



AP1000 R-COL Application Acceptance Review Issues

Discussion of Schedule for Resolution of Seismic Issue

January 31, 2008

Seismology: Introduction

- **NRC Staff have expressed concern over the use of the East Tennessee Seismic Zone (ETSZ) without an update**
 - Low weights assigned by some EPRI/SOG expert teams
 - Section 2.5.2.4.1.3 discusses maximum magnitude; applicant has not addressed other variables
 - Probability of activity
 - Source location
 - Recurrence
 - More recent studies provide new information
 - Geomatrix TVA Dam safety study
 - LLNL Trial Implementation study
 - Significant effects not included in updated PSHA
 - Application does not include detailed numerical comparisons of EPRI-SOG hazard and the newer studies

East Tennessee Seismic Zone

- ***NRC Issue: applicant has not updated ETSZ source models***
- **New studies were considered, but an update was not warranted because the effect on the hazard is not significant**
- **FSAR Section 2.5.2.4.1.3 discusses maximum magnitude**
- **Probability of activity**
 - Considered (not discussed explicitly in COL application)
 - Staff's expectations for different treatment are not clear
- **Source location**
 - Discussed in 2.5.2.4.1.1
- **Recurrence**
 - Discussed in 2.5.2.4.1.2
- **More recent studies cited by Staff**
 - Geomatrix TVA Dam safety study – Ref. 269
 - LLNL Trial Implementation study – Ref. 234

East Tennessee Seismic Zone (continued)

- ***NRC Issue: applicant has not updated ETSZ source models***
 - *Low weights assigned by some EPRI/SOG expert teams (may not adequately characterize the potential for larger earthquakes)*
- **Generic concern with respect to accepted PSHA model and the SSHAC process**
- **Model and SSHAC endorsed by RG 1.165 and RG 1.208**
- **Will be generically discussed at public meeting Feb 13**

East Tennessee Seismic Zone (continued)

- ***NRC Issue: more recent studies provide new information***
 - Geomatrix TVA Dam safety study considered
 - LLNL Trial Implementation study considered
 - Results -
 - Study parameters within EPRI-SOG ranges
 - No update of ETSZ needed

East Tennessee Seismic Zone (continued)

- ***NRC Issue: Significant effects should be included in updated PSHA***
 - Effects were not found to be significant
 - Update of ETSZ input to PSHA was not necessary
- ***NRC Issue: Application does not include detailed numerical comparisons of EPRI-SOG hazard and the newer studies***
 - Effects were not found to be significant
 - COLA guidance does not appear to request this information; not clear why information would be provided in the absence of significant impact

East Tennessee Seismic Zone (continued)

■ Conclusions

- PSHA based on accepted/endorsed model
 - Recent studies of ETSZ considered
 - Impacts on ETSZ parameters discussed
 - No significant effects to include in updated PSHA
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- Any remaining details can be adequately addressed in typical RAI timeframes