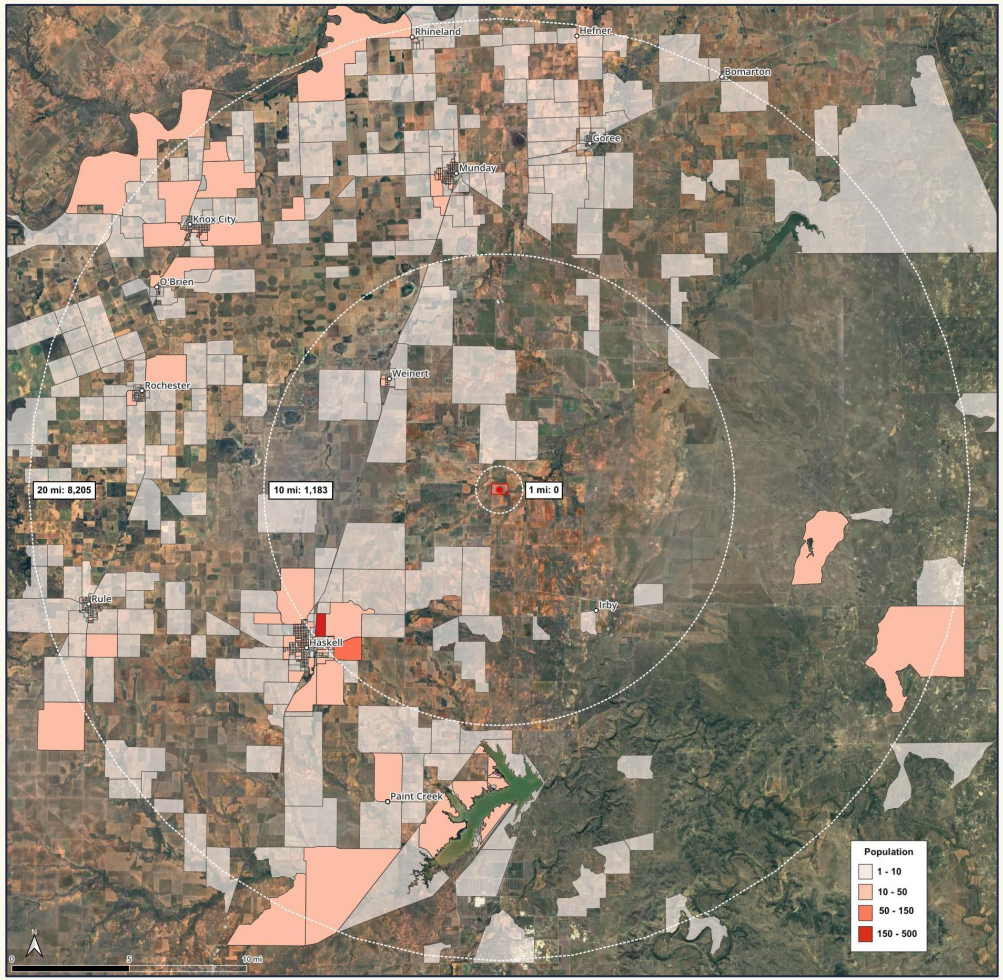
PLANT VERSION:	Building Name
INITIAL DATE:	Issue Date
DRAWN BY:	
CHECKED BY:	Checker
SCALE:	1" = 400'-0"

HASKELL SITE

A106

DEMOGRAPHY

Population Density



Source: 2020 US Census Blocks

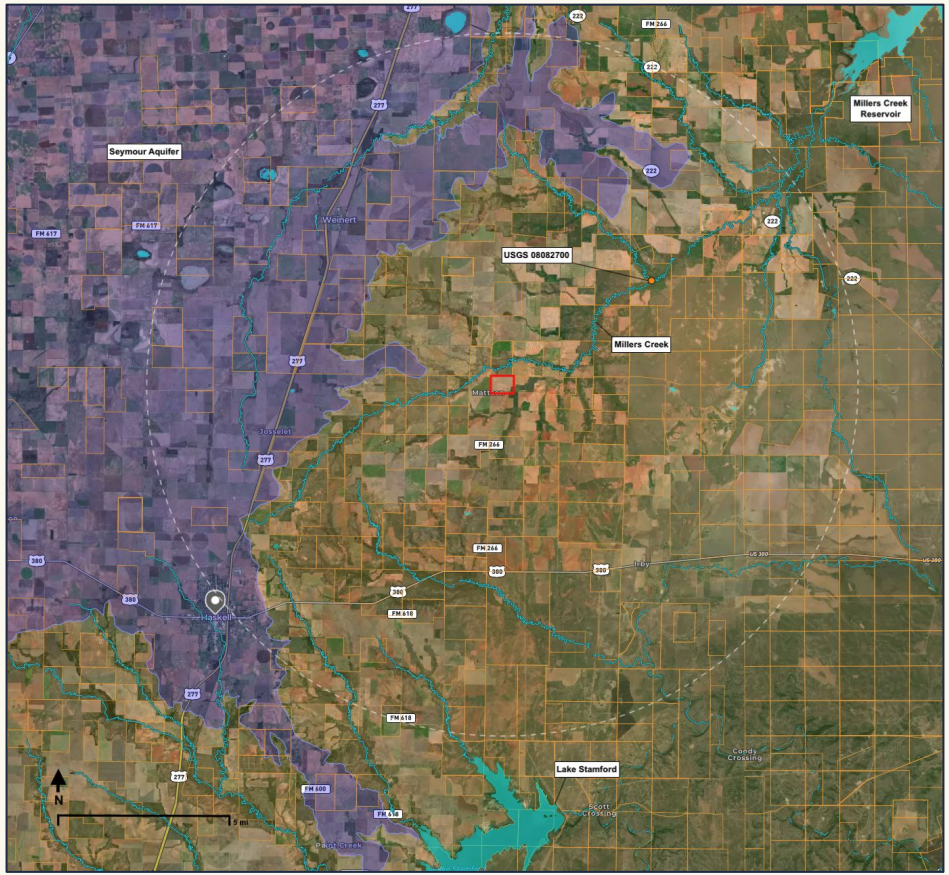
Meteorology & Hydrology

Plant Parameter Envelope

Meteorology	PWR-20 Bounding Value	Haskell, TX Site-Specific Values
Maximum Dry Bulb (0% humidity) Temperature	140°F	115°F
Maximum Rainfall Rate (inches per hour)	19 in	5 in
Inches of snowpack (48-hour maximum winter precipitation)	104 in	21 in[1]
Max wind speed (Tornado)	230 mph[2]	230 mph[2]

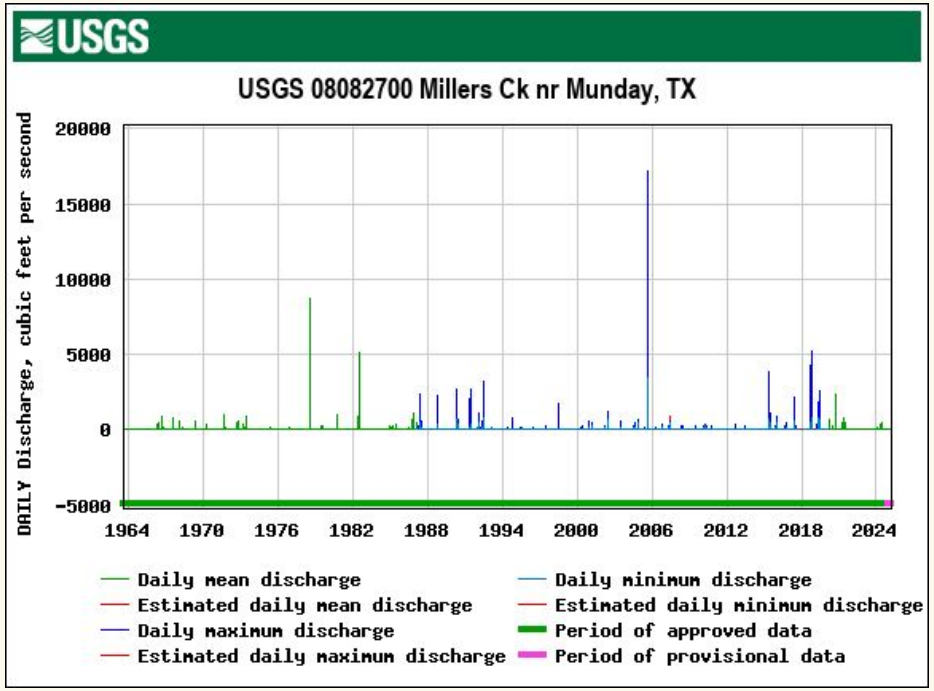
1 NOAA Hydrometeorological Report (HMR) 53 Probable Maximum Precipitation
2 Based on Reg. Guide 1.76 “Design-Basis Tornado”, Haskell is in “Tornado Intensity Region 1”, true bounding value likely higher

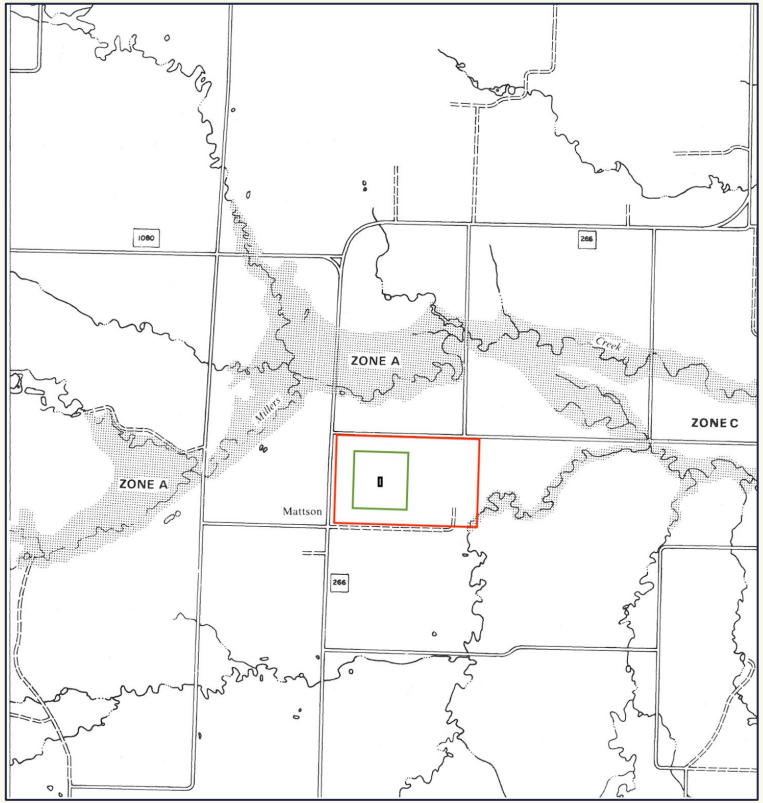
Water



Source: US Geological Survey

Flooding



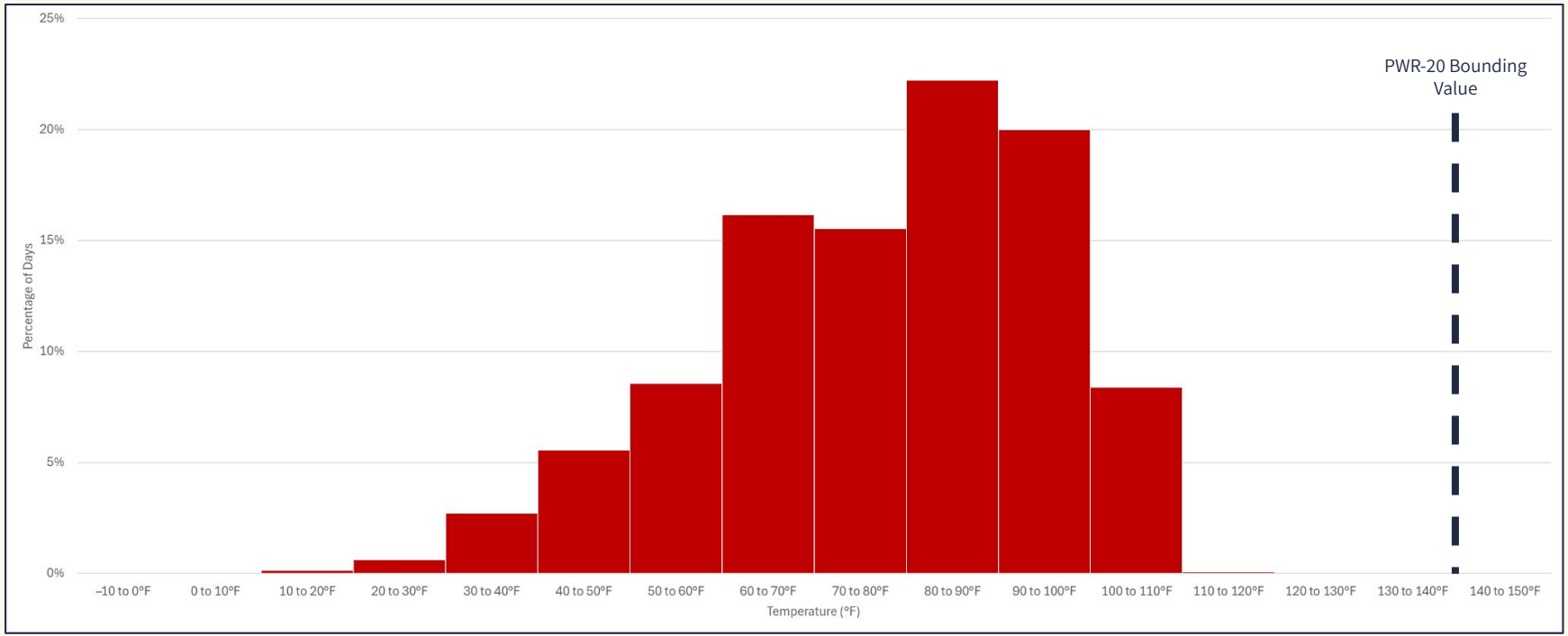


Source: US Geological Survey, Federal Emergency Management Agency

No Wetlands

Source: US Geological Survey

Daily High Temperatures, 1900–2025

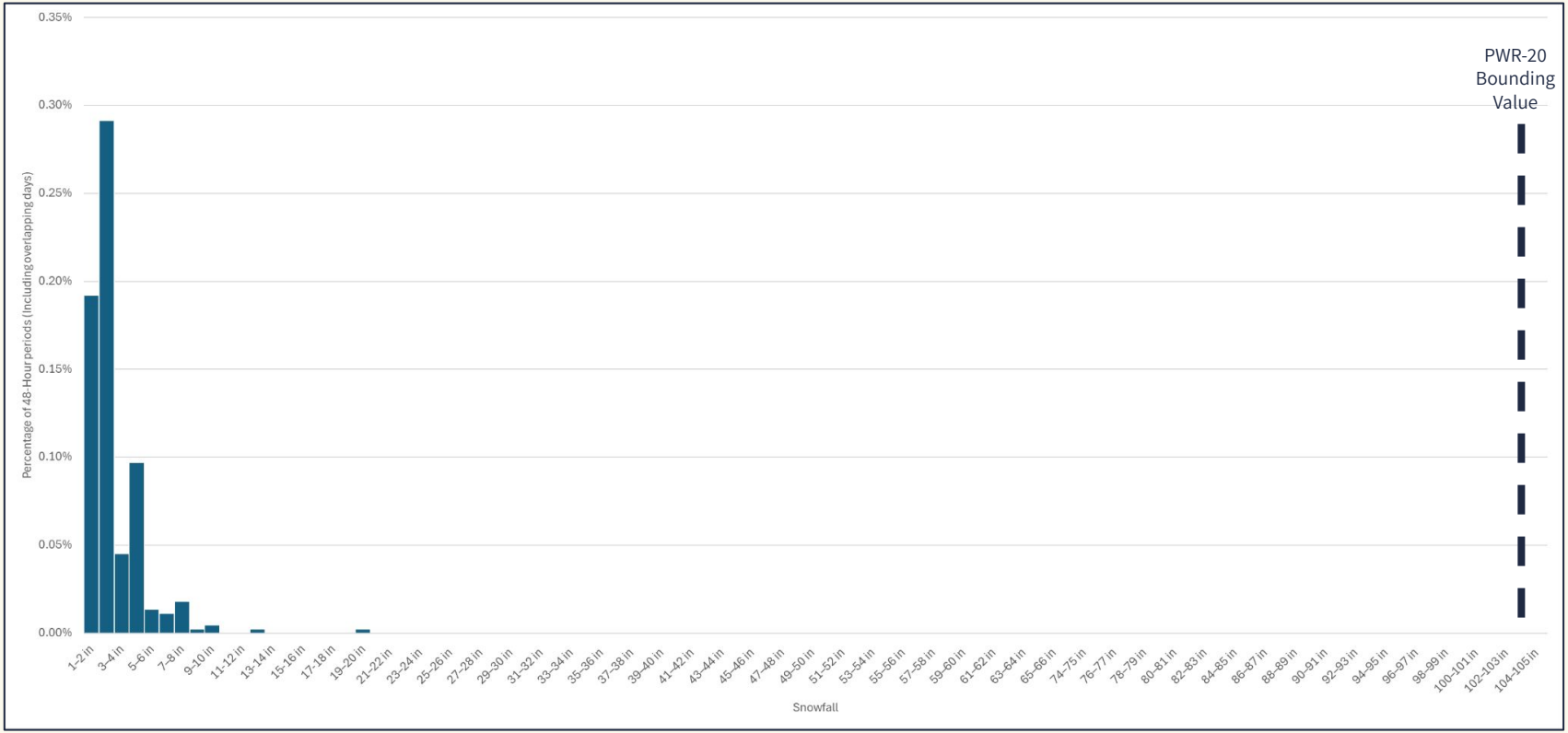


Source: NOAA National Climatic Data Center

24-Hour Rainfall, 1900–2025

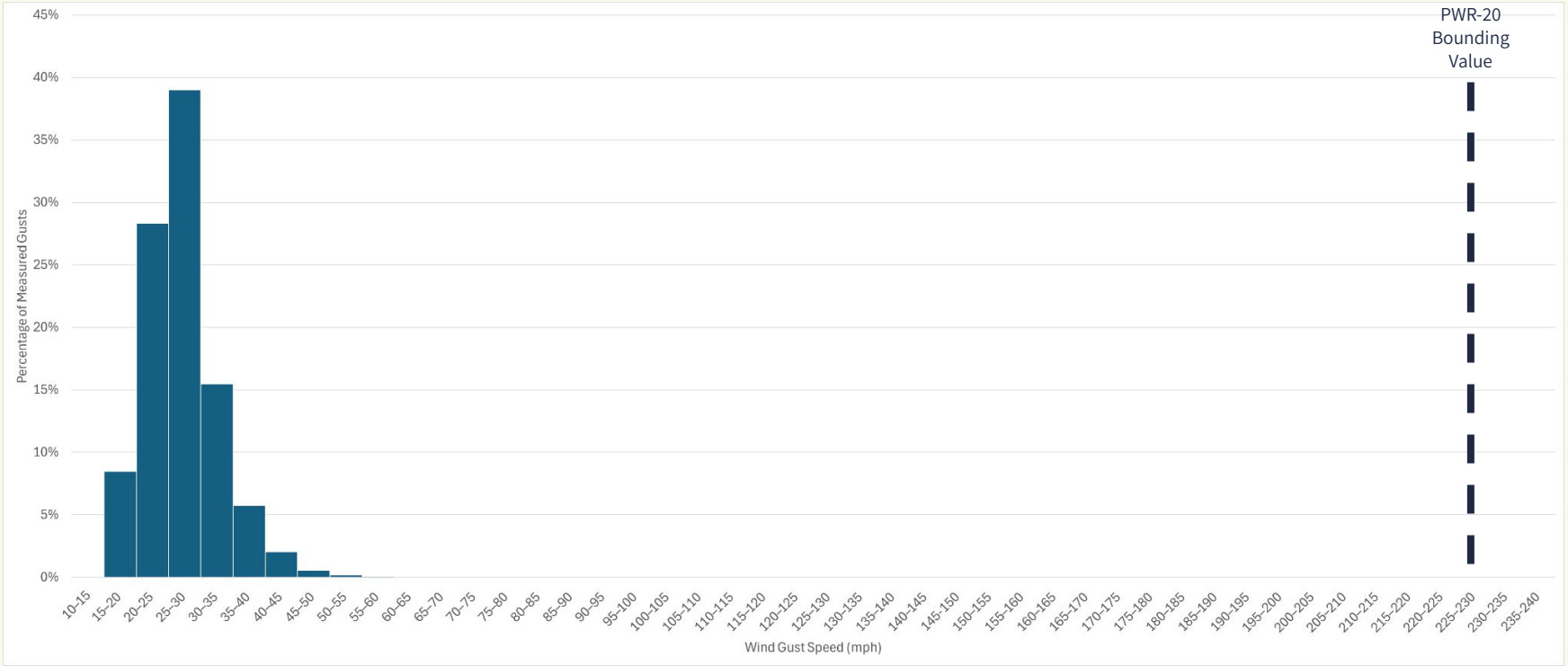
Sources: NOAA National Climatic Data Center; NOAA, “The Disastrous Texas Flash Floods of August 1-4,1978”.

48-Hour Snowfall, 1900-2025



Source: NOAA National Climatic Data Center

Wind gusts, 1965–2025



Source: Iowa State University, national database

Stability Classes

Stability Class	PWR-20 Bounding Value	Clinch River Early Site Permit	Natura Resources Construction Permit
A	0%	3%	0%
B	0%	4%	0%
C	0%	6%	0%
D	0%	31%	0%
E	0%	23%	0%
F	100%	33%*	100%

*Combined listed class F and G
Sources: Tennessee Valley Authority, Clinch River Nuclear Site Site Safety Analysis Report (SSAR);
Natura Resources, Abilene Christian University Molten Salt Research Reactor Preliminary Safety Analysis Report

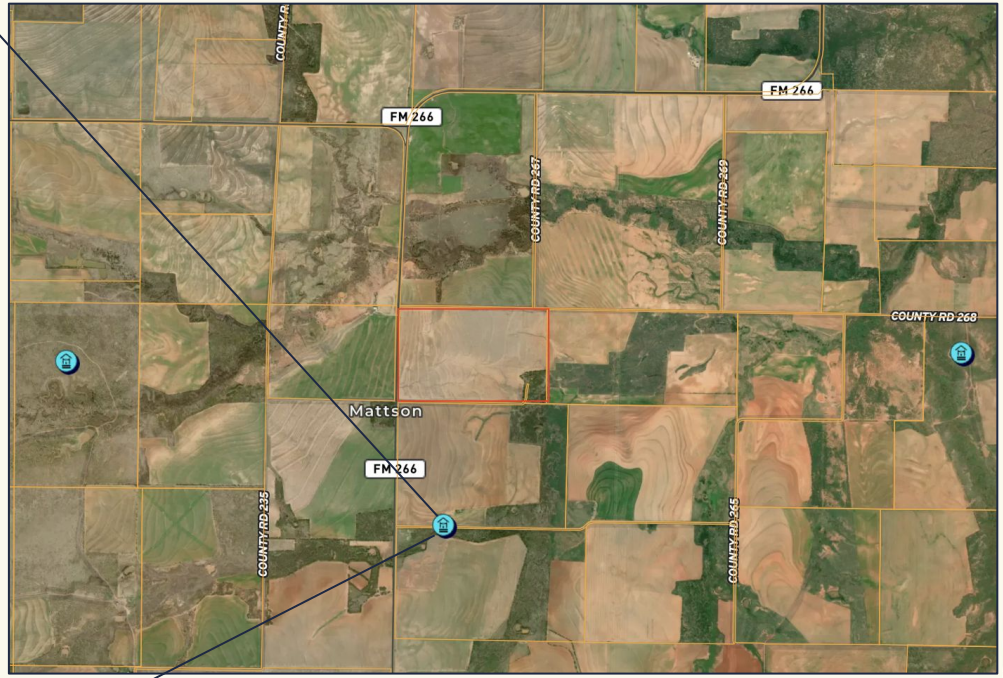
Geology & Seismology

Plant Parameter Envelope

Geology & Seismicity	PWR-20 Bounding Value	Haskell, TX Site-Specific Values
Peak Ground Acceleration (PGA)	2.00 g	0.1 g
Minimum Bearing Capacity (Static)	1 ksf	5 ksf

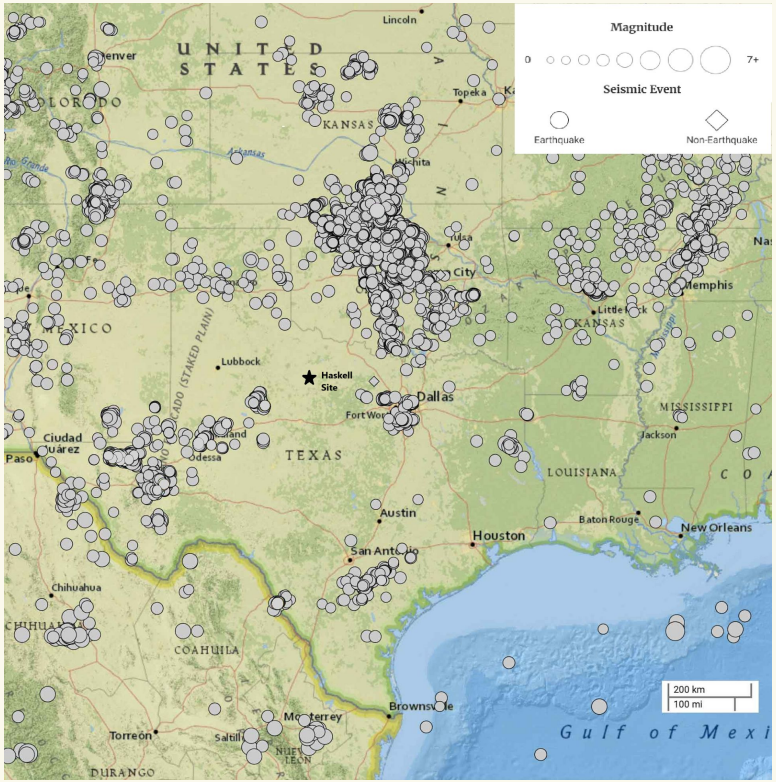
Local sub-structure

Depth (feet)	Lithology Description	Comments
0 - 5	Black and Brown Clay - Fine-grained, organic-rich clay.	Clay is typically soft and plastic, indicative of floodplain deposits.
5 - 22	Red Bed - Red sandstone or shale, rich in iron oxides, typical of Permian formation.	Well-sorted medium to fine-grained sandstone with visible red color from iron.
22 – 25	Blue Shell - Blue shale or limestone with clay content.	Shale or soft limestone with a bluish hue, possibly marine influence.
25 - 38	Red Bed - Red sandstone, typically finer-grained compared to upper layers. **Groundwater Level**.	Fine-grained sandstone, continues to show high iron oxide content.
38 - 42	Break in Red Bed - A transition or change in sedimentation, indicating different depositional conditions.	Change in deposition, which could reflect shifts in environmental conditions.
42 - 58	Red Bed - Red sandstone, typically finer-grained compared to upper layers.	A continuation of red sandstone, grain size similar to previous layers.
58 - 61	Break in Red Bed - Transition between layers with possible changes in depositional conditions.	Another change in deposition, indicative of a shift in environmental conditions.
61 - 84	Red Bed and Blue Shell - Mixed red sandstone and blue shale/limestone layers.	Combination of red sandstone and blue shale, indicating a shift in depositional environment.



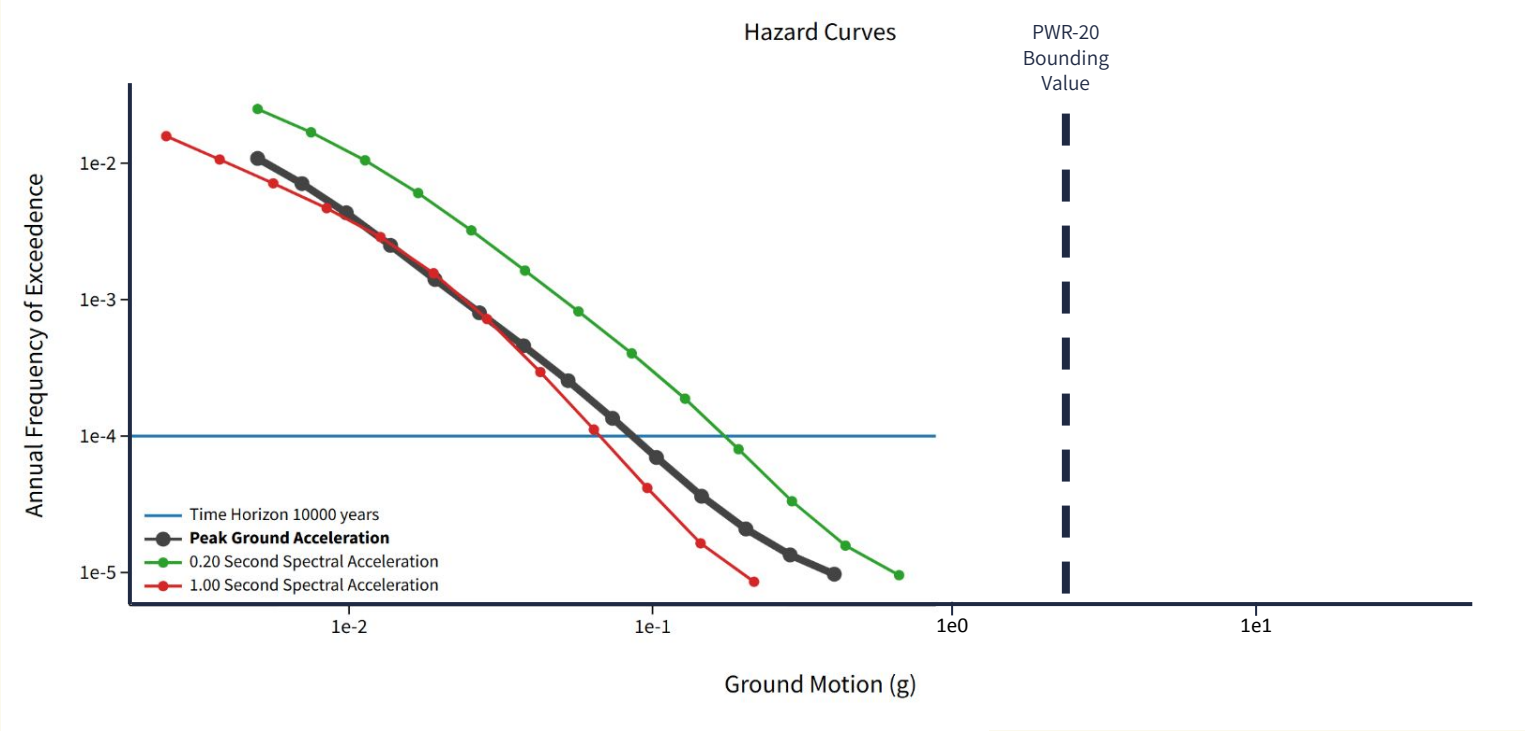
Source: Well Log #392464, Texas Department of Licensing and Regulation

Causes and Locations of Earthquakes



Source: United States Geological Survey

Seismic Hazard



Source: US Geological Survey, Haskell Site

Conclusion

CONCLUSION

RESOURCE CATEGORY	IMPACT
Land use	SMALL
Water - Related	SMALL
Ecology	SMALL
Socioeconomics	SMALL
Historical & Cultural Resources	SMALL
Air Quality	SMALL
Non Radiological Health	SMALL
Radiological Health	SMALL
Nonradioactive Waste	SMALL
Postulated Accidents	SMALL