

American Nuclear Society

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**nuclear criticality control of
special actinide elements**

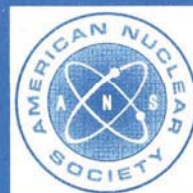
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Foreword (This Foreword is not a part of American National Standard for Nuclear Criticality Control of Special Actinide Elements, ANSI/ANS-8.15-1981.)

This standard provides guidance for the prevention of criticality accidents in the handling, storing, processing and transporting of special actinide elements. Subcritical mass limits are provided for fourteen nuclides beginning with ^{237}Np and ending with ^{251}Cf . The standard constitutes an extension of American National Standard for Nuclear Criticality Safety in Operations With Fissionable Materials Outside Reactors, N16.1-1975 (ANS-8.1). The subcritical limits in the standard are in some cases substantially less than the estimated minimum critical values. This is to account for uncertainties in calculations. In view of the limited availability of most of the nuclides in the near term, there was no reason to push the limits to higher values. The limits are considered adequate for current needs.

In addition, the heat generation from alpha particle decay may in some cases actually be the more limiting factor that controls the quantity of nuclear material assembled.

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