

# **DOE-STD-1027-92 Revision Criticality Overview**

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# Criticality Working Group

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# Revised DOE-STD-1027

- ▶ Some of the suggestions for a revision to DOE-STD-1027 are the sole responsibility of the presenter. I would like some discussion on the topics.
- ▶ Make the potential for criticality result in a hazard category 3 facility (not a cat 2 facility)
  - A minority on the group would like this to be a less than category 3 facility
- ▶ Use ANS 8.1 and 8.15 single parameter limits as the trigger point for a CSP (consistent with DOE O 420.1b) with appropriate caveats.
  - Use a lower limit with no caveats

# Revised DOE-STD-1027 (continued)

- ▶ Revise definition of precludes criticality by nature of process to include
  - Criticality is not credible
  - Inventory controls on fissionable material or reflectors
  - Controls on allowed material forms
  - Controls on allowed operations (normal, off-normal, and design basis)
  - Allow criticality segmentation of facility that is different than radiological segmentation
  - Allow credit for passive engineered features that are protected
  - Not allow administrative controls for criticality is not credible

# Revised DOE-STD-1027 (continued)

- ▶ Specifically address criticality assemblies and hazard categorization
- ▶ Specifically allow the following in less than hazard category 3 facilities
  - Criticality Safety Programs
  - Criticality Safety Alarms
  - Criticality limits or controls that are defense in depth (particularly limits that protect operations when more inventory than is allowed in the facility is in the facility)
- ▶ DOE approval of CSP and downgrade to less than hazard category 3

# Revised DOE-STD-1027 (continued)

- ▶ DOE approval of CSP
  - Strongly suggests that once triggered a Criticality Safety Program (CSP) is required.
- ▶ DOE approval of downgrade to less than hazard category 3
  - Nature of process precludes criticality