Mendiola, Doris

Subject: FW: Comments on ISG for NUREG 1537 (Docket ID NRC-2012-0167)
Attachments: Comments on ISG to NUREG 1537 - Docket ID NRC-2012-0167 - Purdue University.pdf

From: clive.h.townsend@gmail.com [mailto:clive.h.townsend@gmail.com] **On Behalf Of** Clive Townsend
Sent: Monday, February 01, 2016 4:33 PM
To: Bladey, Cindy <Cindy.Bladey@nrc.gov>
Cc: Hardesty, Duane <Duane.Hardesty@nrc.gov>
Subject: [External_Sender] Comments on ISG for NUREG 1537 (Docket ID NRC-2012-0167)

Good afternoon-

Comments regarding the Interim Staff Guidance to NUREG 1537 (Docket ID NRC-2012-0167) are attached as a PDF.

Thank you,

Clive Townsend
PUR1, Reactor Supervisor
clive@purdue.edu
765.494.5764

11/16/2015
80 FR 70850

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SUNSI Review Complete
Template = ADM – 013
E-RIDS= ADM-03
Add= D. Hardesty (dah7)

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SCHOOL OF NUCLEAR ENGINEERING

February 1, 2016

SUBJECT: Comments to the Interim Staff Guidance to NUREG 1537 - Docket ID NRC-2012-0167

To whom it may concern:

Below are some general thoughts, questions, and discussion items relating to the Interim Staff Guidance to NUREG 1537 (ADAMS Accession No. ML 15134A494). Comments range from simple grammatical thoughts through high level considerations. The Purdue staff is very pleased with the issuance of the guidance as written and all items mentioned are only intended to further improve a well thought-out and thorough document.

- Page 11, paragraph 2 cites 10 CFR 50.59 but there is a typo making it appear to cite 10 CFR 5.

- Page 15, bullet point #2 states "The RCS has at least two channels of reactor power indication through the licensed power range", bullet #4 states "The reactor power indication of at least one channel should remain reliable for some predetermined range above the licensed power level" while Page 24, Design Basis Item #2 states that the "Neutron flux (power) monitor channels covering the range from subcritical source multiplication to well beyond the licensed maximum power level".

  While the first two statements appear in the RCS section and the last appears in the RPS section, there is some ambiguity regarding the indicated range guidelines. Additionally, due to the nature of a digital system, it is conceivable to have multiple indications of the same output; one which covers the normal operating range and one which covers the range through the LSSS or Safety Limit. The importance of the range is magnified by those NPUFs which do not have completely independent Reactor Control and Reactor Protection Systems.

- Font size error on Page 23 under Cyber Security, 3rd paragraph.

- Line 3 of Section 7.4 needs a period after SAR and before "Upon".

- The first use of V&V appears on page 35 but is not defined or explained before that.

- It is noted and appreciated that several times throughout the document, some benefits of the digital I&C strategy are noted, one of which on Page 40.

- Page 41 under Human Factors, part 35 states "Recognized human-factors standards and design techniques should be employed to support the described human-performance requirements." It would be helpful guidance to cite, acknowledge, or suggest to the applicant one or more of these specific standards as a referential starting point. For example:

School of Nuclear Engineering
Nuclear Engineering Building • 400 Central Drive • West Lafayette, IN 47907-2017
(765) 494-5739 • Fax: (765) 494-9570 • https://engineering.purdue.edu/NE

"Recognized human-factors standards and design techniques should be employed to support the described human-performance requirements such as DOE-HDBK-1140-2001 Section 3.1.2"

- General consideration could be given to those NPUFs which do not have a control room and the reactor/control room is the same. Specifically, Page 77, Design Basis Item #2 states that the "control interfaces for manual initiation of protective actions should be located in the control room." A statement in the ISG recognizing this statement may provide clarity.

- Page 81, under Design Criterial: Independence, has the first reference to "the reviewer". It was my understanding the Part II of NUREG 1537 was addressed to the reviewer and Part I is addressed to "the applicant".

Additionally, below are two general thoughts to accompany the comments above. What is the process for an interface change to the console display system? There are obviously varying levels of change which can be done, from removing an indicator all together, to changing its location on the screen, to changing the range over which it displays. Does this small change require a modification to the Safety Analysis report, a 10 CFR 50.59 review, or no notification at all?

Secondly, the primary purpose of some of the facilities is the teaching of students, research support and general public engagement. To meet that end, live exporting of data to a secondary system allowing for customizable, highly variable, and dynamic displays will be desirable. At various points the ISG discusses data management to non-safety related systems as well as restricting an operator's ability to use such information to make control related decisions. Extended discussion of this application giving clear, concise, and direct guidance would prove useful, especially to those facilities where the operator control room and the reactor room are the same.

If there are any questions or clarifications to the comments above, please reach out to me at the phone or email below.

Regards,

Clive Townsend
Purdue University
clive@purdue.edu
765.494.5764