

## Regulatory Guide Periodic Review

**Regulatory Guide Number:** 4.11, Rev. 2

**Title:** Terrestrial Environmental Studies for Nuclear Power Stations

**Office/division/branch:** NRO/DSEA/RENV  
**Technical Lead:** J. Peyton Doub, PWS, CEP

**Staff Action Decided:** Reviewed with issues identified for future consideration

**1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?**

The staff believes that RG 4.11, which was last updated in March 2012, remains up to date with current scientific knowledge and professional practice in the field of terrestrial ecology. However, the staff recognizes that multiple NRC guidance documents whose scopes overlap with RG 4.11 are undergoing substantial revisions. These include RG 4.2 "Preparation of Environmental Reports for Nuclear Power Stations" (issued for public comment in February 2017) and the Environmental Standard Review Plans (ESRPs; NUREG 1555). The former provides reactor licensing applicants with guidance on how to prepare Environmental Reports required as part of licensing applications. The latter establishes a standard technical approach for NRC staff when performing environmental reviews of applications once received from applicants. Both RG 4.2 and the ESRPs address terrestrial ecology as one of multiple environmental issues included in a licensing review. But the scope of RG 4.11 differs in that it addresses supporting technical analyses related to terrestrial ecology but not the Environmental Report or application review directly. However, information provided by the analyses covered in RG 4.11 still forms a substantial component of the technical data provided by applicants in response to RG 4.2 and reviewed by NRC staff using the ESRPs. It is therefore important that the three documents be reviewed for mutual consistency.

Failure to ensure consistency among RG 4.11, RG 4.2, and the ESRPs may lead to some confusion among future applicants when collecting and presenting information related to terrestrial ecology in licensing applications. The staff has made considerable effort in ensuring technical consistency among RG 4.2, the ESRPs, and the newer and related RG 4.24 "Aquatic Environmental Studies for Nuclear Power Stations." However, RG 4.11 was last updated in 2012, before work commenced on the above closely related documents. To illustrate a specific example of possible confusion, the staff tightened its definition of "Important Species" in an effort to streamline the quantity of technical data required from applicants without sacrificing the quality of its environmental reviews. "Important Species" are those species for which species-specific data is necessary to complete an environmental review. Confusion could result should an applicant encounter an older definition of "Important Species" in RG 4.11 and a newer one in RG 4.2.

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- 2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?**

No significant issues with RG 4.11 have yet been identified from the ongoing revisions to RG 4.2 and the ESRP, so there is no impact on current licensing or inspection activities. However, if inconsistencies with RG 4.2 and the ESRP are identified after these documents are updated, some inefficiencies in reviews using RG 4.11 could be introduced. The number of licensing activities potentially affected depends on the number of licensing applications tendered in future years, which is difficult to quantitatively estimate.

- 3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?**

The staff estimates that an update could require a staff effort of as much as 0.25 FTE, composed of roughly 250 hours of time from one staff ecologist and 100 hours of time from support and review staff. As much as 100 hours of contractor support may also be necessary for peer review and support by contractor ecology staff.

- 4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?**

Reviewed with issues identified for future consideration.

- 5. Provide a conceptual plan and timeframe to address the issues identified during the review.**

The staff anticipates that a review will commence as soon as both RG 4.2 and the ESRP are finalized. The staff presently anticipates finalizing RG 4.2 in early 2018 and finalizing the ESRP in 2019. The staff expects that any necessary update to RG 4.11 could be completed in less than one year following finalization of the ESRP, providing a reasonable allowance of time for public notice and opportunity for public comment.

**NOTE: This review was conducted in April 2017 and reflects the staff's plans as of that date. These plans are tentative and are subject to change.**