

NEI NUREG 1022 Team Response to
NRC Identified Items in NUREG-1022, Revision 2

Industry response to NRC items 1-45 are provided below. The industry has also provided a marked up of NUREG 1022 Revision 2 with recommended changes.

A Microsoft Word 2003 document was created from a PDF version of NUREG 1022 Revision 2. In Revision 2, for some cases, strikeout text and underlined text were used to show text deleted or added from Revision 1 (as noted in NUREG 1022 section 1.3). To prevent confusion, the strikeout text is deleted and the "underline" attribute removed to start with a clean copy prior to turning on track changes. The industry NUREG 1022 team has identified changes using the track changes feature in MS Word 2003. Comments have been added to provide a brief description / justification for the changes. This document is included as Attachment 2.

The same changes identified in Attachment 1 are shown on the PDF version of NUREG 1022 Revision 2 using Adobe comment features and is Attachment 2. Attachments 1 and 2 show the identical changes.

Attachments 3-5 are NEI NUREG 1022 Team position papers referenced by industry responses below.

Attachments:

1. NRC NUREG-1022-R3 – Industry Markup (Microsoft Word document)
2. Industry Markup of NUREG-1022-R2 October 2000 (PDF markup)
3. NEI NUREG 1022 Team Position Paper, Safety System Functional Failures – Systems within Scope
4. NEI NUREG 1022 Team Position Paper, Engineering Judgment and Reasonable Operator Actions
5. NEI NUREG 1022 Team Position Paper, Safety System Functional Failures, Criterion D, "Mitigate the Consequences of an Accident"

Administrative Errors Noted

- Page 7 lists 50.72(b)(3)(xii), 50.72(b)(2)(xi), and 50.72(b)(3)(xiii) reportable events in the 50.73 column instead of the 50.72 column.
- Generic Letter 91-18, which is listed on pages 25, 54, and 81, has been superseded by RIS 2005-20.
- An example 4 is listed on page 37, while the next example listed on page 38 is numbered as 6.
- An example 6 is listed on page 51, while the next example listed on page 52 is also numbered as 6.
- The word "switching" is misspelled on page 77 in the last sentence of the third paragraph.
- Section 4.2.1 on page 88 and section 5.2.7 on page 106 incorrectly reference section. The correct reference should be section 2.5.
- Section 5.1.4 on page 92 incorrectly references section 5.2.4(5). The correct reference should be section 5.2.7(6).
- Section 5.2.4 on page 104 incorrectly references section 5.1.6. The correct reference should be section 5.1.5.
- Section 5.2.6 on page 106 incorrectly references section 5.1.10. The correct reference should be section 5.1.9.
- Section 5.2.7(7) on page 107 and section 5.2.7(15) on page 111 incorrectly reference section 5.2.4(4). The correct reference should be section 5.2.7(5).

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- Section 5.2.7(8) on page 108 incorrectly references sections 5.2.4(1) and 5.2.4(2). The correct references should be sections 5.2.7(1) and 5.2.7(2).
- The term “(4) Safety System Responses” on page 102 needs to be deleted.

General Considerations

NRC Item 1:

Consider revising the examples in each section so that only reporting criteria discussed within that section are evaluated against. For instance, the examples in the section titled “Plant Shutdown Required by Technical Specifications,” would only state at the end of each example whether or not a report is required under 50.72(b)(2)(i) and 50.73(a)(2)(i)(A). The NUREG examples currently take inconsistent approaches which can lead to confusion (i.e. some consider reportability under the entire rule, consider reportability only under the section of interest, some only evaluate against EN criteria, and some only evaluate against LER criteria).

Industry Response:

Industry is familiar with the current format and finds it beneficial. However, we believe industry could benefit by the addition of an appendix which contains additional and more thorough examples. We will provide those examples to NRC to determine if they believe an appendix is warranted.

Section 3.2.1 “Plant Shutdown Required by Technical Specifications”

NRC Item 2:

Potentially conflicting guidance identified. Page 31 states reportability includes “...initiation of any shutdown due to **expected inability** to restore equipment prior to exceeding the LCO action time.” Example 3 on page 32 has a heading that states “Failure that was or could have been corrected before shut down was required.” Under the heading is a question that states “What about the situation where you have seven days to fix a component or be shut down, but the plant **must** be shut down to fix the component? Assume the plant shuts down, the component is fixed, and the plant returns to power prior to the end of the seven day period. Is that situation reportable?” The NRC response is listed as “No.” If a plant must shut down to fix a component, couldn’t that be considered an expected inability to restore equipment prior to exceeding the LCO action time? The “expected inability” phrase was added in revision 2, while the example in its current form existed prior to revision 2. Consideration should be given to resolving the apparent conflict.

Industry Response:

We agree that NUREG-1022, Revision 2 added words which resulted in an inconsistency. Therefore, we recommend either remove the words added in Revision 2 or delete example 3.

Section 3.2.2 “Operation or Condition Prohibited by Technical Specifications”

NRC Item 3:

Potentially conflicting guidance identified. Page 34 states “Certain technical specifications contain LCO statements that include action statements [required actions and associated

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completion time in the Improved Standard Technical Specifications (ISTS)] to provide constraints on the length of time components or systems may remain inoperable or out of service **before** the plant must shut down or other compensatory measures must be taken. ...An LER is required if a condition existed for a time longer than permitted by the technical specifications [i.e., greater than the allowed outage time (or completion time in ISTS)] even if the condition was not discovered until after the allowable time had elapsed and the condition was rectified immediately upon discovery.” As a result, it may be construed that if **any** Completion Time is exceeded, it is reportable. However, example 1 on page 36 appears to include the shutdown time as part of the determination for reportability. Example 1 states “An LER was required because the condition existed longer than allowed by the technical specifications (7-day LCO allowed outage time **and** the shutdown action statement time of 8 hours).” The guidance and any associated examples should all be consistent regarding when to report exceeded completion times (i.e. factor in or do not factor in shutdown completion times, including LCO 3.0.3 completion times, which allow for additional time).

Industry Response:

We agree with NRC that some inconsistency exists regarding when to report exceeded completion times. Therefore, we recommend a change to include the shutdown allowance in the total completion time consistent with example 1.

NRC Item 4:

Potentially confusing guidance identified. Page 34 contains a discussion on “Technical Specification Surveillance Testing.” Guidance is provided for “testing that is conducted within the required time (i.e., the surveillance interval plus any allowed extension)...” When considering the entire context of the discussion contained in “Technical Specification Surveillance Testing,” it appears, but is not explicit, that the allowed extension refers to STS SR 3.0.2 (or its equivalent), and not SR 3.0.3 (or its equivalent). SR 3.0.2 deals with extensions and SR 3.0.3 deals with late SRs. Both allow for additional time to the stated Frequency before having to declare equipment inoperable. With regards to the guidance, the distinction is important since it determines when the discrepancy first occurred in the absence of any firm evidence. Consideration should be given to clarifying the guidance.

Industry Response:

The industry believes the existing guidance provided is clear.

NRC Item 5:

Potentially conflicting guidance identified. Page 35 states “In cases where it is discovered that a surveillance test was not performed within its specified frequency or interval, some plants have technical specifications which allow a delay of up to 24 hours in declaring an LCO or technical specifications requirements not met.” Currently, a licensee can potentially relax this TS requirement via adoption of TSTF358 which modifies SR 3.0.3. Performance of the missed surveillance could now be possibly delayed up to the limit of the specified Frequency. In order to minimize the disparities that may result from having multiple documents with specific guidance on the same topic, NUREG-1022 should simply point out that licensee’s may have TS on late SRs (i.e. SR 3.0.3 or its equivalent).

Industry Response:

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Industry agrees that NUREG-1022 should simply point out that licensee's may have TS on late SRs (e.g., via adoption of TSTF-358). Therefore, we recommend delete "of up to 24 hours" to resolve this item.

NRC Item 6:

Potentially confusing guidance identified. Page 35 has a discussion on tests required by ASME Section XI and states "Standard technical specifications (STS) Section 4.0.5 (or an equivalent) covers these testing requirements." Although some licensees still retain SR 4.0.5, the current STS do not contain SR 4.0.5 and has the inservice testing requirements captured in the Administration Section of the TS. NUREG-1022 should be updated to reflect that regardless of how the TS capture ASME requirements, an operation or condition prohibited by the TS existed and is reportable if the inservice testing indicates that equipment was inoperable for a period of time longer than allowed by TS.

Industry Response:

Industry agrees that this section of the guidance is potentially confusing. Therefore, we recommend deleting the sentence, "Standard technical specifications (STS) Section 4.0.5 (or an equivalent) covers these testing requirements" to resolve any potential confusion.

NRC Item 7:

Potentially redundant guidance identified. Administrative Requirements on page 35 references Section 6 of the old STS. Consideration should be given to just referencing the ISTS since it contains the current TS guidance. The NUREG already captures the fact that "an equivalent" section may exist for plant specific TS.

Industry Response:

Industry agrees that it would be appropriate to reference the ISTS with the understanding that some plants retain STS and the reference switch would in no way obligate those plants to any additional requirements outside of their current STS.

NRC Item 8:

Potentially confusing guidance identified. The discussion on "Entry into LCO 3.0.3" on page 36 does not contain the bases for why such reports are required. It is not intuitively obvious why such reports are required or how to apply the guidance to plants that may have custom TS. Page 142 of document ADAMS ML081830534 contains the bases for why such reports are required. The bases discussion should be included in the NUREG.

Industry Response:

Industry agrees that some confusion exists in this section of the NUREG. Therefore, we have provided a detailed markup of this section of the guidance in the attachment for clarification. The markup is consistent with page 142 of ADAMS ML081830534.

The following is an excerpt from page 142 of ML081830534 (*italicized text within brackets have been added as comments*):

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Entry Into Technical Specification 3.0.3 or Its Equivalent:

TS 3.0.3 establishes requirements for actions to be taken when an LCO is not met and: (1) the associated actions are not met, (2) the associated actions direct entry into TS/LCO 3.0.3, or (3) no associated actions are provided. From Mode 1 (Power Operation), TS 3.0.3 typically requires initiation of plant shutdown within 1 hour [to place the unit in Mode 2 (Startup) within 7 hours, Mode 3 (Hot Shutdown) within 13 hours, and Mode 4 (Cold Shutdown) within 37 hours, as applicable]. The current reporting guidelines in NUREG-1022 [*this refers to NUREG 1022 Rev 1*] indicate that entry into Technical Specification 3.0.3 or its equivalent for any reason is reportable as an "operation or condition prohibited by the plant's technical specifications." Most commenters recommended placing some limitations on the reportability of these events. The draft final rule takes the following approach:

- Entry into TS 3.0.3 is not necessarily reportable.
- The event becomes reportable when a required shutdown is initiated. [*this is a reportable event required by 50.72, as an initiation of a shutdown required by TS*]

NRC Item 9:

Potentially redundant guidance identified. Example 2 on page 36 references the older STS. Consideration should be given to just referencing the ISTS since it contains the current TS guidance. The example could capture the fact that "an equivalent" may exist for plant specific TS.

Industry Response:

Industry agrees that it would be appropriate to reference the ISTS with the understanding that some plants retain STS and the reference switch would in no way obligate those plants to any additional requirements outside of their current STS.

NRC Item 10:

Potentially conflicting guidance identified. Example 4 on page 37 does not take into account recent changes to the STS. TSTF-372 adds LCO 3.0.8, which would allow some time before having to declare supported systems inoperable due to inadequate snubbers. The example should reflect the recent changes to the STS. Section 3.2.3 "Deviation from Technical Specification under 50.54(x)"

Industry Response:

Industry has reviewed this section and has not identified any areas of concern or any areas where the industry has been reporting improperly because of this wording. Therefore, we recommend leaving this section of the guidance as it. In addition, some plants have not adopted LCO 3.0.8 and this would be an inappropriate statement to add for those plants. The addition of LCO 3.0.8 would clearly be an addition to the NUREG that was not previously adjudicated.

NRC Item 11:

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Potentially conflicting guidance identified. The rule requires reporting of any deviation from the plant's **Technical Specifications** authorized pursuant to 50.54(x). However, page 38 states "10 CFR 50.54(x) generally permits licensees to take reasonable action in an emergency even though the action departs from the **license conditions** or plant technical specifications if (1) the action is immediately needed to protect the public health and safety, including plant personnel, and (2) no action consistent with the license conditions and technical specifications is immediately apparent that can provide adequate or equivalent protection. Deviations authorized pursuant to 10 CFR 50.54(x) are reportable under this criterion." The guidance on page 38 is taken from the statements of consideration (48 CFR 39042 [first column]). The intent was to report any deviations authorized pursuant to 50.54(x), however the rule inadvertently only states TS. Consideration should be given to resolving the apparent conflict.

Industry Response:

Industry agrees with NRC that the Rule and the NUREG do not match. However, this requires a Rule change to expand it to require reporting any deviations authorized pursuant to 50.54(x). In lieu of a Rule change, industry suggests that the NUREG be modified to match the existing Rule (see Attachments 1 / 2).

NRC Item 12:

Potentially confusing guidance identified. It is unclear why the example listed at the bottom of page 38 is a deviation from TS under 50.54(x). Consideration should be given to clarifying the example or considering a new one if needed.

Industry Response:

This example is not needed and adds little value to the NUREG discussion. Therefore, we recommend deleting the example.

Section 3.2.4 "Degraded or Unanalyzed Condition"

NRC Item 13:

Potentially conflicting guidance identified. Page 40 contains a discussion on a reportable condition that deals with steam generator tube integrity. The guidance is now found in many licensees' TS as a result of adoption of TSTF-449. In order to minimize the disparities that may result from having two documents with guidance on the same topic, consideration should be given to having the NUREG simply point out that licensees contain TS for steam generator tube integrity.

Industry Response:

Industry believes this section of the guidance is beneficial and recommends it remain as is since it provides useful information on the use of allowable thresholds.

NRC Item 14:

Potentially confusing guidance identified. Page 40 contains a discussion of a reportable condition and states "Low temperature over pressure transients where the pressure-

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temperature relationship violates pressure-temperature limits derived from Appendix G to 10 CFR Part 50 (e.g., TS pressure-temperature curves)." The pressure-temperature curves are no longer contained in the STS, but are referenced through the Pressure Temperature Limit Report. The discussion should reflect the recent changes to the STS.

Industry Response:

Industry agrees that the parenthetical phrase "(e.g., TS pressure-temperature curves)" could add confusion to the NUREG guidance and it is not important to the point being made in this section. We also believe that the addition of recent changes to the STS would be an addition to the NUREG which would constitute more than a clarification to remove confusion. Therefore, we recommend removing this parenthetical to ensure the intent of resolving any confusion does not inadvertently result in an addition to the NUREG.

NRC Item 15:

Potentially confusing guidance identified. Page 40 contains a discussion of a reportable condition and states "Loss of containment function or integrity, including containment leak rate tests where the total containment as-found, minimum-pathway leak rate exceeds the limiting condition for operation (LCO) in the facility's TS." However, in the STS, only containment integrity actually contains an LCO. The leak rate test is actually found as part of program referenced through a SR (i.e. not a LCO). The discussion should reflect the recent changes to the STS.

Industry Response:

Industry agrees that the reference to an LCO that STS plants do not have could be confusing. Therefore, we recommend changing the words to "...exceeds the limit in the facility's TS." This will ensure the intent of resolving any confusion does not inadvertently result in an addition to the NUREG by adding recent changes to the STS that have not through the proper NUREG-1022 reviews.

NRC Item 16:

Potentially confusing guidance identified. Page 41 states "The level of significance of these cases generally corresponds to the inability to perform a required safety function." Clarification should be considered for how, or even if, operability and functionality determinations come into play when considering the above statement.

Industry Response:

This phrase is not necessarily referring to TS operability. As noted in the response to NRC Item 29 the concepts of operability and reportability are similar but different.

Section 3.2.5 "External Threat or Hampering"

NRC Item 17:

Potentially confusing guidance identified. It is unclear why the event in example 1 on page 44 is not considered an actual threat. Consideration should be given to clarifying the guidance.

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Industry Response:

The industry has marked up Example 1 to clarify the basis for why this event is not considered a threat "...because it did not challenge design limits or significantly hamper site personnel in the performance of their duties."

NRC Item 18:

Potentially confusing guidance identified. It is unclear why the events in examples 2 and 3 on pages 44 and 45 are considered actual threats. Consideration should be given to clarifying the guidance.

Industry Response:

Industry has marked up examples 2 and 3 to clarify the basis for why these events should be considered threats (See Attachments 1 / 2).

NRC Item 19:

Potentially confusing guidance identified. The Discussion section starting on page 43 does not mention reportability of other criterion within the rule as constituting a potential bases for reporting under External Threat or Hampering. Examples 2 and 3 on pages 44 and 45 consider that, in part, since several other reporting criteria were satisfied, a LER was required under External Threat or Hampering. The Discussion section and the examples should be consistent.

Industry Response:

Industry believes the examples and discussion section are consistent but are open to any clarifications NRC proposes that do not result in a change to the intent of the NUREG.

Section 3.2.6 "System Actuation"

NRC Item 20:

Potentially confusing guidance identified. It is unclear what the difference is between 50.72(b)(2)(iv)(A) and 50.72(b)(3)(iv)(A) with regards to ECCS actuation. The statements of consideration, as well as the NUREG, do not appear to offer any insight. In the 2000 rule change, RPS reportability under 50.72(b)(2)(iv)(A) and 50.72(b)(3)(iv)(A) was differentiated by the status of the reactor. However, no differentiation for ECCS appears to have been considered. Consideration should be given to clarifying the guidance.

Industry Response:

Industry notes an important distinction between the above mentioned Part 50.72 sections: which is that one is discussing actuation and one is discussing injection. Therefore, we do not believe that this section requires any clarification and that any proposed changes for ECCS would be (as NRC states above) a change to the NUREG not previously considered and would require rulemaking to add this change to the NUREG.

NRC Item 21:

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Potentially confusing guidance identified. There has been some confusion regarding the reportability of unplanned actuations in a Mode in which operability was not required. The confusion stems from the statement on page 49 which states “Valid signals are those signals that are initiated in response to actual plant conditions or parameters satisfying the requirements for initiation of **the safety function of the system.**” It is unclear why the term “safety function” was added in Revision 2. Based on the statements of consideration for the rule, system classification, and therefore Mode, appears to have no bearing on the reportability of unplanned actuations (subject to the exceptions stated in 50.73(a)(2)(iv)(A)(2)). Comment B in the 2000 statement of considerations (65 FR 63770) states “The principal reason for reporting an actuation of one of these systems is that it is indicative of an unplanned plant transient that the NRC needs to evaluate to determine if action is necessary to address a safety problem. In this context, the NRC's need to evaluate the event is **independent** of classification of the system.” The 2000 statement of considerations (65 FR 63783 [second column]) also states “A valid signal is one that results from actual plant conditions or parameters satisfying the requirements for **system actuation.**” The NUREG should be clarified to reflect the intent of the rule.

Industry Response:

Industry understands NRC's need to ensure that they have the proper information to determine if action is needed to address safety issues. However, we do not believe this section had lead to improper reporting and industry does not find this section of the guidance confusing. In fact, we believe that the NUREG does properly reflect the intent of the rule and any change to this section would be an addition to the NUREG that was not previously adjudicated.

Section 3.2.7 “Event or Condition that Could Have Prevented Fulfillment of a Safety Function”

NRC Item 22:

Potentially confusing guidance identified. Page 54 states “The definition of the systems included in the scope of these criteria is provided in the rules themselves. It includes systems required by the TS to be operable to perform one of the four functions (A) through (D) specified in the rule. It is not determined by the phrases ‘safety-related,’ ‘important to safety,’ or ‘ESF.’” The underlined portion was added in 2000 and its relevance to non-TS systems is unclear (i.e. does the statement exclude non-TS systems or was it simply added just to set a boundary on TS systems). General information can be found that supports either case, however no specific documented bases can be found. Consideration should be given to clarifying the guidance.

Industry Response:

Industry agrees that some confusion exists in this section of the NUREG. Therefore, we have provided a detailed markup of this section of the guidance in the attachment for clarification. Also see industry position paper “NEI NUREG 1022 Team Position Paper, Safety System Functional Failures – Systems within Scope” (Attachment 3).

NRC Item 23:

Potentially conflicting guidance identified. Page 54 states “The definition of the systems included in the scope of these criteria is provided in the rules themselves. It includes **systems** required by the TS to be operable to perform one of the four functions (A) through (D) specified in the rule.” This appears to be inconsistent with other guidance found in NUREG-1022 and the rule

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itself. The rule itself mentions **structures and systems** while page 54 of NUREG-1022 states “These criteria cover an event or condition where **structures, components, or trains** of a safety system could have failed to perform their intended function.” Issues have arisen in which redundant components/structures in a single support LCO were declared inoperable, but there was a belief that the event was not reportable since the supported LCO system was not declared inoperable. Consideration should be given to having the NUREG reflect the rule which states structures and systems.

Industry Response:

This comment is addressed by the attached markup. In general, the industry recognizes that the terms systems, structures, and components are interchangeable.

NRC Item 24:

Potential need for additional guidance identified. Recent events have been misreported due to inappropriately crediting operator actions for restoration after a system has been lost or using risk arguments to inappropriately justify that the effects of the system loss are small or negligible. The use of operator actions in lieu of automatic actions, the length of time that a system is inoperable, or its immediate consequences are not considered or discussed in any staff guidance on reportability under 50.72(b)(3)(v) and 50.73(a)(2)(v). The rule is clear in that events covered may include one or more procedural personnel errors, equipment failures, and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, **individual component failures need not be reported if redundant equipment in the same system was operable** and available to perform the required safety function. Consideration should be given to adding guidance to the NUREG that would reflect the above concerns with regards to the current rule.

Industry Response:

Industry agrees that some confusion exists in this section of the NUREG and has addressed this confusion by clarifications in the attached markup. Also see industry position paper “NEI NUREG 1022 Team Position Paper, Engineering Judgment and Reasonable Operator Actions” (Attachment 4).

NRC Item 25:

Potentially conflicting guidance identified. Page 57 states “The following types of events or conditions generally are not reportable under this criterion: a procedure error that could have resulted in defeating the safety function of multiple trains or channels but was discovered before procedure approval.” This guidance appears to conflict with 50.72(b)(3)(vi) and 50.73(a)(2)(vi) which state, in part, “However, individual component failures need not be reported if redundant equipment in the same system was operable and available to perform the required safety function.” It is unclear how an approved procedure that has not yet been physically applied can result in an event or condition where there is a reasonable expectation of preventing fulfillment of a safety function or lead to the declaration of system inoperability. Consideration should be given to resolving the apparent conflict.

Industry Response:

The 3rd bullet under the reportable list had been clarified to address this concern (see

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attached industry markup). If an accident were to occur and an approved and ready for use procedure when implemented would have prevented fulfillment of the safety function this would be reportable.

NRC Item 26:

Potentially conflicting guidance identified. Page 54 states “The definition of the systems included in the scope of these criteria is provided in the rules themselves. It includes systems required by the TS to be operable to perform one of the four functions (A) through (D) specified in the rule. ***It is not determined by the phrases ‘safety-related,’ ‘important to safety,’ or ‘ESF.’***” Page 54 also states “The term ‘safety function’ refers to any of the four functions (A through D) listed in these reporting criteria that are required during ***any plant mode*** or accident situation as described or relied on in the plant safety analysis report or ***required by the regulations.***” This guidance first appears in Supplement 1 of NUREG-1022, Revision 0 (published in February 1984) and NUREG-1022, Revision 1 (published in January 1998). This guidance, which was carried forward into Revision 2, appears to be inconsistent with the 1983 statements of consideration for the rule (48 FR 39044 and 48 FR 33854). The statements of consideration state, in part, that the rule “is based on the assumption that safety-related systems and structures are intended to mitigate the consequences of an accident.” Example 2 on page 57, which deals with reportability of RCIC, contains discussions which reflect guidance found in RIS 200114 and a Task Interface Agreement (TIA) (ADAMS Number ML010740339). The discussions found in the TIA and RIS 2001-14 involve RCIC and appear to be consistent with the statement of considerations for the 1983 rule change, but do not address the NUREG guidance found on page 54 and highlighted above. As a result, it appears that two sets of conflicting guidance are in effect for reportability of RCIC losses. Consideration should be given to resolving the apparent conflict. Assuming the guidance in the TIA, the RIS, and the 1983 statements of consideration prevail, it is also unclear how a report would ever be filed solely under any of the other functions (A) through (C) of the rule.

Industry Response:

Industry agrees that some confusion exists in this section of the NUREG. Therefore, we have provided a detailed markup of this section of the guidance in the attachment for clarification. Also see industry position paper “Safety System Functional Failures, Criterion D, “Mitigate the Consequences of an Accident” (Attachment 5).

NRC Item 27:

Potentially conflicting guidance identified. Page 54 states “The definition of the systems included in the scope of these criteria is provided in the rules themselves. It includes systems required by the TS to be operable to perform one of the four functions (A) through (D) specified in the rule. It is not determined by the phrases ‘safety-related,’ ‘important to safety,’ or ‘ESF.’” Page 54 also states “The term ‘safety function’ refers to any of the four functions (A through D) listed in these reporting criteria that are required during any plant mode or accident situation as described or relied on in the plant safety analysis report or required by the regulations.” Neither statement contains any discussion regarding “single failure criterion” as a bases for reportability. Example 3 on page 58 states “Question: There are a number of environmental systems in a plant dealing with such things as low level waste (e.g., gaseous radwaste tanks). Many of these systems are not required to meet the single failure criterion so a single failure results in the loss of function of the system. Are all of these systems covered within the scope of the LER rule? Answer: If such systems are required by Technical Specifications to be operational and the system is needed to

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fulfill one of the safety functions identified in this section of the rule then system level failures are reportable. If the system is not covered by Technical Specifications **and is not required to meet the single failure criterion**, then failures of the system are not reportable under this criterion.” Example 3 was derived from Example 7.13 in Supplement 1 of NUREG-1022, Revision 0. Example 7.13 provides additional information and states “If the system is not covered by Technical Specifications and is not required to meet the single failure criterion, then the system does not perform a ‘safety function’ in the context of the LER rule and failures of the system are not reportable.” However, the bases for the response to Example 7.13 is unclear. Consideration should be given to resolving the apparent conflict.

Industry Response:

Industry agrees that some confusion may exist and has provided a markup (see below) of example 3 to be consistent with changes identified earlier in section 3.2.7. Therefore, we recommend changing example 3 as marked up below.

Answer: If such systems are required by to perform a safety function assumed as required in the plant’s accident analysis to perform one of the four functions (A) through (D) specified in the rule Technical Specifications to be operational and the system is needed to fulfill one of the safety functions identified in this section of the rule then system level failures are reportable. If the system is not covered by Technical Specifications **and is not required to meet the single failure criterion**, then failures of the system are not reportable under this criterion.

NRC Item 28:

Potentially conflicting guidance identified. Example 14 on page 61 does not appear to be updated to reflect the 2000 rule change (65 FR 63783). Per the 2000 rule change, EN’s only needed to be considered for “at time of discovery.” Example 14 states “Removing both SI pumps from service to do maintenance is not reportable if the resulting system configuration is not prohibited by the plant’s technical specifications. However, if a situation is discovered during maintenance that could have caused both pumps to fail, (e.g., they are both improperly lubricated) then that condition is reportable even though the pumps were not required to be operational at the time that the condition was discovered.” As a reference, Example 9 on page 60 provides a similar example that was updated in Revision 2. Example 14 should be updated to reflect the 2000 rule change.

Industry Response:

Industry agrees that if a situation is discovered during maintenance that would have caused both pumps to fail then the condition is reportable even though the pumps were not required to be operational at the time that the condition was discovered. Therefore, we have provided clarifications in the attachment.

NRC Item 29:

Potential need for additional guidance identified. 50.72(b)(3)(vi) and 50.73(a)(2)(vi) state, in part, that individual component failures need not be reported if redundant equipment in the same system was operable and available to perform the required safety function. Page 54 states “In determining the reportability of an event or condition that affects a system, it is not necessary to assume an additional random single failure in that system.” There has been recent confusion

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regarding reportability of events where systems were inoperable as a result of TS required actions that consider the potential for an additional single failure as a bases for taking such actions (i.e. Action A.2 of STS LCO 3.8.1 in NUREG-1431). Example 7.8 in Supplement 1 of NUREG-1022, Revision 0, considered that such a scenario was reportable. Although this example was not carried forward in subsequent NUREG revisions, there does not appear to be any information in the subsequent rule or NUREG changes that would render the discussion in Example 7.8 as invalid. Clarification should be provided.

Industry Response:

Industry has maintained throughout all the NUREG revisions that while the concepts of operability and reportability are similar, there are some important differences between the two. Understanding these differences is key to understanding this section. For example a system may not be operable but still be NOT reportable. A pump could fail a TS Surveillance flow requirement of 3000 gpm with a flow rate of 2990gpm. In this case the inoperable system is fully capable of meeting the scope / functions assumed in accident analysis and therefore would NOT be reportable. However, any changes to align operability and reportability in the NUREG would be a clear change to the NUREG as well as to industries implementation of the NUREG and would require the proper review process and an cost benefit analysis to complete this change.

NRC Item 30:

Potential need for additional guidance identified. 50.72(b)(3)(vi) and 50.73(a)(2)(vi) state, in part, that individual component failures need not be reported if redundant equipment in the same system was operable and available to perform the required safety function. There has been recent confusion regarding the role that engineering evaluations and post maintenance testing results have with regards to EN retractions (i.e. Although operators made a call, can a revised operability determination be made that questions whether or not the inoperability at a system level ever really existed?) Example 5 on page 58 involves post maintenance testing, and states that the event is reportable. The example does not consider the aspect of test results when determining reportability. Clarification should be provided.

Industry Response:

Immediate operability determinations are based on best available information. If you have redundant equipment in the same system that can perform the safety function it is not reportable.

Section 3.2.8 “Common-cause Inoperability of Independent Trains or Channels”

NRC Item 31:

Potentially conflicting guidance identified. Example 3 on page 66 does not take into account recent changes to the STS. TSTF-372 adds LCO 3.0.8, which would allow some time before having to declare supported systems inoperable due to inadequate snubbers. The example should reflect the recent changes to the STS).

Industry Response:

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Industry has reviewed this section and has not identified any areas of concern or any areas where the industry has been reporting improperly because of this wording. Therefore, we recommend leaving this section of the guidance as it. In addition, some plants have not adopted LCO 3.0.8 and this would be an inappropriate statement to add for those plants. The addition of LCO 3.0.8 would clearly be an addition to the NUREG that was not previously adjudicated. It would be confusing to address every possible situation.

Section 3.2.9 “Radioactive Release”

NRC Item 32:

Potentially conflicting guidance identified. The 2000 rule (65 FR 63783) eliminated ENs for Radioactive Releases. Page 68 states “If estimates determine that the release has exceeded the reporting criterion, an ENS notification is required, followed up by a more precise estimate in the LER. If it is later determined that the release was less than this criterion, the ENS notification may be retracted.” The NUREG should reflect the 2000 rule change.

Industry Response:

Industry agrees that this NUREG should reflect the 2000 Rule change and that an ENS notification is required if the release has exceeded the reporting criterion and it can be later retracted should it later be determined that the release was less than this criterion. Therefore, we recommend the deletion of paragraph number 5 in the discussion section to clarify this.

NRC Item 33:

Potentially conflicting guidance identified. Page 67 states “As indicated in Generic Letter 85-19, September 27, 1985, ‘Reporting Requirements on Primary Coolant Iodine Spikes,’ primary coolant iodine spike releases need not be reported on a short term basis.” It is unclear how GL 85-19 directly relates to reportability under 50.73(a)(2)(viii). GL 85-19 appears to discuss the elimination of the need to report running totals of high iodine concentrations in the reactor coolant. There does not appear to be a discussion on eliminating requirements to report radioactive releases to unrestricted areas. Consideration should be given to resolving the apparent conflict.

Industry Response:

Industry agrees that primary coolant iodine spike releases need not be reported on a short term basis and this is consistent with how industry has been reporting. Therefore, we recommend the deletion of paragraph number 6 in the discussion section for clarification.

Section 3.2.10 “Internal Threat or Hampering”

No items noted.

Section 3.2.11 “Transport of a Contaminated Person Offsite”

No items noted.

Section 3.2.12 “News Release or Notification of Other Government Agency”

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NRC Item 34:

Potential need for additional guidance identified. 10 CFR 50.72(b)(2)(xi) states “Any event or situation, related to the health and safety of the public or on-site personnel, or protection of the environment, for which a news release is **planned** or notification to other government agencies has been **or will be** made. Such an event may include an on-site fatality or inadvertent release of radioactively contaminated materials.” There has been recent confusion regarding when the clock starts for reporting under this criterion. Clarification should be provided.

Industry Response:

Industry agrees that the clock starts when the ‘authorized’ person makes the decision and has provided a markup of this section of the NUREG to clarify this.

Section 3.2.13 “Loss of Emergency Preparedness Capabilities”

NRC Item 35:

Potentially conflicting guidance identified. Page 75 states “If not reported under § 50.72(a), (b)(1) or (b)(2), an ENS notification is required under (b)(3) for a major loss of their emergency assessment, offsite response, or communications capability.” However, there is no indication that this is an 8 hr report (i.e. as soon as practical and in all cases within eight hours). Also, starting at the bottom of page 76, there is a statement that says “If the alert systems, e.g., sirens, are owned and/or maintained by others, the licensee should take reasonable measures to remain informed and must notify the NRC if a large number of sirens fail. Although the loss of a single siren for a short time is not a major loss of offsite response capability, the loss of a large number of sirens, other alerting systems (e.g., tone alert radios), or more importantly, the lost capability to alert a large segment of the population for 1 hour would warrant an **immediate** notification.” Consideration should be given to resolving the apparent conflict.

Industry Response:

Industry has consistently acknowledged this scenerio to require an 8-hour report, which is an immediate notification, should a large segment of the population of sirens be lost for 1-hour. Therefore, we recommend no change to this section.

NRC Item 36:

Potentially confusing guidance identified. Pages 75-79 contain guidance for reporting a loss of communication capabilities. The guidance and examples mention a lot of specific systems and generic communications that may be outdated. Consider if the information needs updating and revise NUREG accordingly.

Industry Response:

The industry agrees that this section is outdated and will work with the NRC to address this concern in upcoming public meetings.

NRC Item 37:

Potentially conflicting guidance identified. Page 77 states “If the Operations Center notifies the

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licensee that an ENS line is inoperable, there is no need for a subsequent licensee notification. Loss of either ENS **or** HPN **does not** generate an event report.” There is also guidance on page 77 that states “In a similar manner, if the NRC supplied telephone line or modem used for ERDS is inoperable, the NRC operations center should be informed so that repairs can be ordered. However, this **does not** generate an event report.” However, other discussions on page 77 state “A major loss of communications capability may include the loss of ENS, HPN and/or other offsite communication systems.” Also, example 2 on page 78 discusses how a loss of the ENS and Commercial Telephone System is reportable. As a result, it is unclear what losses constitute a report. Consideration should be given to resolving the apparent conflict.

Industry Response:

The industry agrees that this section is outdated and will work with the NRC to address this concern in upcoming public meetings.

NRC Item 38:

Potentially confusing guidance identified. Regarding the public prompt notification system, page 78 states “An ENS notification is required because of the major loss of offsite response capability, i.e., the public prompt notification system. However, licensees may use engineering judgment in determining reportability (i.e., a “major loss”) based upon such factors as the percent of the population not covered by emergency sirens and the existence of procedures or practices to compensate for the lost emergency sirens.” There has been recent confusion as to how a “major loss” is determined. Consideration should be given to clarifying the guidance if possible.

Industry Response:

A ‘major loss’ is based on site specific evaluations. Attempts to clarify this section by adding ‘site specific information’ will potentially make this section very confusing. Therefore, we recommend no change to this section.

3.2.14 Single Cause that Could Have Prevented Fulfillment of the Safety Functions of Trains or Channels in Different Systems

NRC Item 39:

Potentially confusing guidance identified. **50.73(a)(2)(ix)(B)** states “However, licensees are **not required to report** an event pursuant to paragraph (ix)(A) of this section if the event results from: (1) **A shared dependency** among trains or channels that is a natural or expected consequence of the approved plant design.” However, the above statement in the rule appears to conflict with the bases for why the rule was created. Page 79 contains passages from the statements of consideration (65 FR 63781) which states, in part, “Subject to the two exclusions stated in the rule, this criterion captures those events where a single cause could have prevented the fulfillment of the safety function of multiple trains or channels, but the event: (2) **Would not be captured by 50.73(a)(2)(vii)** [common cause inoperability of independent trains or channels:] **because** the affected trains or channels are either: (a) **Not assumed to be independent** in the plant's safety analysis; or..” It is unclear how an event not reportable under 50.73(a)(2)(vii) because of an assumed dependence would be reportable under 50.73(a)(2)(ix). Consideration should be given to clarifying the guidance.

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Industry Response:

Examples provide adequate guidance, no clarification should be required.

NRC Item 40:

Potentially conflicting guidance identified. Page 79 contains passages from the statements of consideration (65 FR 63781) which states, in part “Subject to the two exclusions stated in the rule, this criterion captures those events where a single cause could have prevented the fulfillment of the safety function of multiple trains or channels, but the event: (2) **Would not be captured by 50.73(a)(2)(vii)** [common cause inoperability of independent trains or channels] **because the affected trains or channels are: (b) Not both considered to be inoperable.**” However, page 80 states that “The level of judgment for reporting an event or condition under this criterion is a reasonable expectation of preventing fulfillment of a safety function.” Since operability is also based on a reasonable expectation of preventing fulfillment of a safety function, it is unclear how a report could be made under 50.73(a)(2)(ix) if trains in question are considered to be operable. Consideration should be given to resolving the apparent conflict.

Industry Response:

We agree there is a conflict and the statements of consideration appear to be in error. No action required.

NRC Item 41:

Potentially confusing guidance identified. 50.73(a)(2)(ix) states, in part, “licensees are not required to report an event pursuant to paragraph (ix)(A) of this section if the event results from: (2) Normal and expected wear or degradation.” Page 80 appears to provide a bases and states “Similar to §§ 50.73(a)(2)(v) and 50.72(b)(3)(v), this criterion does not capture events or conditions that result from normal and expected wear or degradation. For example, consider pump bearing wear that is within the normal and expected range. In the case of two pumps in different systems, this criterion categorically excludes normal and expected wear. In the case of two pumps in the same system, normal and expected wear should be adequately addressed by normal plant operating and maintenance practices **and thus should not** indicate a reasonable expectation of preventing fulfillment of the safety function of the system.” Based on this reasoning, it is unclear why the exclusion was explicitly added to 50.73(a)(2)(ix) (i.e. if normal and expected wear or degradation does not result in preventing fulfillment of the safety function, then why even have the need to exempt it?). Consideration should be given to clarifying the guidance.

Industry Response:

The examples 6 and 7 clarify the rule as stated.

NRC Item 42:

Potentially confusing guidance identified. Page 80 states “Also, in contrast to §§ 50.73(a)(2)(v) and 50.72(b)(3)(v), this criterion does not apply to an event that results from a shared dependency among trains or channels that is a natural or expected consequence of the approved plant design. For example, this criterion does not capture failure of a common electrical power supply that disables Train A of AFW and Train A of HPSI, because their shared

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dependency on the single power supply is a natural or expected consequence of the approved plant design.” The stated example does not appear to clarify the differences between 50.73(a)(2)(v) & 50.72(b)(3)(v) and 50.73(a)(2)(ix)(B) regarding “dependency” since the example considers different systems which is not governed by 50.73(a)(2)(v) & 50.72(b)(3)(v). Consideration should be given for providing a better example.

Industry Response:

The subject rule requirement is for different systems, therefore the example should include different systems.

NRC Item 43:

Potentially conflicting guidance identified. Page 82 states “The following types of events or conditions generally are not reportable under this criterion: a procedure error that could have resulted in defeating the safety function of multiple trains or channels but was discovered before procedure approval.” It is unclear how even an approved procedure that is not yet physically applied can result in an event or condition where there is a reasonable expectation of preventing fulfillment of a safety function. Consideration should be given to resolving the apparent conflict.

Industry Response:

If an accident were to occur and an approved and ready for use procedure when implemented would have prevented fulfillment of the safety function of trains or channels in multiple systems this would be reportable.

NRC Item 44:

Potentially conflicting guidance identified. Example 1 on page 83 states “During testing, two containment isolation valves failed to function as a result of improper air gaps in the solenoid operated valves that controlled the supply of instrument air to the containment isolation valves. The valves were powered from the same electrical division. Thus, § 50.73(a)(2)(vii) [common cause inoperability of independent trains or channels] would not apply.” However, regarding 50.73(a)(2)(vii), page 65 states “Analysis of events reported under this part of the rule may identify **previously unrecognized** common-cause (or dependent) failures and system interactions.” The failure mode in Example 1 seems to fit this criterion (i.e. the failure is as a result of improper air gaps and does not appear related to the fact that the busses share the same electrical source). Consideration should be given to resolving the apparent conflict.

Industry Response:

Example 1 has been clarified to address this comment.

Other Sections

NRC Item 45:

Potentially confusing guidance identified. 10 CFR 50.72(a)(1)(ii) states “Each nuclear power reactor licensee licensed under §50.21(b) or §50.22 of this part shall notify the NRC Operations Center via the Emergency Notification System of those non-emergency events specified in paragraph (b) of this section **that occurred within three years of the date of discovery.**”

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Section 2.2 (page 23), Section 2.5 (pages 24 and 25), and Section 3.1.1 (pages 27 and 28) contain general discussions on reportability of ENs. None of these sections explicitly reflect the above requirements of the rule, and the information contained in these sections may lead one to inappropriately come to the conclusion that 50.72 applies only to events that are ongoing at the time of discovery. There have been recent cases in which it was believed that 50.72 applies only to events ongoing at the “time of discovery.” It should be noted that these cases did not involve loss of safety function per 50.72(b)(3)(v), which explicitly states “any event or condition that at the time of discovery...” Consideration should be given to clarifying the guidance.

Industry Response:

Industry has reviewed this section and notes that this applies to principle safety barriers and an unanalyzed condition. The tense in the current regulation is correct as stated and we do not believe that anyone has mis/underreported a loss of safety function (the required reporting condition) as a result. However, we have provided a markup of section 3.2.4 to add consistency with the Rule.