NUCLEAR ENERGY INSTITUTE

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SUBJECT: Public Comment on Draft Regulatory Guide DG-1100, *Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants* (65 *Fed. Reg.* 55064)
Response to Request for Comments

PROJECT NUMBER: 689

Enclosed are the Nuclear Energy Institute's (NEI)[1] comments on draft Regulatory Guide DG-1100, issued for public comment on September 12, 2000.

A comment with policy implications beyond this one regulatory guide is the NRC staff activity to update regulatory guides to incorporate improved technical knowledge and to reference revised or new consensus standards. This currently includes draft guides DG-1098, -1100, -1102, and -1103, but there will be more.

In the DG-1100 Regulatory Analysis, an assumption is made that licensees would use the latest consensus standards available because they incorporate more recent technology and knowledge on the subject. While this might often be the case, there can be valid exceptions. It remains for each licensee to determine the feasibility and value of applying updated regulatory guides. An operating reactor licensee who voluntarily proposes to initiate system modifications consistent with the current licensing basis should not be placed in a position of defending to NRC staff a decision to not apply an updated regulatory guide.

[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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The Backfit Analysis section of the DG-1100 Regulatory Analysis states that the regulatory guide *"does not require a backfit analysis as described in 10 CFR 50.109(c) because it does not impose a new or amended provision in the NRC's rules or a regulatory staff position interpreting the NRC's rules that is either new or different from a previous applicable staff position. In addition, this regulatory guide does not require the modification or addition to systems, structures, components, or design of a facility or the procedures or organization required to design, construct, or operate a facility... This regulatory guide provides an opportunity to use industry-developed standards, if that is a licensee's or applicant's preferred method."*

In contrast, the guidance contained in Section D, *Implementation*, of DG-1100 could result in an unwarranted burden on licensees. It states that "e*xcept in those cases in which the applicant or licensee proposes an acceptable alternative method for complying with specified portions of the NRC's regulations, the method described in the active guide reflecting public comments will be used in the evaluation of a licensee's or applicant's design, construction, installation, and testing of radioactive waste management facilities, and in the evaluation of structures, systems, and components in light-water-cooled nuclear power plants."*

To address this concern, we recommend that the NRC include clear guidance in Section D, *Implementation*, of each updated regulatory guide that operating reactor licensees are not required to adopt revised regulatory guides in place of those cited as part of their current licensing basis.

Please direct questions on the enclosed comments to John Butler (202-739-8108, jcb@nei.org).

Sincerely,

David J. Modeen

JCB/maa
Enclosure

c: Mr. Herman L. Graves, III, U. S. Nuclear Regulatory Commission
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Enclosure

Comments on Draft Regulatory Guide DG-1100,
"Design Guidance for Radioactive Waste Management Systems, Structures,
and Components Installed in Light-Water-Cooled Nuclear Power Plants."

1. Use of Flexible Hoses
   The Draft Regulatory Guide should be revised to explicitly allow the use of flexible hoses in liquid radwaste treatment systems and solid radwaste systems. Flexible hoses for mobile liquid radwaste treatment and spent resin packaging systems (Solid Radwaste) have been used for many years in operating US power plants without adverse impact to the public.

   The use of such hoses has reduced the radiation exposure to plant personnel. Several plants have designated (bermed or enclosed) areas where mobile radwaste systems may be set up and connected to service plant needs. Reliance on mobile systems versus permanent systems enables such plants to use the latest technology and avoid being locked into the past. This is explicitly cited in the AP600 design (NUREG-1512, "Final Safety Evaluation Report Related to Certification of the AP600 Standard Design") and is called out in NUREG/CR-5733, "Re-evaluation of Regulatory Guidance Provided in Regulatory Guides 1.142 and 1.143".

   It is recommended that ANSI/ANS standard 40.37-1993, "Mobile Radioactive Waste Processing Systems," be added to the list of codes and standards referenced in Table 1 of the regulatory guide.

2. Classification of Radwaste Systems
   While the draft regulatory guide states on page 3 that the "system terminates at the point of ...storage of packaged solid wastes," the potential remains that the classification of radwaste systems for design purposes, discussed in Section 5, may be misapplied to radwaste storage buildings, vaults and containers. Guidance should be added to Section 5 and the flowchart illustrated in Figure 2 that clearly identifies the scope of application and the exclusion of storage facilities from this classification scheme.

3. Section A, INTRODUCTION
   The undefined term "extreme winds" is used in reference to the requirements of Criterion 2 of Appendix A to 10CFR50. It is recommended that the language of the regulations be more closely followed to avoid the potential for confusion associated with new terminology.

4. Various Pages' Footnotes
   The footnoted clarifications, definitions, and references on the bottom of various pages need to be renumbered.

5. Section B, page 3, third paragraph
   The last sentence should be reworded to read "The radwaste system terminates at the point of controlled discharge to the environment, at the point of recycle to the primary or secondary water system storage tanks, or at the point of storage of packaged solid wastes."

6. Section C, paragraphs 1.1.2, 2.2, and 3.2
   Material codes and standards listed in Table 1 usually do not require "manufacturers' material certificate of compliance" or "certified material test reports." These requirements are usually required only under ASME Section III Subsection NCA or NX-2000. If this kind of material traceability is desired, it should be clearly stated in these paragraphs.

7. Section C, SOLID RADWASTE SYSTEM
The first sentence should be reworded to read "The solid radwaste system consists of slurry waste collection and settling tanks, spent resin storage tanks, phase separators, and components and subsystems used to dewater or solidify radwastes prior to storage or offsite shipment."

8. Section C, paragraph 4.5
"In-service inspection" is typically not defined in the codes listed in Table 1. Typically, the systems are classified under Regulatory Guide 1.26 as Class I, II, or III and are considered safety related. When the respective portion of the system falls under one of these classifications, the "in-service inspection" is performed under the guidelines of ASME Section XI. The paragraph needs to provide a reference to the document that implements an "in-service inspection" program. If the system is classified as non-safety related, it would not be subjected to a defined "in-service inspection" program.

9. Section C, paragraph 5.2
The reference to structure classification (last word in the sentence) should be to "RW-IIb", not "RE-IIb".

10. Section C, subsection 6.2
Section 6.2.1 refers to an ASCE 7-957 document. This is a typographical error; the correct document number is ASCE 7-95

11. Section C, subsection 6.2
Paragraph 6.2.1 requires that foundation and walls up to the spill height should be classified as RW-IIa. There is no justification for this high hazard classification. The foundation and walls should be classified using the criteria in paragraph 5. The current requirement makes design unnecessarily more complicated when the rest of the structure is RW-IIb or RW-IIc structures. The current draft does not identify how design analyses should be performed for such a situation. Design to ASCE 7-95 Category III is sufficient for foundation and walls up to the spill height; this category is specifically identified in ASCE 7-95 as being suitable for "Buildings and other structures containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released".

12 References to ASCE 7-95
The draft regulatory guide refers to ASCE 7-95 in several sections as providing the basis for various requirements. The latest edition of this document is ASCE 7-98. Consideration should be given to adopt this current reference.

13. Table 1, Codes and Standards
The Table 1 entry corresponding to "Structure-Concrete" and "Design and Construction" is "ACI-318 or ACI 349 [(2)(3)], where (2) and (3) refer to footnotes. The reference to footnote (3) should be changed to footnote (4).

14. Table 2, Hazard Design Criteria for Safety Classification
- The title of the table should be revised to include internal hazards, i.e. revise title to "Natural Phenomena and Internal/External Man-Induced Hazard Design Criteria for Safety Classification."
- The entry corresponding to "Tornado" and "RW-IIb" should be changed from "ASCE 7-95, Category III" to "Not Required." Reason: ASCE 7-95 does not contain tornado provisions. Not designing for tornadoes is consistent with the "Tornado Missile" entry under this same classification.
- Similarly, the entry corresponding "Tornado" and "RW-IIc" should be changed from "ASCE 7-95, Category II" to "Not Required." Reason: ASCE 7-95 does not contain tornado provisions. Not designing for tornadoes is consistent with the "Tornado Missile" entry under this same classification.

- Under the classifications of "RW-IIb" and "RW-IIc" for the "Flood" loading, only "ASCE 7-95" should be indicated. Reason: ASCE 7-95 does not contain any flooding provisions related exclusively to Category III or Category II structures.

15. Table 3, Design Load Combinations
    The nomenclature at the bottom of the table indicates "W = Wind Loading Including Missile Effects." The words "Including Missile Effects" should be deleted since they are pertinent to tornado loadings.

16. Table 4, SSC Design Capacity Criteria
    - The entry corresponding to ACI-349" and "RW-IIa" should refer to Regulatory Guide 1.142 and not Regulatory Guide 1.143. Reason: This is believed to be a typographical error. There are other entries in this Table that also, correctly, refer to Regulatory Guide 1.142.
    - There are various entries in the table corresponding to "AISC-ASD" that refer to either Part 1 or Part 2 of the "Specification for Structural Steel Buildings Stress Design and Plastic Design." Part 1 refers to elastic design methods while Part 2 refers to plastic design methods. This Part 1 and Part 2 terminology applied to the 8th and previous Editions of this AISC Code. However, the latest (9th) Edition of the Code (which is listed in the References) does not use the Part 1/Part 2 terminology; the entire Code has been rearranged. It is recommended that these various table entries be revised to clarify the elastic/plastic design methods.