

CSSG TASKING 2007-05

Date Issued 4/24/07

Task Title: CSSG Review of RevCom Draft DOE-STD-1189

Task Statement: The CSSG is requested to provide review comments on Draft DOE-STD-1189, *Integration of Safety into the Design Process*.

Task Deliverable:

Written comments (email is acceptable) individually notated as either 'essential' or 'suggested' provided to the NCSP Manager.

Task Due Dates:

May 18, 2007

CSSG COMMENTS RECEIVED

May 30, 2007

Comments based on draft DOE-STD-1189-YR, March 2007.

1- In Section 8.6, third paragraph, the verb "drive" is used twice. In the first instance, the verb "influence" and in the second instance the verb "impact" would be more appropriate than "drive" as word usage (see markup below).

In addition, the fire prevention program at design will also influence criticality safety design requirements. For example, where a fire is credible by DSA standards, and sprinklers planned, the criticality safety evaluations must consider full flooding, depending upon the exact nature of the fire. The presence of sprinklers will also tend to influence the selection of engineered controls for criticality safety ...

2- One area of concern is the lack of an explicit requirement for emergency response actions (e.g., medical, fire, wind, security, etc.) to be considered in the design of process equipment, facilities, utilities, etc. Append the following statement to the fourth paragraph of Section 8.6.

One specific NCS aspect of operations requiring early project definition is the emergency response to criticality accidents.

3- In Table 8.2, row 4 ("System design for holdup minimization") under "Criteria" change the word "Allow" to "Provide" in Item 2..

4a- In Table 8.1, Col. 6 ("Construction"), the statement "Criticality limits and controls are incorporated into TSRs and operating procedures" can be interpreted to mean that all limits and controls are to be incorporated as TSRs. I suggest changing it to "TSRs and/or operating procedures" or something that removes the global implication.

4b- The criticality safety limits vs. TSRs still too strongly implies that incorporation of criticality safety limits into TSRs is desired or even required. Section in DOE-STD-3007-2007 has guidance for including crit controls in the DSA/TSRs. Criticality safety limits shouldn't be incorporated into TSRs unless the process was relying on that one thing to prevent criticality. The type of statement changes the burden of proof from "show why crit limits shouldn't be TSRs" to "show why this criticality safety limit should be a TSR." (See Sec. IV-A of DOE-STD-3007)

5- In Sec. 8.11, Par. 4 and in Sec. 8.14, Par. 1, the reference to the order should be 420.1B for consistency with all the previous references.

6-The last paragraph in Sec. 8.6 states that the DCP requires control of two independent parameters. This does not match the statement of the DCP in the previous paragraph. I agree this is how we "interpret" the DCP, but if you look at Section 4.2.2 of ANSI/ANS-8.1 it does not mention control of two parameters

7- Section 5.0 - has the wrong title for DOE-STD-3007.

8a- Appendix D-1 requires that criticality controls be classified as safety significant even if no injury to a worker is possible. This seems inconsistent with the regulatory definition of "safety significant" and promotes TSR-designation of NCS controls without benefit.

8b- Appendix D-1 points to DOE-STD-3007-2007 for guidance in determining safety significant classification. The CSSG agreed that Section IV-A of 3007 was about right. But with strong concerns about this type of guidance being provided in a CS Standard instead guidance of being in a DSA related DOE Standard.

9- In DOE-STD-1189 Appendix I, Chapter 6, the design expectation for NCS is clearly stated not to apply to DOE Hazard Category 3 (or lesser) facilities and that "Inventory limits specified in the TSRs will control the amount of fissionable materials." However, a TSR document would not exist for a less-than-Cat 3 facility. For example, suppose an R&D facility was limited to less than 700 g U-235 at less than 20 wt % U-235, all materials are unirradiated, and there is no other RAD material inventory. The facility would be less than Cat 3 and would not have a TSR defining the inventory control. Rather than relying on TSR content, 1189 should acknowledge that the facility/site implementation of 10 CFR 830 Subpart B should obviate NCS design requirements for Cat 3 and lesser facilities.

10- Appendix I Section 6.4.3 - has confusing NCS terminology. It appears that "contingency" and "CSE" are being using interchangeably.