

**From:** [Carolyn Lauron](#)  
**To:** "Andrew Brenner"  
**Cc:** [Greg Cranston](#); [Manny Savoc](#); [Michelle Hayes](#)  
**Subject:** NRC Staff Response to Questions re: Guidance on Seismic Methodology (Project 99902049)  
**Date:** Monday, August 14, 2023 11:19:00 AM

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Hi Andrew –

The purpose of this email is to provide the NRC staff responses on the availability of guidance related to seismic methodology.

These questions would have been discussed during the August 9, 2023, public meeting that was subsequently cancelled.

If you have questions or need additional information, please let us know.

Thanks,  
Carolyn

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#### **Questions:**

From the August 9, 2023, public meeting materials (ML23212B206), specifically the presentation slides (ML23212B209), SMR (Holtec) requested the following:

- Multi-unit sites: Is there any NRC guidance or industry accepted standards for structure-soil-structure interaction? (See slides, Page 38)
- Water table: Is there any NRC guidance or industry accepted standard regarding effects of water table on SSI analysis? (See slides, Page 38)

#### **NRC Staff Response:**

##### Multi-unit Sites (structure-soil-structure interaction effect):

NUREG-0800, Standard Review Plan (SRP) Section 3.7.2 provides high-level guidance on this topic. The SRP states that “the procedures used in the SSI analysis to account for effects of adjacent structures, if any, on structural response are reviewed.” The SRP also states that “the effect of structure-soil-structure interaction should be accounted for, if significant.” The SRP, however, does not provide detailed guidance for specific issues such as an acceptable separation distance for two units to be considered decoupled (the subject of the SMR (Holtec) question), and therefore an applicant’s evaluation would be reviewed by the NRC staff on a case-by-case basis.

##### Water Table (groundwater effect on SSI):

NUREG-0800, SRP 3.7.2 provides high-level guidance on this topic. The SRP specifies that SSI analysis should consider “the effect of pore water on structural responses, including the effects of variability of groundwater level with time.” The SRP also indicates that the modeling of supporting soil should account for the effects of groundwater. The SRP does not specify acceptable methods of accounting for the groundwater effects on SSI analysis. For specific examples of implementation, an applicant may consult past applications and reviews, e.g., NRC-approved light-water reactor combined license applications and associated NRC staff evaluations.

**References:**

1. U.S. NRC, NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition." <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/index.html>
2. U.S. NRC, NUREG-0800, SRP Section 3.7.2, "Seismic System Analysis," Revision 4, September 2013. <https://www.nrc.gov/docs/ML1319/ML13198A223.pdf>