



June 20, 2005  
GDP 05-0029

Rules and Directives Branch  
Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Paducah Gaseous Diffusion Plant (PGDP)  
Portsmouth Gaseous Diffusion Plant (PORTS)  
Docket Nos. 70-7001 and 70-7002; Certificate Nos. GDP-1 and GDP-2  
USEC Comments on DG-3023, Draft Revision 1, Regulatory Guide 3.71, "Nuclear  
Criticality Safety Standards for Fuels and Materials Facilities," (70 FR 25128)**

The United States Enrichment Corporation (USEC) is pleased to provide comments on DG-3023, Draft Revision 1, Regulatory Guide 3.71, "Nuclear Criticality Safety Standards for Fuels and Materials Facilities," which was noticed in the Federal Register on May 12, 2005 (70 FR 25128).

1. On page 5, Regulatory Position C.2, Bullet 1, the last sentence in the paragraph of exceptions to ANSI/ANS-8.1, "Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors" has been added. This sentence seems to have been based on ANSI/ANS-8.1-1998, Appendix C, Paragraph C5.(a) that is noted as not being part of the standard, but was provided for information. The Regulatory Position introduced changes in the original Appendix wording that need additional clarification. The Regulatory Position sentence currently states that *"In addition, the details of the validation should state computer codes used, operations, recipes for choosing code options (where applicable), cross-section sets, and any numerical parameters necessary to describe the input."* The Regulatory Position's use of the words "operations" and "recipes" is unclear here. The current wording in Appendix C of the ANSI standard is sufficient guidance for assuring the content of validation reports; however, the following alternative sentence for the regulatory position restated above more clearly describes USEC's understanding of the intent of NRC's wording. *"In addition, the details of the validation should state computer codes used, fissile material operations analyzed, code options used (where applicable), cross-section sets, and any numerical parameters necessary to describe the input."*

Since the standard's Appendix C is not a part of the standard, and is provided for "information only," the part that now appears in the Regulatory Position would appear to be the exception taken to ANSI/ANS-8.1 and elevates its significance to a position that must be addressed. This level of detail is believed inappropriate for a Regulatory Guide.

2. On page 5, Regulatory Position C.2, Bullet 2 details the exceptions taken to ANSI/ANS-8.3-1997 (reaffirmed in 2003), "Criticality Accident Alarm System." The first exception associated with Section 4.2.1 of the Standard applies the exception to 10 CFR 70.24. A similar

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statement should be added applying this exception to 10 CFR 76.89, "Criticality Accident Requirements" for Gaseous Diffusion Plants.

3. This revision of DG-3023 continues to include the exception to the ANSI/ANS-8.3 definition of the minimum accident of concern (MAC). The ANSI/ANS-8.3 standard in its Appendix A indicates the MAC results in a dose in free air of 0.2 Gray (20 rad) in the first minute at a distance of 2 meters from the reacting material. The draft Regulatory Guide indicates the MAC results in an absorbed dose in soft tissue of 20 rads of combined neutron and gamma radiation at an unshielded distance of 2 meters from the reacting material within 1 minute. This difference in a basic definition introduces confusion in application of these criteria between NRC regulated facilities using the Regulatory Guide basis and DOE regulated facilities that use the ANSI Standard basis; in particular, when both agencies have regulatory responsibility for different parts of a single facility.

If you have any questions regarding the information in this letter, please contact Mr. Jackson D. Martin, Manager of Nuclear Criticality Safety at (270) 441-6779.

Sincerely,

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