

March 15, 2009

Dr. Jerry N. McKamy  
Nuclear Criticality Safety Program Manager  
National Nuclear Security Administration  
Office of Engineering and Analysis, NA-171.1  
202-586-8974 (office)

SUBJECT: Enduser Response to DOE EM-60 Proposed Revision to DOE-STD-3007

Dear Dr. McKamy:

In 2008 DOE-EM-60 sponsored an initiative to improve the criticality safety of DOE-EM facilities. The initiative identified eleven items for improvement and assigned teams to address each issue. Two of the issues involve DOE-STD-3007, "Guidelines for Preparing Criticality Safety Evaluations at Department of Energy Non-Reactor Nuclear Facilities." These two issues are as follows:

1. Inconsistencies between DOE Orders, Standards, and Guides results in inefficiencies in implementation and clarity of expectations is lacking.
2. Inadequate Criticality Safety Evaluations (CSEs) may lead to stop work and inefficiencies.

The first issue involves DOE-STD-3007 and its definition and application of double contingency, the definition of unlikely, and Section IV that links criticality safety evaluations to the documented safety analysis. Proposed corrective actions include moving the DSA linkage section from DOE-STD-3007 to DOE-STD-3009, "Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses." An interpretation and/or clarification of the double contingency principle was requested in 2008 from the Standard Committee for ANSI/ANS 8.1, "Nuclear Criticality Safety in Operations with Fissionable Material Outside Reactors." This clarification will be helpful in that it will provide consistency between ANSI/ANS 8.1, DOE Order 420.1B, and DOE-STD-3007. These activities are endorsed by the Endusers and could improve the efficiency of site criticality safety programs.

The second issue dealing with inadequate CSEs is much more specific to DOE-STD-3007. DOE-EM identified inadequacies in CSEs that included hidden assumptions that were not carried into controls, incomplete criticality hazard evaluation, and inefficient or non-implementable controls. A corrective action for this issue includes a revision to DOE-STD-3007 that provides

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more prescriptive expectations and guidance. Although the Endusers agree that the Standard could benefit from a revision, we disagree with the timing of the revision and that the Standard requires more prescription. Enduser consensus is that the existing Standard contains sufficient guidance. The Endusers are not convinced that additional prescription will resolve these issues, as they appear to be symptoms of inadequate management processes. We believe that the process that directs how CSEs are performed, the organizations involved and their roles and responsibilities are more important to the successful derivation of controls than a prescriptive Standard. The CSEs that are written today contain more information and take longer to complete than in the past. If the controls are not adequate now, additional prescription will not prevent the inadequacies. The Endusers suggest that DOE review the management processes that drive how CSEs are performed and implemented to identify good practices. These practices may be useful to include in the next revision to DOE-STD-3007.

DOE-STD-3007 was issued in February of 2007. Implementing the changes from the 2007 revision of the Standard into site Criticality Safety Programs is a substantial effort. Many sites have only recently incorporated the 2007 version in their programs. The most common complaint about DOE-STD-3007 is the issue of double contingency, not that the guidance is insufficient. Since a clarification for double contingency has already been requested from the ANSI/ANS 8.1 Committee, the Endusers believe that the next revision to DOE-STD-3007 should include the clarification. This revision may also serve as a good time for moving the DSA linkage section from DOE-STD-3007 to DOE-STD-3009, however the Endusers are not collectively struggling with the DSA linkage concept.

The Endusers are not opposed to DOE-STD-3007, in fact, many find the document quite useful. From an Enduser perspective, usefulness is that which allows the accomplishment of safe, efficient and compliant work. As with any document, it can always be improved. We would like to offer our assistance on future revisions of the Standard. This offer will provide consolidated Enduser comments to assist you in the review and approval process. Please keep us abreast and engaged in the proposed revisions.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Todd Taylor". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

J. Todd Taylor, Chairman  
DOE Enduser Group

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