

**From:** Timothy Johnson  
**To:** INTERNET:ddgreen01@mchsi.com; Internet:Rkrich@nefnm.com  
**Date:** 11/3/04 4:29PM  
**Subject:** Criticality issue list

Attached is a list of items for discussion tomorrow AM.

**CC:** BWS1; Harry Felsher; W Troskoski

**Mail Envelope Properties (41894DC6.FFC : 12 : 20684)**

**Subject:** Criticality issue list  
**Creation Date:** 11/3/04 4:29PM  
**From:** Timothy Johnson

**Created By:** TCJ@nrc.gov

**Recipients**

mchsi.com  
ddgreen01 (INTERNET:ddgreen01@mchsi.com)

nefnm.com  
Rkrich (Internet:Rkrich@nefnm.com)

nrc.gov  
twf4\_po.TWFN\_DO  
BWS1 CC (BWS1)  
HDF CC (Harry Felsher)  
WMT CC (W Troskoski)

**Post Office**  
mchsi.com  
nefnm.com  
twf4\_po.TWFN\_DO

**Route**  
INTERNET  
Internet  
nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	398	11/03/04 04:29PM
V3-V4-NCS-Issues.wpd	18893	11/03/04 04:26PM

**Options**

**Expiration Date:** None  
**Priority:** Standard  
**Reply Requested:** No  
**Return Notification:** None

**Concealed Subject:** No  
**Security:** Standard

Priority 1 Issues
<p>ISA summary Table 3.7-1 and Table 3.7-3: In a future vertical slice review, the NRC will seek to understand how LES meets the regulatory requirements by having IROFS identified in the ISA summary only as: (1) the name of the IROFS as a functional statement, (2) options for implementing the IROFS, (3) a score that is the same for each option of the IROFS, (4) if more than one IROFS or option is needed for an accident sequence, then a statement that they are independent, and (5) options that appear to not be administrative in administrative IROFS (e.g., IROFS14a/b). In addition, the same IROFS is used in different sequences and so without unique identifiers of IROFS with accident sequences, it may be very difficult to identify the appropriate management measures for the IROFS/accident sequence as well as keep track of changes in the future.</p>
<p>ISA summary Table 3.7-2 and Table 3.8-1: LES needs to clarify in the license application how certain IROFS are independent of one another (e.g., 14a/b, 15a/b). This is important because the IROFS are used for over 20 accident sequences. The same is true (but for various number of accident sequences) for other IROFS (e.g., 16a/b/c/d, 19a/b/c/d, 30a/b/c, 31a/b/c/d, 45a/b/c/d). In addition, ISA summary Table 3.7-4 and Table 3.8-1 for external accident sequences: LES needs to clarify for 'EE-LP-BLD (CR)', how IROFS27a/b are independent of each other. The same is true for IROFS44a/b for the other NCS external accident sequence.</p>
<p>ISA summary Table 3.7-3 and Table 3.7-4: In the ISA summary tables for internal events, LES is consistent for having the 'Initiating Event Index' the same for the controlled and uncontrolled accident sequences. However, in the tables for external events, LES is not consistent because for the two NCS accident sequences and other non-NCS accident sequences, LES changed the 'Initiating Event Index' between the controlled and uncontrolled accident sequences. LES needs to correct this because otherwise LES is double counting the effect (i.e., once on the 'Initiating Event Index' and once for having the IROFS).</p>
<p>ISA summary Table 3.7-2 and Table 3.8-1: LES needs to clarify the difference between certain accident sequences that appear to be the same (e.g., PT3-4 vs. PT4-1, FR1-1 vs. FR2-1, DS1-2 vs. DS2-2).</p>
<p>License application: LES needs to provide a definition of 'Safe-By-Design' in Chapter 3.0 and how components are determined to be 'Safe-By-Design' because it appears that the term does not mean the same as 'Favorable Geometry Equipment' where NCS is solely based on the geometric dimension and the enrichment to allow for an very easy comparison (i.e., no calculations needed) between design and operation attributes.</p> <p>LES needs to copy information from ISA summary Section 3.1 to Chapter 3.0 (i.e., Section 3.1.1, Section 3.1.2-except table containing ISA Team Member &amp; Experience/Qualification, Section 3.1.8, Table 3.1-1, Table 3.1-3 through Table 3.1-6, Table 3.1-8 through Table 3.1-11) because this information is the commitment and description of the ISA processes used.</p> <p>For consistency, LES needs to add to Chapter 3.0 the following information that should have been in the submittal dated 10/2004 regarding Favorable Geometry Equipment:</p> <ul style="list-style-type: none"> <li>- add to 'Addition to Table 3.1-9 of (-5)' that 'Significant margin also exists.';</li> <li>- add to 'Addition to Table 3.7-2' that 'These passive safe-by-design features are considered items which may affect items relied on for safety. As a result, QA Level 1 requirements apply to these features.'; and</li> <li>- modify 'Addition to Table 3.7-2' in the second part of the conclusion by replacing the word 'large' with 'significant'</li> </ul>
<p>Proposed 09/30/04 Rev. 4: LES needs to clarify the bullet in Section 5.2.1.5 (Additional NCS Analyses Commitments) (p. 5.2-6) regarding ANSI/ANS-8.7 as to what 'these requirements' means (e.g., replace "... these requirements ..." with "... the requirements for subcriticality of operations, margin of subcriticality for safety, and selection of controls requirements in 10 CFR 70.61(d) ...")</p>

Priority 2 Issues
LES needs to confirm that enrichment limit asked for and needed to cover all normal and credible abnormal conditions is 5.0 wt.% U-235.
LES needs to correct inconsistencies both within the classified & between the unclassified and classified ISA summary provided in 09/2004 and 10/2004: (1) name of Dump System, (2) Centrifuge Test System - missing item in second table, names of components, (3) Liquid Effluent... and others - meaning of "X"-slab, (4) Ventilated Room System - inconsistent number for Oil Trap..., and (5) Cylinder Preparation System - missing last two items from unclassified in classified. Also, inconsistent reporting of results.
LES needs to make sure that last bullet on p. 5.1-1 (i.e., 'Safety parameters and procedures will be established') of Rev. 3 is not lost in the upcoming Rev. 4 because it was not on p. 5.1-1 of the proposed Rev. 4 and p. 5.1-2 was not included in the proposed Rev. 4.
Proposed 09/30/04 Rev. 4: LES needs to correct the units in Section 5.1.2 (Control Methods for Prevention of Criticality) and Section 5.2.1.3.1 (Reflection Assumption) in the upcoming Rev. 4 because 2.5 cm does not equal 1.0 inch (e.g., this is also in various places in the ISA summary).
LES needs to correct ISA summary Section 3.8.1 (third paragraph) so that it replaces the reference to the 'double contingency protection requirement' (i.e., which doesn't exist) to something else (e.g., "subcritical under all normal and credible abnormal conditions").
LES needs to understand that Section 5.3 (CAAS) of the license application means that LES does not have flexibility to deal with times when the CAAS is not working (i.e., 10 CFR 70.24 must be met at all times). Consider adding back information concerning compensatory measures, etc... that was moved from Section 5.3 to Section 3.1.5 of the ISA summary in the 09/04 submittals.
LES needs to add the missing 'Table' page for Chapter 5.0 in the upcoming Rev. 4.
LES needs to correct the errors in 'Controlled Likelihood Category' for accident sequences PB1-3 and PB2-6, which should both be '-5' and not '-6' in ISA summary Table 3.7-1 (p. 3).
Proposed 09/30/04 Rev. 4: LES needs to correct the date for NRC Regulatory Guide 3.71 to '1998' in the bullet for ANSI/ANS-8.10-1983 in Section 5.2.1.5 (Additional NCS Analyses Commitments) in the upcoming Rev. 4.