

**NUCLEAR REGULATORY COMMISSION**

**[NRC-2018-0178]**

**Proposed Revisions to Standard Review Plan Section 2.5.3,  
Surface Deformation**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Standard review plan-draft section revision; request for comment.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is soliciting public comment on draft NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Section 2.5.3, "Surface Deformation." SRP Section 2.5.3, Surface Deformation, was last updated in 2014. This proposed update to the SRP focuses on risk-informing the staff's review in this area on the potential for tectonic or non-tectonic surface deformation that could adversely affect the safe operation of a nuclear power plant at the proposed site.

**DATES:** Comments must be filed no later than **October 29, 2018**. Comments received after this date will be considered, if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

**ADDRESSES:** You may submit comments by any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2018-0178**. Address questions about NRC dockets to Jennifer Borges; telephone: 301-287-9127; e-mail: [Jennifer.Borges@nrc.gov](mailto:Jennifer.Borges@nrc.gov). For

technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.

- **Mail comments to:** May Ma, Office of Administration, Mail Stop: TWFN-7-A60M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

For additional direction on obtaining information and submitting comments, see “Obtaining Information and Submitting Comments” in the **SUPPLEMENTARY INFORMATION** section of this document.

**FOR FURTHER INFORMATION CONTACT:** Mark D. Notich, Office of New Reactors, telephone: 301-415-3053; e-mail: [Mark.Notich@nrc.gov](mailto:Mark.Notich@nrc.gov); U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

## **SUPPLEMENTARY INFORMATION:**

### **I. Obtaining Information and Submitting Comments**

#### **A. Obtaining Information**

Please refer to Docket ID **NRC-2018-0178** when contacting the NRC about the availability of information for this action. You may obtain publicly-available information related to this action by any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2018-0178**.

- **NRC’s Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select “ADAMS Public Documents” and then select “Begin Web-based ADAMS Search.” For problems with ADAMS, please contact the NRC’s Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The draft revision and current revision to NUREG-0800, Section 2.5.3, “Surface Deformation” are available in ADAMS under Accession Nos.

ML18183A044 and ML13316C064, respectively. The redline-strikeout version comparing the draft Revision 6 and the current version of Revision 5 is available in ADAMS under Accession No. ML18267A076.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

#### B. Submitting Comments

Please include Docket ID **NRC-2018-0178** in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at <http://www.regulations.gov> and enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

## II. Background

In the area of geology, seismology, and geotechnical engineering, section 100.23(c) of title 10 of the *Code of Federal Regulations* (10 CFR) requires, in part, that applicants for a construction permit, operating license, early site permit, or combined license evaluate the potential for tectonic and non-tectonic surface deformation at a site. Therefore, the consideration of information related to the potential for tectonic and non-

tectonic surface deformation is important to the staff review guidance in SRP Section 2.5.3.

Since the last update to SRP Section 2.5.3 in 2014, the staff completed review of licensee submittals of reevaluated seismic hazards in response to 10 CFR 50.54(f) information requests that were sent to licensees after the near-term task force review of the Fukushima Dai-ichi accident (ADAMS Accession No. ML12056A046). In addition to reviewing the hazard reevaluations for the operating reactor fleet submitted in response to the 10 CFR 50.54(f) information requests, the NRC staff remained actively engaged in several ESP and COL application reviews for new power reactors. In connection with those reviews, ESP and COL applicants evaluated the potential for tectonic and non-tectonic surface deformation consistent with the guidance found in the SRP. One of the lessons-learned from the 10 CFR 50.54(f) information reviews and the reviews for new power reactors was that a risk-informed focus on hazards most likely to affect a site would be appropriate for the consideration of the potential for tectonic and non-tectonic surface deformation at a site.

### **III. Discussion of Update Rationale**

#### **Staff's 2018 Update Philosophy**

Consistent with the Commission's approach to risk-informed regulation, the staff proposes that SRP Section 2.5.3 be simplified to focus the review on the potential for tectonic and non-tectonic surface deformation that could adversely affect the safe operation of a nuclear power plant at the proposed site.

Since the 2014 update to SRP Section 2.5.3, the staff completed the review of licensee submittals of reevaluated seismic hazards in response to the 10 CFR 50.54(f) information request regarding the Fukushima Dai-ichi nuclear power plant accident in 2011. A risk-informed focus was successfully used for the 10 CFR 50.54(f) flooding reviews and allowed licensees to focus the reevaluation on those hazards that are most

likely to impact the site and adversely affect SSCs important to safety. Using this approach, licensees provided a brief explanation of why a particular hazard does not affect the site and a more detailed evaluation for those hazards that could adversely affect the safe operation of the plant. Due to its success, this risk-informed approach is being incorporated into various sections of the SRP.

Upon review of the various causes of surface deformation described in SRP Section 2.5.3, the staff proposes that only the mechanisms that could adversely affect the functionality of the SSCs important to safety need to be described in detail in future license applications. Applicants would still be expected to perform their due diligence and consider the potential for tectonic and non-tectonic surface deformation identified in SRP Section 2.5.3 against the applicable siting criteria in 10 CFR part 100, but the staff proposes that the applicant's level of detail be focused on the potential for tectonic and non-tectonic surface deformation most likely to impact the site and adversely affect SSCs important to safety.

### **Specific Changes to SRP Section 2.5.3**

Changes to SRP Section 2.5.3 include technical editing, as appropriate, to improve the readability of the various SRP subsections as well as to better convey lessons-learned from the recent 10 CFR 50.54(f) reviews. The term "safety-related SSCs" is replaced with the term "SSCs important to safety" to better align with the regulatory terminology in 10 CFR parts 50 and 54. The references in SRP Section 2.5.3 were also updated, deleted or added, as appropriate.

Technical changes to SRP Section 2.5.3 include the addition of anthropogenic activities as a possible cause of non-tectonic surface deformation and the aforementioned focused review of those causes of surface deformation that could adversely affect the safe operation of a nuclear power plant at the proposed site. Similar to the 2014 update to SRP 2.5.3, the risk-informed approach to the 2018 update focuses

on the distinction between the different types of surface deformation, primarily tectonic and non-tectonic deformation. Surface deformation includes non-tectonic deformation due to dissolution, salt diapirism, and anthropogenic activities, such as mine collapse. The addition of anthropogenic activities as a potential source of non-tectonic surface deformation is in keeping with recognized mechanisms of non-tectonic deformation that could potentially affect a proposed nuclear power plant site. The acceptance review section was also revised to reflect the changes made to the Office of New Reactors' (NRO) office instruction related to acceptance reviews.

#### **IV. Further Information**

The NRC seeks public comment on the proposed draft section revision of SRP Section 2.5.3. The changes to SRP Chapter 2 reflect the current staff reviews, methods, and practices based on lessons learned from the NRC's reviews of design certification and combined license applications completed since the last revision of this chapter. The draft SRP section would also provide guidance for reviewing an application for a combined license under 10 CFR part 52.

Following NRC staff evaluation of public comments, the NRC intends to finalize SRP Section 2.5.3 in ADAMS and post it on the NRC's public Web site at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/>. The SRP is guidance for the NRC staff. The SRP is not a substitute for the NRC regulations, and compliance with the SRP is not required.

#### **V. Backfitting and Issue Finality**

Issuance of this draft SRP section, if finalized, would not constitute backfitting as defined in 10 CFR 50.109, (the Backfit Rule) or otherwise be inconsistent with the issue

finality provisions in 10 CFR part 52. The NRC's position is based upon the following considerations.

1. *The SRP positions do not constitute backfitting, inasmuch as the SRP is guidance directed to the NRC staff with respect to its regulatory responsibilities.*

The SRP provides guidance to the NRC staff on how to review an application for NRC regulatory approval in the form of licensing. Changes in guidance intended for use by only the staff are not matters that constitute backfitting as that term is defined in 10 CFR 50.109(a)(1) or involve the issue finality provisions of 10 CFR part 52.

2. *Backfitting and issue finality—with certain exceptions discussed below—do not apply to current or future applicants.*

Applicants and potential applicants are not, with certain exceptions, the subject of either the Backfit Rule or any issue finality provisions under 10 CFR part 52. This is because neither the Backfit Rule nor the issue finality provisions of 10 CFR part 52 were intended to apply to every NRC action that substantially changes the expectations of current and future applicants.

The exceptions to the general principle are applicable whenever a 10 CFR part 50 operating license applicant references a construction permit or a 10 CFR part 52 combined license applicant references a license (e.g., an early site permit) and/or an NRC regulatory approval (e.g., a design certification rule) for which specified issue finality provisions apply.

The NRC staff does not currently intend to impose the positions represented in this draft SRP section in a manner that constitutes backfitting or is inconsistent with any issue finality provision of 10 CFR part 52. If in the future the NRC staff seeks to impose positions stated in this draft SRP section in a manner that would constitute backfitting or be inconsistent with these issue finality provisions, the NRC staff must make the showing as set forth in the Backfit Rule or address the regulatory criteria set forth in the

applicable issue finality provision, as applicable, that would allow the staff to impose the position.

*3. The NRC staff has no intention to impose the SRP positions on existing nuclear power plant licensees either now or in the future (absent a voluntary request for a change from the licensee, holder of a regulatory approval or a design certification applicant).*

The NRC staff does not intend to impose or apply the positions described in this draft SRP section to existing (already issued) licenses (e.g., operating licenses and combined licenses) and regulatory approvals. Hence, the issuance of this SRP guidance—even if considered guidance subject to the Backfit Rule or the issue finality provisions in 10 CFR part 52—would not need to be evaluated as if it were a backfit or as being inconsistent with these issue finality provisions. If, in the future, the NRC staff seeks to impose a position in the SRP on holders of already issued licenses in a manner that would constitute backfitting or does not provide issue finality as described in the applicable issue finality provision, then the staff must make a showing as set forth in the



Backfit Rule or address the criteria set forth in the applicable issue finality provision, as applicable, that would allow the staff to impose the position.

Dated at Rockville, Maryland, this 25<sup>th</sup> day of September, 2018.

For the Nuclear Regulatory Commission.

**/RA/**

Jennivine Rankin, Acting Chief,  
Licensing Branch 3,  
Division of Licensing, Siting and  
Environmental Analysis,  
Office of New Reactors.

**SUBJECT: PROPOSED REVISIONS TO SURFACE DEFORMATION**

**DATE: 09-25-2018**

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