

## DRAFT VALUE/IMPACT STATEMENT

### 1. PROPOSED ACTION

#### 1.1 Description

Each application for a specific license for special nuclear material is required by the Commission's regulations to contain proposed procedures to avoid accidental conditions of criticality. Procedures for this purpose include incorporating neutron-absorbing material such as boron in process equipment. This draft regulatory guide provides updated guidance for the prevention of criticality accidents by use of borosilicate-glass raschig rings as a neutron absorber in solutions of fissile material.

#### 1.2 Need for Proposed Action

Guidance on using borosilicate-glass raschig rings as a neutron absorber is contained in Regulatory Guide 3.1, "Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material," dated January 1973, which endorsed ANSI Standard N16.4-1971. The NRC staff has been involved in the development, review, and approval of a revision to ANSI N16.4-1971 (designated ANSI/ANS 8.5-1979), which was approved by the American National Standards Institute on October 9, 1979. Current NRC guidance on the use of borosilicate-glass raschig rings as a neutron absorber should be updated, and consistent with past NRC practice, this guidance should be provided in the form of a revision to the regulatory guide endorsing the approved revised national standard.

#### 1.3 Value/Impact of Proposed Action

##### 1.3.1 NRC

Guidance on using borosilicate-glass raschig rings as a neutron absorber in solutions of fissile material is now contained in Regulatory Guide 3.1, dated January 1973, and is being used by the NRC staff to evaluate applications for specific licenses for special nuclear material. Since the purpose of the proposed action is to provide updated guidance, this value/impact statement is based on changes proposed to the guidance contained in Regulatory Guide 3.1.

ANSI/ANS 8.5-1979 extends the application of ANSI N16.4-1971 to low-enriched uranium fuels (enrichments no greater than 5 wt-% <sup>235</sup>U) and to a limited range of alkaline environments. It provides references to standard American Society for Testing and Materials tests used for the determination of the borosilicate-glass composition and includes a chemical acceptance test for the use of the rings in an alkaline environment. It also includes a glass volume test to provide information on volume loss due to chemical reactions in addition to that due to settling.

The proposed action establishes an NRC position on ANSI/ANS 8.5-1979 which extends ANSI N16.4-1971 to the use of borosilicate-glass raschig rings as a neutron absorber to uranium systems of low enrichment and to more severe environments. This will reduce uncertainty as to what the staff considers acceptable in this extended use of borosilicate-glass raschig rings as a neutron absorber and will result in more efficient regulatory actions and decisions. The impact of the proposed action will be minimal.

#### 1.3.2 Other Government Agencies

Not applicable, unless a government agency is an applicant.

#### 1.3.3 Industry

The proposed action provides a convenient reference for the licensee or license applicant in designing nuclear criticality safety programs to meet regulatory requirements and standards of good nuclear criticality safety practice. Most of the impact on industry has already occurred during development, review, and approval of the national standard. Additional impact associated with the NRC endorsement of the standard should be minimal.

#### 1.3.4 Workers

The proposed action should result in a more effective nuclear criticality safety program and therefore be of benefit to workers.

#### 1.3.5 Public

A beneficial effect on the public can be expected since the proposed action encourages attainment of a sound nuclear criticality safety program.

#### 1.4 Decision on Proposed Action

As previously stated, updated guidance should be furnished on using borosilicate-glass raschig rings as a neutron absorber in solutions of fissile material.

#### 2. TECHNICAL APPROACH

This section is not applicable to this value/impact statement since the proposed action is an update of previously issued guidance. The technical issues have been previously discussed in this statement.

#### 3. PROCEDURAL APPROACH

Since the proposed action is an update of information contained in an existing regulatory guide, the appropriate procedural approach is a revision to the existing guide.

#### 4. STATUTORY CONSIDERATIONS

##### 4.1 NRC Authority

Section 70.22, "Contents of applications" of 10 CFR Part 70 requires that applications for a license (to own, acquire, deliver, receive, possess, use, or transfer special nuclear material) contain, among other information, proposed procedures to avoid accidental conditions of criticality.

##### 4.2 Need for NEPA Assessment

The proposed action is not a major action, as defined by paragraph 51.5(a)(10) of 10 CFR Part 51, and does not require an environmental impact statement.

5. RELATIONSHIP TO OTHER EXISTING OR PROPOSED REGULATIONS OR POLICIES

The proposed revised guide does not conflict or overlap with requirements promulgated by other agencies. Implementation of the proposed action is discussed in Section D of the proposed revised regulatory guide.

6. SUMMARY AND CONCLUSIONS

A revision to Regulatory Guide 3.1, "Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material," should be prepared. The revision should endorse, with possible supplemental provisions, ANSI/ANS 8.5-1979.

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