FSAR Chapter 6
Engineered Safety Features

- Mostly IBR of DCD
- Containment leak rate testing program
  - (per approved NuStart AP-TR-NS01-A)
- Inservice inspection program (Class 2 & 3)
- SUP material and COL items

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FSAR Chapter 7
Instrumentation and Controls

- All IBR of DCD

FSAR Chapter 8
Power Systems

- Mostly IBR of DCD
- Conceptual design information (CDI) replacement
- Switchyard and grid information
- SUP material and COL items

FSAR Chapter 9
Auxiliary Systems

- Mostly IBR of DCD; STD DEP 1.1-1 for organization and numbering
- Full-text incorporation for 9.2.8 – Turbine Building Closed Cooling Water (CDI replacement)
- SUP material and COL items

FSAR Chapter 10
Steam and Power Conversion

- Mostly IBR of DCD
- Full-text incorporation for 10.4.5 – Circulating Water (CDI replacement)
- Flow accelerated corrosion monitoring and turbine assembly inservice inspection programs
- SUP material and COL items

FSAR Chapter 11
Radioactive Waste Management

- Mostly IBR of DCD
- Adopts NEI 07-11
  - Cost-benefit analysis template
- Adopts NEI 07-10
  - Process control program description
- Adopts NEI 07-09
  - Offsite dose calculation manual description
- Radiation and effluent monitoring program
- SUP material and COL items

FSAR Chapter 12
Radiation Protection

- Mostly IBR of DCD
- 12.1 – ALARA
  - IBR of NEI 07-08 re ALARA
- 12.4 – Dose to construction workers
- 12.5 - Radiation protection program (Appendix 12AA)
  - IBR of NEI 07-03 re Radiation Protection Program
- SUP material and COL items

FSAR Chapter 13
Conduct of Operations

- IBR of DCD; STD DEP 1.1-1
- 13.1 - Organization – Progress Energy site-specific
- 13.2-13.7 – STD SUP material and COL items (site-specific organization)
  - IBR of NEI 06-13A template re Training Program
- EP (13.3) and SGI (13.6) are separate documents
  - 13.6 refers to NEI 03-12 Appendix F for construction

FSAR Chapter 14
Initial Test Program

- Mostly IBR of DCD
- ITAAC criteria
- ITAAC screening
- SUP material and COL items (Progress Energy site-specific organization)

FSAR Chapter 15
Accident Analysis

- Mostly IBR of DCD
- Tank failure analysis addressed in 15.7.3, consequences addressed in Chapter 2
- SUP material and COL items

FSAR Chapter 16
Technical Specifications

- Mostly IBR of DCD
- 16.1 – Plant specific TS in Part 4
- COL items

FSAR Chapter 17
Quality Assurance

- Mostly IBR of DCD; STD DEP 1.1-1
- Quality assurance program description (QAPD) in Part 11
- IBR of NEI 07-02 re Maintenance Rule Program
- Two new sections not in DCD
  - 17.5 (QA for new license applicants)
  - 17.6 (Maintenance rule)
- SUP material and COL items

FSAR Chapter 18
Human Factors Engineering

- Mostly IBR of DCD
- HAR 2 and 3 maintain TSCs and OSCs in Annex Buildings – no departure
- COL items

FSAR Chapter 19
Probabilistic Risk Assessment

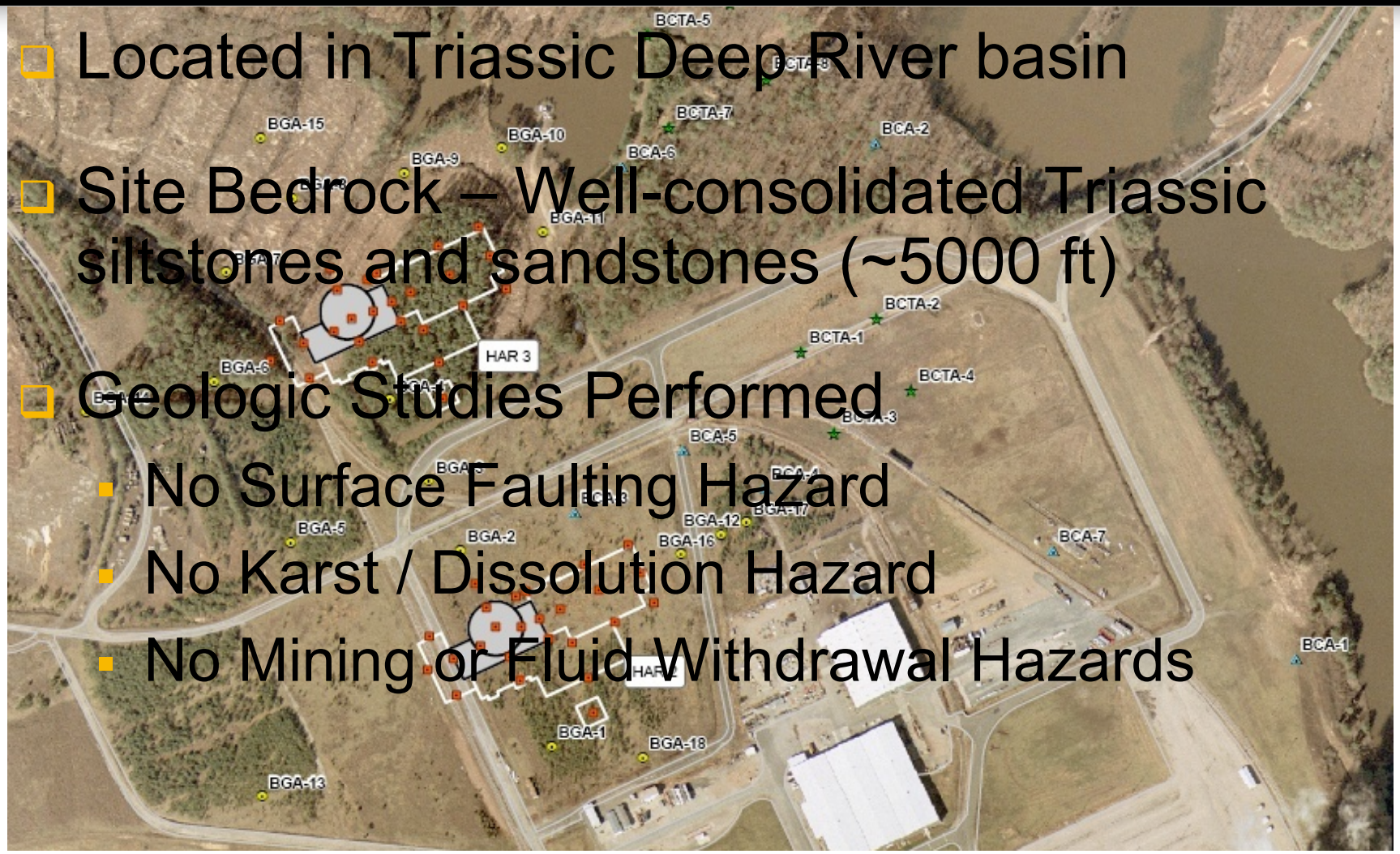
- Mostly IBR of DCD
- SUP material and COL items

HAR 2 AND 3 GEOLOGY, SEISMOLOGY, & SEISMIC SOURCES

Progress Energy

Basic Geology and Seismic Information

- Located in Triassic Deep River basin
- Site Bedrock – Well-consolidated Triassic siltstones and sandstones (~5000 ft)
- Geologic Studies Performed
  - No Surface Faulting Hazard
  - No Karst / Dissolution Hazard
  - No Mining or Fluid Withdrawal Hazards



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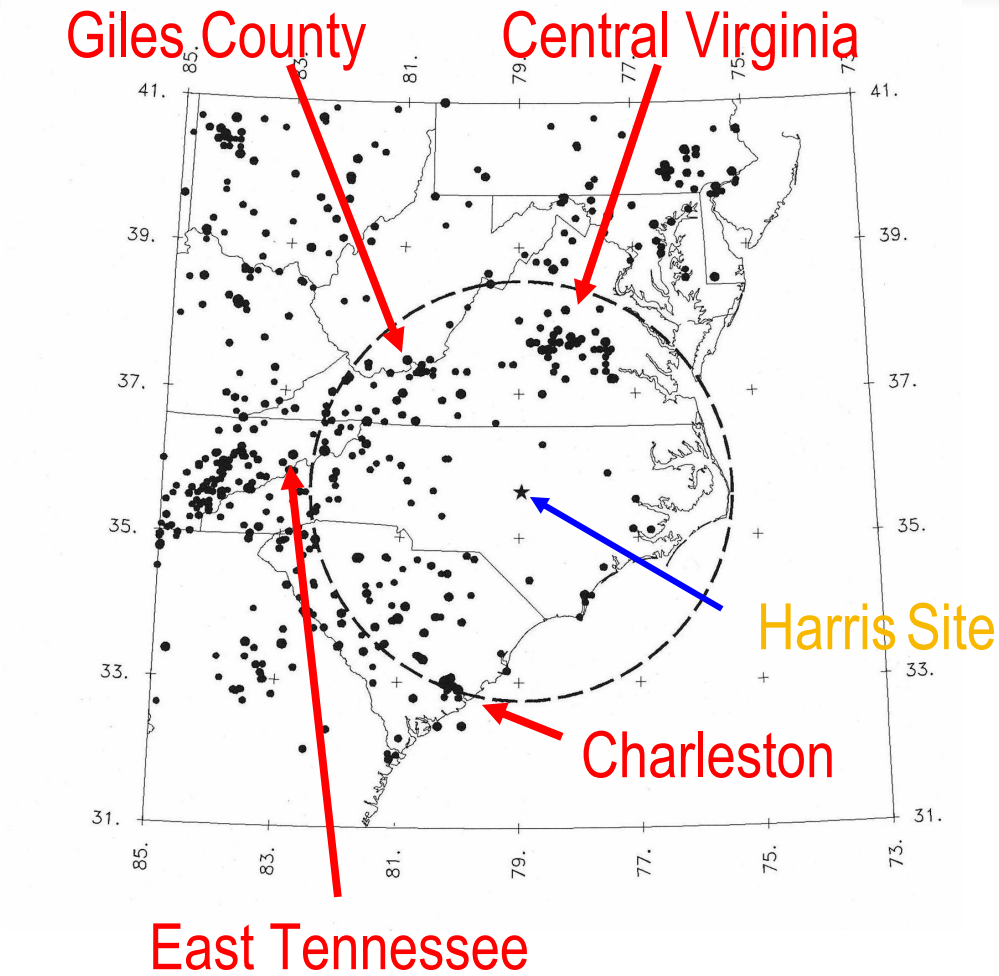
Harris Site Seismicity



- Site sits in a region of relatively low seismicity
- Sources related to Charleston, East Tennessee, Giles County, and Central Virginia at distances > ~ 100 km contribute to site hazard

Progress Energy

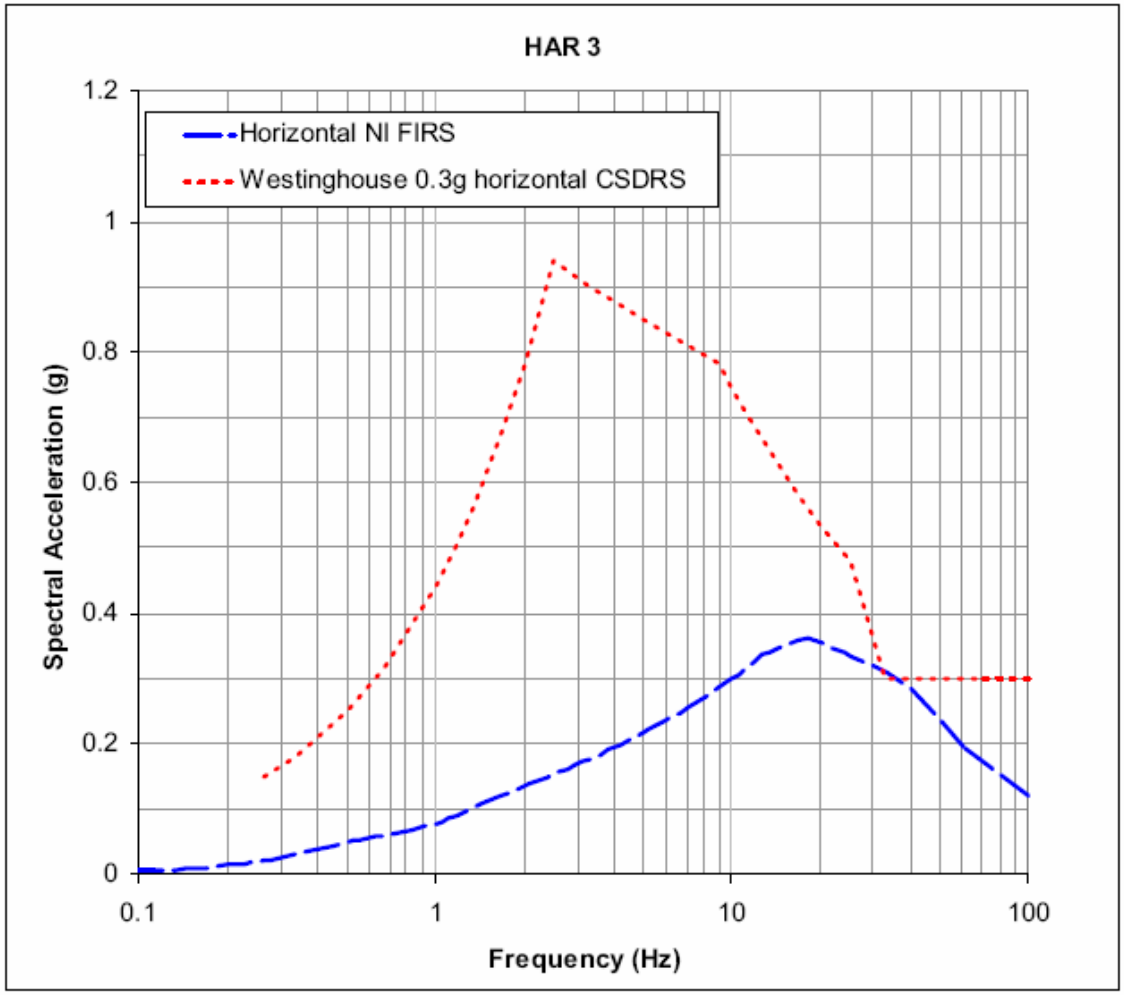
Site Response Spectra Development

- Developed PSHA for HAR 2/3
  - Used Updated Charleston Seismic Source
  - Included Postulated East Coast Fault System
    - Very low probability of existence and activity
- Performed Site Response Analysis to assess site amplification.
- Included the CAV Filter

Progress Energy

Foundation Input Response Spectra

- HAR 3 Nuclear Island FIRS slightly exceeds the AP1000 Design Spectra at the Foundation Level (between 33 and 35 hz)
- Bounded at the In-Structure level. (DCD 2.5.2.3)



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Surface Faulting

- Investigations for Potential Surface Rupture
  - No evidence of Quaternary Tectonic Surface Faulting or deformation within 25 miles.
  - No Capable Tectonic Sources identified within 25 mi.
- Comprehensive site investigation
  - Mapped faults are found to be not capable
  - No evidence of Quaternary deformation found
- Detail mapping will be conducted of excavations for new units

Progress Energy

Stability and Uniformity of Subsurface

- Top of Rock – Above NI Foundation
  - Example: excavate ~ 20- 35 feet of rock
  - Isolated intervals of weak rock and soil-like layers (< 3 ft thick).
  - Accounted for in settlement, bearing and site response analyses
- Engineering Properties
  - Firm Rock – Vs typically greater than 3500 fps increases to above 5000 fps within 30 feet below NI.
  - Average Uniform Compressive Strength is 6500 psi.

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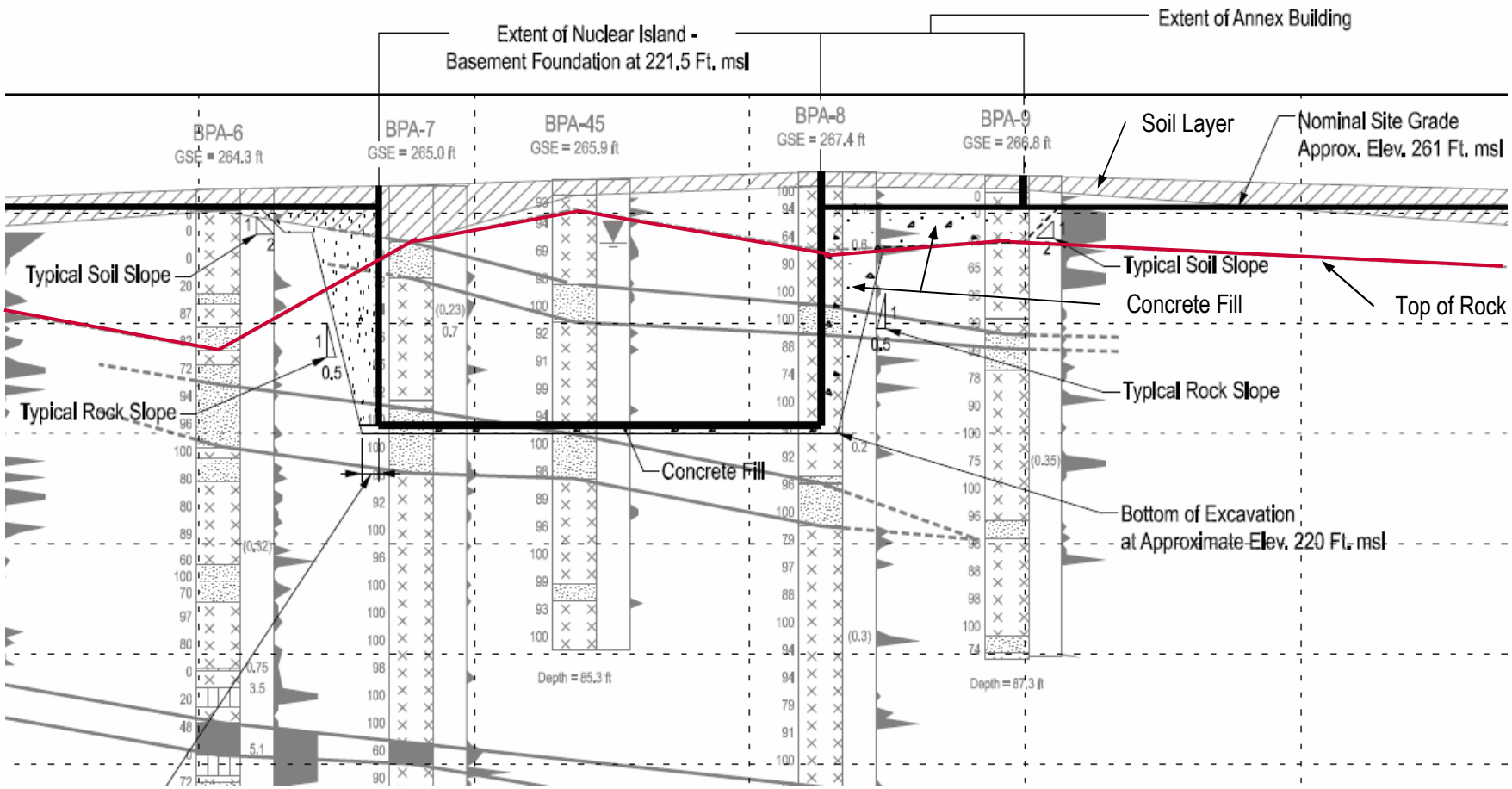
Excavation and Backfill



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Summary

- Firm Rock Site
- Subsurface Conditions Accounted for in Bearing, Settlement and Site Response Analyses
- Site Response Spectra Enveloped by AP1000 Design Spectra at the In-Structure Level