



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

March 25, 2010

The Honorable Gregory B. Jaczko  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT:** DRAFT REVISION 2 TO REGULATORY GUIDE 4.11 (DG-4016)  
"TERRESTRIAL ENVIRONMENTAL STUDIES FOR NUCLEAR POWER  
PLANTS"

Dear Chairman Jaczko:

During the 570<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards, March 4–6, 2010, we reviewed Draft Revision 2 to Regulatory Guide (RG) 4.11 (DG-4016), "Terrestrial Environmental Studies for Nuclear Power Plants." Our Subcommittee on Radiation Protection and Nuclear Materials also reviewed this matter during its meeting on December 16, 2009. During these reviews, we had the benefit of discussions with representatives of the NRC staff. We also had the benefit of the documents referenced.

**RECOMMENDATIONS**

1. DG 4016 should be issued for public comment after Recommendations 2 through 4 are addressed.
2. This Guide has been developed specifically for nuclear power reactors. Statements that refer to potential use of this Guide for other types of licensing applications should be deleted.
3. The Guide should reference the National Environmental Policy Act (NEPA) since it requires environmental assessments when "major Federal actions" can affect the quality of the environment.
4. The staff should review DG-4016 for consistency and intent with respect to usage of the words "should", "must", "may" and "can."
5. The staff should develop a complementary regulatory guide that addresses aquatic environmental studies for nuclear power plants.

**DISCUSSION**

Staff issued RG 4.11, "Terrestrial Environmental Studies for Nuclear Power Stations," in 1976, providing guidance on what the staff considers acceptable terrestrial analyses to include in environmental reports for licensing nuclear power stations. Revision 1 of the Guide was issued

in August 1977. Draft Regulatory Guide DG-4016, when issued, will be Revision 2 of Regulatory Guide 4.11.

Since RG 4.11 was last issued, additional regulations have been promulgated or significantly modified (e.g., those affecting potential impacts on waterways and wetlands.) In addition, new resources are provided by other federal agencies such as the U.S. Geological Survey, the Natural Resources Conservation Service and the Fish and Wildlife Service and new approaches, methods and tools for the conduct of terrestrial environmental assessments have been developed and are available. Environmental reports submitted by license applicants should be prepared using these new bases and resources in order for the NRC to meet its obligations under NEPA.

Many of the changes in the analysis and documentation of ecological environments involve protection of wetlands. DG-4016 addresses wetlands with emergent vegetation. It does not address all types of wetlands or aquatic environmental settings. The staff should develop a complementary regulatory guide to address aquatic environmental studies for nuclear power plants.

DG-4016 is comprehensive and will be very helpful to assessors of terrestrial environmental impacts that could result from activities associated with NRC licensing of nuclear power stations.

There is a need to make a distinction between this Guide, which is intended for nuclear power reactors, and the potential use of the information in this Guide to application reviews for other types of NRC licensing activities. Statements that the Guide may be applicable to other types of licensing activities can be misleading and should be eliminated.

DG-4016 references the need for environmental assessments in accordance with the requirements of NEPA. However, there does not appear to be any reference to NEPA in DG-4016, either within the text or the references.

In most cases, the verb "should" is used as is appropriate to guidance when discussing assessment activities that are recommended and/or encouraged. However, in some cases (apart from references where requirements of a law are referenced), "must" is used. In other cases, the use of "must" may be intended, but in others the intent is not clear. Similar concerns apply to the distinction between use of the word "may" when the intent is to indicate that permission is granted versus use of the word "can." Therefore, the Staff should review DG-4016 for consistency and intent with respect to usage of the words "should", "must", "may", and "can."

Sincerely,

*/RA/*

Said Abdel-Khalik  
Chairman

References:

1. Draft Regulatory Guide 4016 (draft RG 4.11 revision 2), Terrestrial Environmental Studies for Nuclear Power Plants, 10/2009 (ML092660582)
2. Regulatory Guide 4.11, Terrestrial Environmental Studies for Nuclear Power Stations, Revision 1, 08/1977 (ML003739930)
3. 42 U.S.C 4321 – 4347, The National Environmental Policy Act of 1969, as amended, 01/01/19

References:

1. Draft Regulatory Guide 4016 (draft RG 4.11 revision 2), Terrestrial Environmental Studies for Nuclear Power Plants, 10/2009 (ML092660582)
2. Regulatory Guide 4.11, Terrestrial Environmental Studies for Nuclear Power Stations, Revision 1, 08/1977 (ML003739930)
3. 42 U.S.C 4321 – 4347, The National Environmental Policy Act of 1969, as amended, 01/01/19

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