



Combined License Application Review FERMI 3

Safety Panel 1

February 4, 2015

Panelists

- **Adrian Muñiz – Lead Project Manager**
- **Sarah Tabatabai – Seismologist**
- **Manas Chakravorty – Senior Structural Engineer**

Seismic Hazard Reevaluation

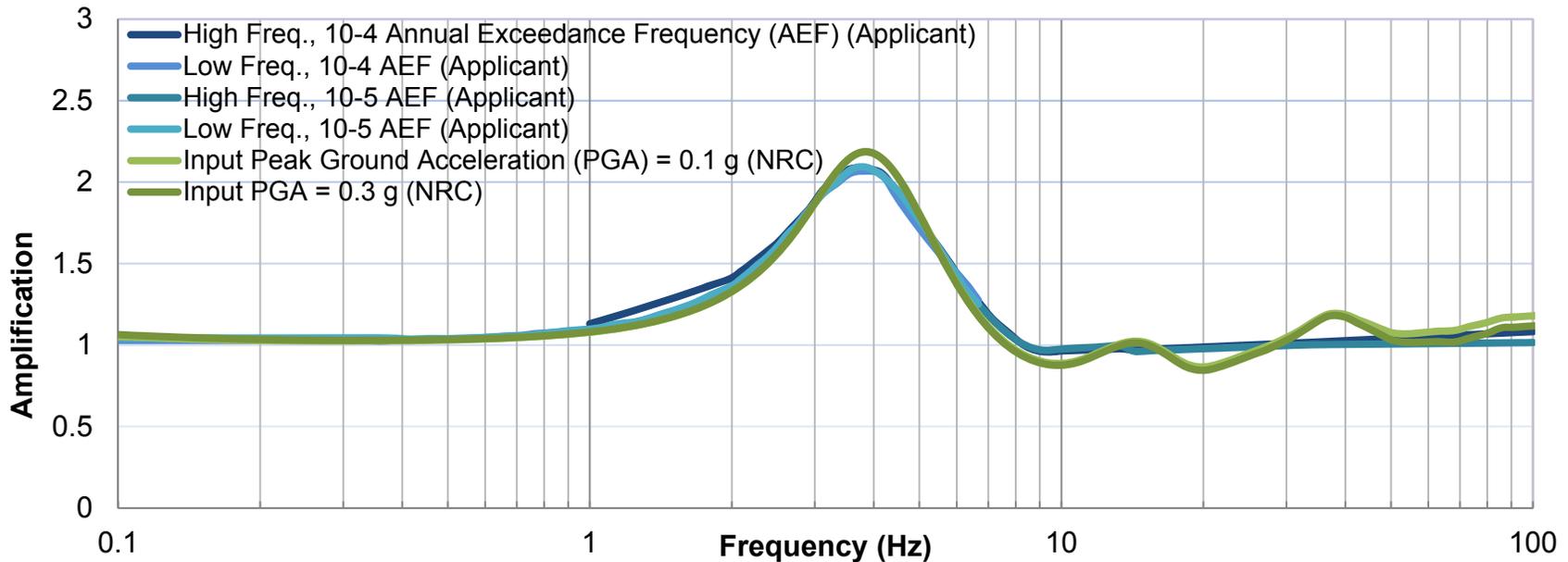
- **Staff issued requests for additional information (RAI) to new reactor applicants in light of the new Central and Eastern U.S. Seismic Source Characterization (CEUS-SSC) model**
- **Operating plant seismic reevaluations also used current NRC requirements and guidance, including the CEUS-SSC model**

Response to CEUS-SSC RAI

- **Original submittal used Electric Power Research Institute models endorsed by NRC at that time**
- **The applicant revised the submittal to incorporate the CEUS-SSC model, updating:**
 - **Earthquake catalog**
 - **Probabilistic seismic hazard analysis (PSHA)**
 - **Site response analysis**
 - **Ground motion response spectra (GMRS)**

Staff Confirmation Analysis

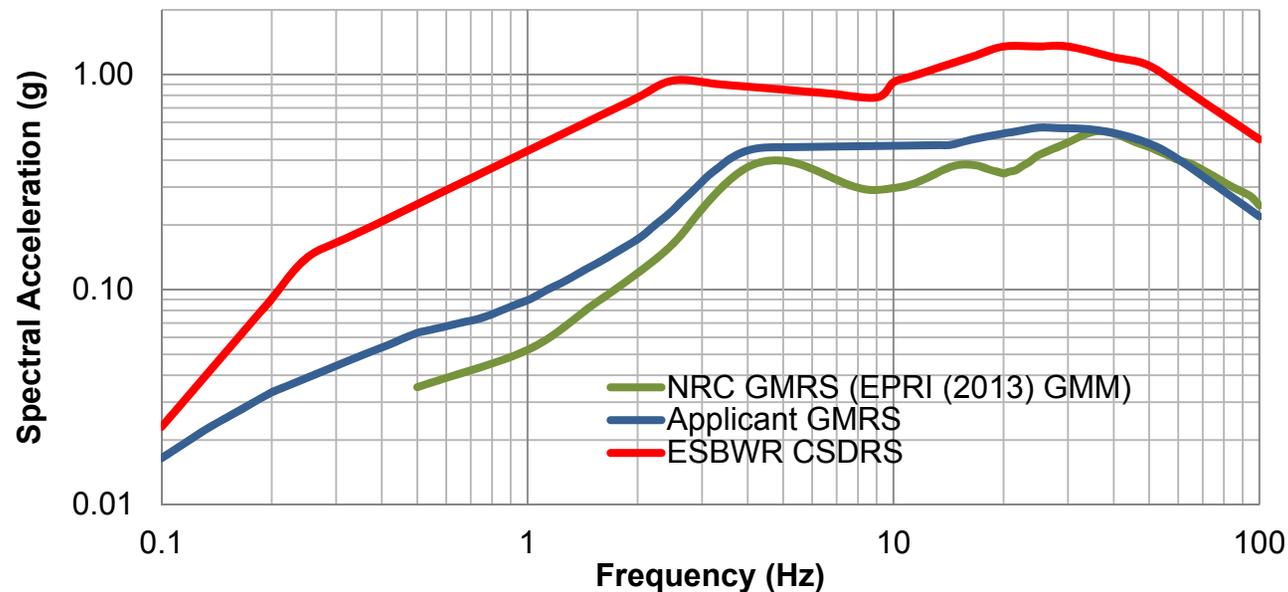
- **Staff's confirmatory PSHA and site response results are similar to the applicant's results**



Note: Figure developed from the applicant's site response results provided in SER Figure 2.5.2-12 and the staff's results shown in SER Figure 2.5.2-13.

Staff Confirmatory Analysis

- **Applicant's GMRS and Staff's GMRS are enveloped by the ESBWR certified seismic design response spectrum (CSDRS)**

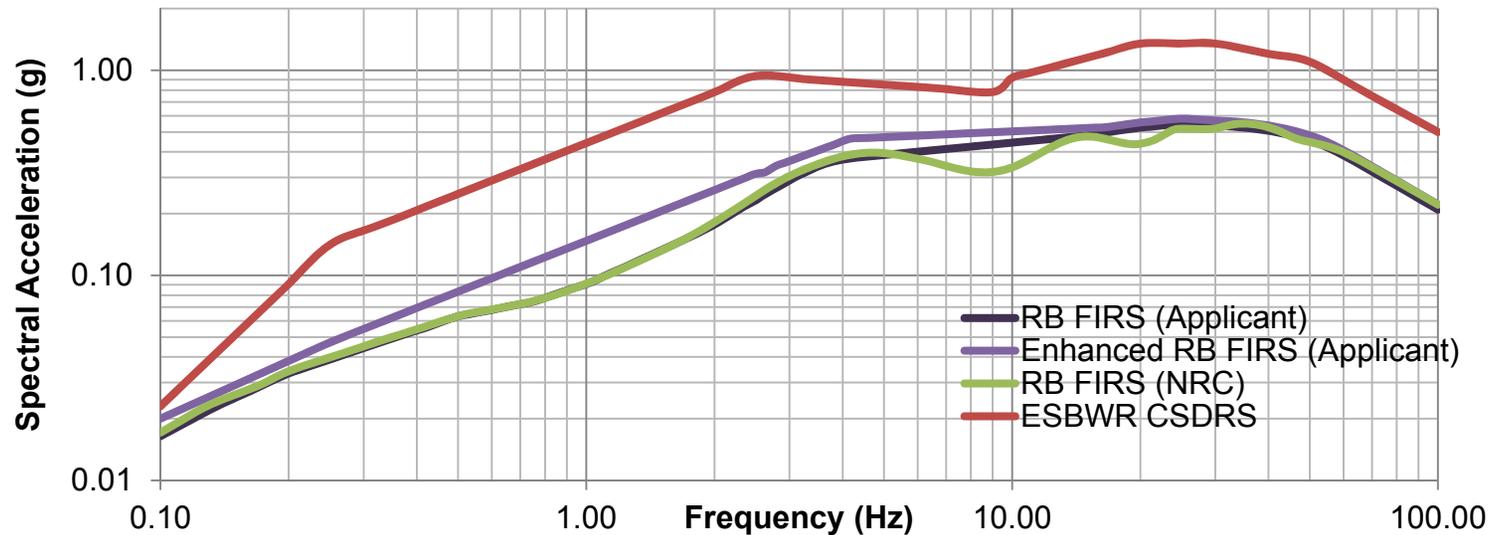


Site-Specific Soil Structure Interaction (SSI) Analyses

- **The applicant incorporates ESBWR Design Control Document (DCD) Sections 3.7 and 3.8 by reference**
- **The applicant performed site-specific SSI analyses to address**
 - **Partial rock embedment effect**
 - **ESBWR requirement of minimum shear wave velocity for side backfill**

Margin in Seismic Input

- **ESBWR CSDRS envelops Fermi Reactor Building (RB) site-specific Foundation Input Response Spectra (FIRS)**



Conclusions

- **Section 2.5.2 adequately addressed new CEUS-SSC through seismic hazard reevaluation for Fermi 3**
- **Sections 3.7 and 3.8**
 - **Site-specific seismic demands for seismic Category I structures are bounded by ESBWR DCD**
 - **ESBWR standard plant design is adequate**
- **Fermi 3 COL application meets relevant ESBWR DCD requirements and applicable NRC regulations**