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SUBJECT: Comments on draft rev 1 to NUREG-1022, "Event Reporting Sys, 10CFR50.72 & 50.73."

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January 29, 1992

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U.S. Nuclear Regulatory Commission
Attn: Mr. David L. Meyer
Chief, Regulatory Publications Branch
Division of Freedom of Information
and Publication Services
Office of Administration
Washington, D.C. 20555

Subject: Rochester Gas and Electric Corporation
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Meyer:

Enclosed are comments on draft NUREG-1022, "Event Reporting Systems, 10CFR50.72 and 50.73". The comments are marked on the attached applicable pages of the draft NUREG. The upper case numbering on the comment pages indicate the NUREG section being addressed. A set of general comments is also provided.

Very truly yours,

Robert E. Smith

REJ/206
Enclosures

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NUREG 1022 DRAFT REV. 1

GENERAL COMMENTS

The following general comments are intended to represent viewpoints reflecting a consolidation of the specific comments provided.

1. The reporting of design discrepancies during DBD efforts that have not been evaluated for safety impact places additional resource burdens on utilities with no demonstratable increase in safety benefit.

2. Decreasing the "threshold" of reporting decreases the significance of the reportability process and over time will dilute its importance.

3. Most of data base information increase represents information already available through other sources such as inspection reports, SALP reports, Part 21 Reports, NPRDS, etc.

4. The NUREG guidance provided leads to some confusion and apparent contradictions in comparison with other NRC regulation in the CFR (e.g. 10CFR50.2, 10CFR50.59, 10CFR50.72 & .73, 10CFR50.109) and other NUREGs (e.g. NUREG 1397).

5. The contents of the proposed NUREG revision strongly suggests a change in rule without following the rule making process and indicates a significant increase in regulation without achieving a beneficial return.

REJ/027

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NUREG 1022 DRAFT REV. 1 COMMENTS

COMMENTS ON PAGE 13

2 REPORTING AREAS WARRANTING SPECIAL MENTION

(1) Engineering judgement has been recognized as a necessary and valid tool in reportability determinations since the promulgation of the rule. These deletions and additions are made to retain the actual original intent of the rule as reflected in the regulation and contemporaneous guidance.

Insert-13 (insert into Page 13)

The commission recognizes that engineering judgement is a necessary and valid approach to addressing specific issues and questions, including those related to reportability. This may result in some variation of interpretations, but so long as the judgement is reasonably applied, the variation is acceptable. However, the Commission believes licensees should carefully apply engineering judgement in all cases, taking into account (although not required by the rule) these considerations discussed below.

2 REPORTING AREAS WARRANTING SPECIAL MENTION

The clear intent of 10 CFR 50.72 and 50.73 and these guidelines is to ensure that all potentially safety significant events are promptly identified and evaluated for reporting to the NRC.

Experience with 10 CFR 50.72 and 50.73 since January 1984 has shown that events have not been reported as required in some instances (i.e., under reported). Under reporting by licensees is of particular concern for plant-specific events warranting NRC prompt response. Under reporting by licensees is also of concern because of the reduced likelihood of the industry or NRC identifying and feeding back appropriate lessons of experience.

In other instances, events were reported that were not required and had no apparent safety significance (i.e., over reported). Over reporting carries no similar risk but represents an unnecessary expenditure of NRC and licensee resources. Proper reporting is needed to improve the quality of operational response and analysis, facilitate identification of precursor events and generic issues, enhance statistical trends and patterns studies, and improve the value of performance indicators to monitor nuclear power plant performance.

This section provides guidelines to improve reporting that apply to both 10 CFR 50.72 and 50.73 unless specifically noted.

2.1 Engineering Judgment

The safety significance of many deficient conditions and events is self-evident and their reportability is readily determined. However, the safety significance of other conditions and events may not be readily apparent and may require investigation and evaluation. Engineering judgment and experience should be used in these instances to determine the safety significance and reportability on the basis of evolving, available evidence related to the condition or event.

Insert-13

The Statements of Consideration for the two rules stated that engineering judgment may be used to decide if an event is reportable. ~~At that time, the Commission believed that the concept was sufficiently clear and that explicit guidance was not necessary. Actual experience since the rules became effective indicates that engineering judgment can result in wide ranges of interpretation of the rules.~~ (1)

~~The intent of the rules was to provide event response capabilities and a coherent source of meaningful, reliable~~

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(1) see comments page 13

(2) The second item which the concept of engineering judgement is to include (per the draft NUREG) indicates that licensees should report based upon the implications of an event for another plant. Generic implications for other plants cannot be assessed by each licensee.

~~information on operational occurrences and problems to permit the analysis and necessary trending, and with resolution to identify safety significant problems. Implicit in the rules was the assumption that licensees would without reservation conservatively report applicable failures and problems and would report, even if a question of reportability existed, whenever plant safety is involved.~~ (1)

~~Another assumption was that the interpretation and implementation of the term "engineering judgment" would be reasonably consistent. This assumption was based on a concept of engineering judgment that would include the following:~~

- A person, or persons, whose education, training, and experience include the range and depth necessary to properly evaluate the applicable factors involved, including design bases, operational, and maintenance factors. Factors should be considered such as (1) dynamic response of accidents and off-normal conditions defined in the latest plant safety analysis report (i.e., final safety analysis report (FSAR) or updated safety analysis report (USAR)), (2) possible cumulative effect of missed or inadequate maintenance, and (3) effects of aging degradation. The evaluation should bound the failure or problem for which the judgment is made.

- An appropriate logic that includes applicable root-cause determinations and considers the generic aspects ~~(i.e., whether it can be a problem at another plant)~~ of the failure or problem, regardless of operational mode. (2)

- Either a documented engineering analysis or a judgment by a technically qualified individual depending on the complexity, seriousness, and nature of the event or condition. A documented engineering analysis is not a requirement as a basis for an engineering judgment for all events or conditions, but it would be appropriate for particularly complex situations requiring indepth analysis. In addition, although not required by the rule, it is consistent with good management controls to maintain a written record of the engineering judgment, including name, position, approvals of personnel involved, and basis of the judgment. Consideration also needs to be given to applicable requirements such as 10 CFR Part 50, Appendix B; plant technical specifications; and the latest plant safety analysis report.

Resident inspectors should be familiar with this concept of engineering judgment. If there is a difference of opinion between a licensee and a resident inspector, the matter should be resolved through the appropriate regional office.

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COMMENTS ON PAGE 15

2 REPORTING AREAS WARRANTING SPECIAL MENTION

(3) This is supported by the use of "or" in the third paragraph of this section.

(4) The NRC has recognized that licensee and NRC resources are required for each 10CFR50.72 and 50.73 report and that at times the number of LERs are used inappropriately to judge licensee performance. Reporting via a revision to an LER appropriately classifies similar events together and minimizes the resources expended while maintaining conservative reporting.

Additionally, NUREG-1022, Revision 0, Supplement 1, Question 14.13 indicated that a supplement is appropriate when an activity extends beyond the 30 days of the discovery of the first reportable failure. The guidance of the draft of NUREG-1022, Revision 1, can be construed as conflicting with Supplement 1 and as placing a new resource burden on licensees. The changes suggested would eliminate such confusion.

2.2 Differences in Tense Between 10 CFR 50.72 and 50.73

The present tense was used in 10 CFR 50.72 because the event or condition generally would be ongoing at the time of reporting. The past tense was used in 10 CFR 50.73 because the event or condition normally would be past when an LER was written.

This difference creates some confusion over the reportability under 10 CFR 50.72 of events not related to an ongoing event or discovered as the result of an event review. In other cases, questions are raised regarding the need for a 10 CFR 50.73 report. Where the tense is relevant to reportability, it is addressed in the specific criterion in Section 3 of this report.

2.3 Reporting Multiple Failures and Related Events

More than one failure or event may be reported in a single ENS notification or LER if (1) the failures or events are related (have the same general cause or consequences) ~~and~~ or (2) they occurred during a single activity (e.g., test program) over a reasonably short time (within the ENS reporting time limit for ENS reports, or within the first 30 days of discovery of the first reportable event for LER reporting). (3)

Generally, LERs are intended to address specific events and plant conditions. Thus, unrelated events or conditions should not be reported in one LER. Also, an LER revision should not be used to report subsequent failures of the same or like components~~; a new LER should be initiated to highlight the repetitive nature of the problem.~~ due to a different cause, or separate events or activities. (4)
Unrelated failures or events should be reported as separate ENS notifications to be given unique ENS numbers by the NRC. However, multiple ENS notifications may be addressed in a single telephone call.

2.4 Deficiencies Discovered During Design-Bases Documentation Reviews, Safety System Functional Inspections, and Other Licensee Engineering Reviews

Many licensees are currently performing extensive design-bases engineering review programs, safety system functional inspections (SSFIs), and other design-bases review initiatives. Guidelines for reporting of deficiencies identified by such initiatives are given below to ensure appropriate reporting thresholds. Reporting of the deficiencies is needed for NRC oversight activities, including the assessment of generic applicability to other nuclear power plants.

NUREG-1397, "An Assessment of Design Control Practices and Design Reconstitution Programs in the Nuclear Power Industry," February

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COMMENTS ON PAGE 16

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(5) This issue is addressed by the last paragraph on Page 21 of this draft NUREG, and therefore it is not necessary to include it here.

In addition, each discrepancy should be evaluated against all of the reporting criteria. Therefore, it is inappropriate at this point to identify specific sections of the rule as applicable.

(6) This clarification provides consistency with the first sentence of the paragraph introducing the examples ("The discovery date for deficiences identified in a design review is the time when it is determined that a condition exists that is reportable.").

1991, Section 4.3.2, notes that the reporting requirements specified in 10 CFR 50.9, 50.72, and 50.73 apply equally to discrepancies discovered during design document reconstitution (DDR) programs, design-bases documentation reviews (DBDRs), and similar engineering reviews.

NUREG-1397 further states that there is no basis for treating discrepancies discovered during such reviews differently from any other reportable item. Licensees should handle reporting suspected but unsubstantiated discrepancies discovered during such a review program in the same manner as other potentially reportable items. Therefore, the identification or determination of a reportable condition could require both an immediate notification (1-hour or 4-hour report, as applicable) and a 30-day written report. Reportability judgments for each potentially reportable item of such reviews should be made in a timeframe that is commensurate with the possible safety significance of the item (i.e., rapidly for design concerns having potentially high safety significance). To accomplish this goal, licensees should establish priorities and resources as necessary.

~~Reporting an unacceptable condition when it is discovered during a design review is required as specified in 10 CFR 50.72 or 50.73. The applicable paragraphs of 10 CFR 50.72 are (b)(1)(ii)(A), (B), (C), and (b)(2)(iii). The applicable paragraphs of 10 CFR 50.73 are (a)(2)(i)(B); (a)(2)(ii)(A), (B), (C); (a)(2)(v)(A), (B), (C); (a)(2)(vi); and (a)(2)(vii)(A), (B), (C).~~ (5)

The discovery date for deficiencies identified in a design review is the time when it is determined that a condition exists that is reportable. If the design review corrects a deficiency, that does not preclude reporting the condition. Two examples for determining appropriate discovery dates are given below.

- A licensee performed a design review of emergency diesel generator (EDG) loading and determined that the quantity of diesel fuel specified in its plant technical specifications is inadequate for the required time of EDG operation. Discovery occurs at the time that the inadequate condition is determined.

- A plant design review showed that numerous modifications had been made to conduit supports for safety equipment. The plant procedure required verification of adequate hanger capacity by reviewing the original calculations but did not require updating the original calculations for each modification. As a result, each modification added loads to the original calculations without regard to previous modifications. The review showed that one or more hangers were overloaded. Discovery occurs when the ~~first hanger is identified that exceeds the threshold of reportability under any of the~~ threshold of reportability under any of the criteria is met. (6)

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COMMENTS ON PAGE 17

2 REPORTING AREAS WARRANTING SPECIAL MENTION

(7) The NRC has recognized that licensee and NRC resources are required for each 10CFR50.72 and 50.73 report and that at times the number of LERs are used inappropriately to judge licensee performance. Reporting via a revision to an LER appropriately classifies similar events together and minimizes the resources expended while maintaining conservative reporting.

Additionally, NUREG-1022, Revision 0, Supplement 1, question 14.13 indicated that a supplement is appropriate when an activity extends beyond the 30 days of the discovery of the first reportable failure. The guidance of the draft of NUREG-1022, Revision 1, can be construed as conflicting with Supplement I and as placing a new resource burden on licensees. The changes suggested would eliminate such confusion.

(8) These changes make the sentence consistent with the Statements of Consideration for 10CFR50.9.

(9) The threat of enforcement is inappropriate. The last line of the paragraph should be deleted. Enforcement action is, of course, appropriate and possible whenever code requirements are not met.

(10) This issue is more appropriately addressed under the paragraphs of the rule discussed in Sections 3.3.3 and 3.3.4 of the draft NUREG. All of the other subjects addressed in Section 2 of the draft NUREG deal with the overall event reporting process, and deletion of Section 2.7 is consistent with that intent.

(11) Should the staff decide not to delete Section 2.7, it is recommended that it be rewritten as shown in Insert-17.

This section, as currently written, does not clearly address independent failure. Independent failures may not be reportable per 50.73(a)(2)(vi). However multiple independent failures do need to be evaluated with respect to the Technical Specification requirements to determine if a condition prohibited by Tech Specs exists (or existed) or a common cause is detrimental.

Insert-17 (insert into Page 17)

Multiple component failures may or may not be reportable. An assessment of multiple component failures should examine the root cause of failures as well as the effect and scope of the failures (i.e., failure rate). If the root cause assessment reveals a potential common cause mechanism, the failures would need to be evaluated for reportability under 50.73(a)(2)(vii) or any other applicable criteria.

In addition to looking for potential common cause, whenever assessing multiple component failures, licensees must evaluate the aggregate effects of independent individual failures. Although independent failures may not be reportable on an individual basis, when multiple failures occur their impact on systems should be evaluated for potential reportability under the applicable criteria.

Finally, the assessment of potential safety significance of the multiple failures should include an assessment of the failure rate. For example, if separate relay failures occurred over several months in different logic systems, yet the failure rate overall is consistent with industry reported failure rates, it could be concluded that no further investigation is warranted nor are the failures reportable under the common cause/common mode criterion. However, should the experienced failure rate exceed the industry average, further assessment of root cause and effect should be conducted as noted above to determine if a reportable condition exists.

have significant implications for public health and safety.

criteria noted above. The ENS notification is to include what is known at that time. The following LER may include similar overloaded hangers that are found during the design review. ~~during the 30-day period~~. (7)

2.5 10 CFR 50.9 Reporting

The stated intent for 10 CFR 50.9(a) is that information provided to the Commission by a licensee be complete and accurate in all material respects. Sections 50.72 and 50.73 have provisions for updating and revising reports that should be used to correct material incompleteness or inaccuracies that are discovered. For example, submittal of a revised LER is appropriate to correct any previously submitted inaccuracies of a material nature.

The stated intent for 10 CFR 50.9(b) is that any licensee information with significant health, safety, common defense, or security implications is to be reported to the NRC notwithstanding the absence of a specific reporting requirement. The Statements of Consideration for 10 CFR 50.9 refer to such licensee information as "residual information" that could ~~affect licensed activities~~. (8) Licensees may report such information under the LER format to give the information broad consideration, as discussed in Section 5.1.5 of this report.

The provisions of 10 CFR 50.9 should not be used to report information that is required to be reported under 10 CFR 50.72 or 50.73.

2.6 Events and Conditions Initially Communicated Verbally to NRC Staff or Identified by NRC Inspections

Some licensees erroneously believed that if a reportable event or condition had been discussed with the resident inspector or other NRC staff, there was no need to report under 10 CFR 50.72 and 50.73 because the NRC was aware of the situation. Some licensees also expressed a similar understanding for cases in which the NRC staff identified a reportable event or condition to the licensee via inspection or assessment activities. Such means do not satisfy the event reporting rules. The requirement is to report to the ENS and LER systems events or conditions meeting the criteria stated in the rules so that the events or conditions can receive structured NRC reviews set up for that purpose and they can be collected, stored, and retrieved as operating experience information. ~~Licensees not submitting information in accordance with the reporting rules are subject to enforcement action.~~ (9)

2.7 Multiple Component Failures During Surveillance Testing

Insert - 17 → ~~There have been numerous cases in which licensees have not reported multiple, sequentially discovered failures of systems or components occurring during planned testing. This situation was identified as a generic concern on April 13, 1985, in NRC~~ (10) (11)

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(10) See Comment (10) of Page 17.

(11) See Comment (11) of Page 17.

Information Notice (IN) 85-27 ("Notifications to the NRC Operations Center and Reporting Events in Licensee Event Reports") regarding the reportability of multiple events in accordance with §§50.72(b)(2)(iii), 50.73(a)(2)(i)(B), 50.73(a)(2)(v), and 50.73(a)(2)(vii). (10) (11)

IN 85-27 described multiple failures of a reactor protection system during control rod insertion testing of a reactor at power. One of the control rods stuck. Subsequent testing identified 3 additional rods that would not insert (scram) into the core and 11 control rods that had an initial hesitation before insertion. The licensee considered each failure as a single random failure; thus each was determined not to be reportable. Subsequent assessments indicated that the instrument air system, which was to be oil-free, was contaminated with oil that was causing the scram solenoid valves to fail. While the failure of a single rod to insert may not cause a reasonable doubt that other rods would fail to insert, the failure of more than one rod does cause a reasonable doubt that other rods could be affected, thus affecting the safety function of the rods.

A single component failure in a safety system is reportable if it is determined that the failure mechanism could reasonably be expected to occur in one or more redundant components and thereby prevent fulfillment of the system's safety function.

Some licensees have misinterpreted the reporting requirements and considered multiple failures of similar components (in which each component was inoperable during the required surveillance testing) as a series of individual events. They improperly reasoned that each individual component failure, in itself, was not reportable. The proper interpretation is to assume that such multiple failures or inoperabilities concurrently existed (particularly because of the short interval between each test) and are therefore reportable.

Another example of an improper determination of reportability involved the sequential testing of main steam safety valves. Of the 20 safety relief valves tested, 17 were out of tolerance (13 with set points above the technical specification limit and 4 below the limit). Individual valves were out of specification by as much as 4 percent. The licensee initially did not report this condition because it believed the valves could fulfill their safety function because no safety relief valve set pressure exceeded 1397 psia (110 percent of the system design pressure). However, the licensee determined a common-mode failure mechanism was the cause for most of the failures; therefore, the condition was reportable.

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2 REPORTING AREAS WARRANTING SPECIAL MENTION

(12) The use of intention of the rule to report generic or precursor events as voluntary LERs stretches the bounds of the rule.

(13) This paragraph is judgemental and as such it is inappropriate to include it in a guidance document.

2.8 Human Performance Issues

Human performance often, beneficially or detrimentally, influences the outcome of nuclear power plant events. Detrimental personnel errors may be caused by inadequate procedures, training, verbal communications, human engineering, quality control management, or supervision.

A specific description of the causes and effects of human performance as they relate to an event are to be included in the LER pursuant to §50.73(b)(2). Based on recent NRC site visits to better understand operator response to plant events, it was found that significant human performance information was known to the licensees; however, the licensees had not generally included the information in the submitted LERs. While complete human performance information may not be available at the time of an ENS notification, the NRC is interested in any known human performance issues related to the event.

In the LER, and where possible in the ENS notification, the intent is to include a substantive description of relevant human performance information and root causes. Typical examples of human performance problems as they relate to the event or root cause are given in Section 5.2.1(2) of this report.

2.9 Voluntary Reporting

The Statements of Consideration for 10 CFR 50.73 specifically address the use of voluntary LERs. Licensees are permitted and encouraged to report any event or condition that does not meet the criteria contained in §50.73(a) if the licensee believes that the event or condition might be of safety significance or of generic interest or concern. ~~Thus, regardless of operational mode, if a failure or degradation of a component, system, or structure could have generic safety implications or be a precursor to a significant event and no part of 10 CFR 50.73 specifically requires reporting, it is intended that the event be reported as a voluntary LER.~~ (12) Voluntary reporting of LERs is further discussed in Section 5.1.5 of this report. In addition, voluntary reporting is encouraged under 10 CFR 50.72, as discussed in Section 4.2.3 of this report.

~~However, the NRC staff considered many of the voluntary reports submitted in 1990 to be required under 10 CFR 50.72 and 50.73. These included a manual reactor scram, ESF actuations, technical specifications required shutdowns, unanalyzed plant conditions, large spills, and common mode failures. Submittals of such improperly classified ENS notifications or LERs in lieu of required reports do not meet 10 CFR 50.72 or 50.73. Licensees are expected to properly classify and report events in accordance with these rules.~~ (13)

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(14) If an event is found to not be reportable after notification, it is to the best interest of the licensee to retract or cancel the report. As discussed in this section, the NRC maintains the data on file so the data can be evaluated. Since no evaluation data is lost by cancellation/ retraction, the decision on how to deal with nonreportable events subsequent to reporting should be left to the judgement of the licensee.

(15) A section on time clocks associated with reporting should be inserted at the appropriate point in Section 2 of the *NUREG.

Guidance associated with the "Time Limit for Reporting" was previously provided by answers to 14 questions in NUREG-1022 Supplement 1, Section 14.0. A corresponding section does not exist in the draft NUREG. However, with the exception of questions 14.6-14.9, the guidance provided by Section 14 of Supplement 1 is scattered throughout the draft Revision 1.

Questions 14.6-14.8 referred to problems associated with changing to the new LER format in 1984 and do not need to be incorporated. Although not specifically addressed, question 14.9 is well understood by the industry and therefore need not be included in Revision 1.

The suggested addition to Section 2 is appropriate because it provides guidelines to improve reporting that apply to both 10CFR50.72 and 50.73. It was developed using the four "applicable dates" defined in response to question 14.5 of Supplement 1 and guidance provided in NUREG-1397. Three new definitions (Event, Discovery, and Reportability Time) have been added to assist in applying the time references to 10CFR50.72(a) and (b) requirements. In addition, by requiring the time clocks to begin upon determination/confirmation of the reportable condition, the guidance will be properly aligned with NUREG-1397, which states:

"...while it may be prudent for licensees to informally apprise the NRC of potentially reportable items of high safety significance, formal reporting is not required by the existing regulations until the determination is made by the licensee."

By requiring the reporting time clock to begin upon determination/ confirmation by the licensee, an accurate and valid reportability determination will be ensured. This will place the emphasis on evaluating the event/condition and determining appropriate actions to ensure nuclear safety rather than redirecting licensee resources to determine if a "reasonable belief" exists that a 10CFR50.72 or 50.73 report is required. "Reasonable belief" (reference last paragraph, Page 42 of draft Revision 1) is an ambiguous term which will promote inconsistencies in reporting throughout the industry.

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insert-20 (insert into Section 2)
2.x Time Clocks Associated With Reporting

2.x.1 Definitions
Event Date: The day on which the event actually occurred.
Event Time: The time at which the event actually occurred.

Discovery Date: (1) The day on which it is recognized that an event occurred; or (2) The day on which documentation first identifying an undesirable condition is completed.

Discovery Time: (1) The time at which it is recognized that an event occurred; or (2) The time at which documentation first identifying an undesirable condition is completed.

Reportability Date: The day on which the licensee determines that the event/condition is reportable (starts the 50.73 clock).

Reportability Time: The time at which the licensee determines that the event/condition is reportable (starts the 50.72 time clock).

Report Date: The day on which a report is submitted.

2.x.2 Timeliness of Reporting

The 50.72 and 50.73 reportability time clocks begin when the existence of a reportable event or condition is determined/confirmed by the licensee. In many cases, the event date/time will be the same as the reportability date/time. In a few cases, however, the event, discovery and reportability date/time will be different. The time clock begins when the licensee confirms that a reportable event or condition exists (i.e., reportability date/time).

Additional clarification associated with time clocks can be found in the following sections: 2.4, 3.1.1, 3.2.4, 3.2.5, 3.2.8, 3.3.3, 3.3.7, 3.4.1, 4.2.1, 4.3.2, 5.1.1, 5.1.6, 5.2.1, and 5.2.4.

2.10 Retraction/Cancellation of Event Reports

Licensees have expressed concerns about the counting of event reports, both ENS notifications and LERs. The NRC staff has indicated that its interest is in evaluating the reported information, not in counting the number of events reported. While event reports may be formally withdrawn, the staff has often found the information reported useful and has maintained the information on file with the withdrawal notation. Licensees are encouraged to convert each report to a voluntary report rather than a retraction or cancellation. (14)

If a licensee so chooses, an ENS notification can be retracted and an LER can be canceled using the same procedure by which the initial report was made. The retractions and cancellations are further discussed in Section 4 for ENS notifications and Section 5 for LERs. Sound, logical bases for the withdrawal or conversion to a voluntary report are to be communicated with the request. Such actions receive staff review.

Insert-20 (15)

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3.1.1 10 CFR50.72 Immediate Notification Requirements for Operating Nuclear Reactors

(1) 50.73(a)(2)(x) refers to internal threats; the example pertains to an <u>offsite</u> release.

declared and an ENS notification was made. Forty-five minutes after the warning, a tornado touched down inside the protected area. Three minutes after the tornado touched down, it had passed through, and ENS update calls were made. Unit 1 operation was not affected. There was some external site damage and one person received minor injuries. A radwaste duct and several trailers were damaged, and the security fence was knocked down. No safety systems were affected and offsite power was maintained during the event.

An ENS notification is required immediately after notification of State and local government agencies because an Unusual Event was declared. The update ENS calls are required by §50.72(c)(1)(i) because the tornado touched down on site causing a worsening of conditions, by §50.72(c)(2)(i) to report assessments of plant conditions, and by §50.72(c)(1)(iii) to report termination of the declared emergency. An LER is required under §50.73(a)(2)(iii) because an actual threat was posed to the plant.

(2) Offsite Chlorine Gas Release

Licensee personnel removed a hose attached to a chlorine bottle from a sewage treatment facility adjacent to the plant site. A chlorine release occurred because the bottle valve was not fully closed. Several of the plant's administrative buildings were evacuated and three individuals were taken to an area hospital for chlorine gas inhalation. The licensee declared an Unusual Event within 15 minutes and made an ENS notification within 27 minutes of the release.

The licensee made an update ENS notification within 5 minutes of terminating the Unusual Event, after the chlorine release was stopped and cleanup efforts were under way. The licensee made a final update ENS notification after the three individuals transported to the hospital had been released.

An ENS notification is required immediately after notification of State and local government agencies because the licensee declared an Unusual Event. The termination of the Unusual Event is immediately reportable under §50.72(c)(1)(iii). The update on the condition of the hospitalized individuals was a voluntary report to close the notification event report. This report provided human interest information that would be useful to the NRC public affairs officer if contacted by local or national news media. ~~An LER is required under §50.73(a)(2)(x).~~ (1)

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3.1.1 10 CFR50.72 Immediate Notification Requirements for Operating Nuclear Reactors

(2) The example would be more useful in Section 3.2.8.

move to Page 72 (a)

(3) Freon Release in Vital Area

During modification work on the control room habitability system, an in-service line was inadvertently cut, releasing 55 lbs of Freon 22 into the heating and ventilation equipment room. This room was immediately evacuated. The control room was not significantly affected by the release. No offsite consequences were expected. No personnel injuries occurred and all personnel were accounted for. Believing this equipment room was in the protected area rather than in the vital area, the licensee declared an Unusual Event 20 minutes into the event. An ENS notification was made 46 minutes into the event.

The licensee determined that the heating and ventilation equipment room was considered a "vital area" and reclassified the emergency as an Alert 54 minutes into the event, activated the technical support center (TSC) 84 minutes into the event, notified the NRC Operations Center 88 minutes into the event, and maintained a continuous communication channel thereafter. By this time, all the gas had leaked out of the cut line and the licensee was attempting to verify area habitability with gas sampling.

The emergency was terminated 91 minutes into the event after Freon and oxygen levels were found to be acceptable. The NRC was informed 106 minutes into the event.

An ENS notification is required immediately after notification of State and local government agencies because a declaration of an emergency (Unusual Event) was made. The change in emergency classification was immediately reportable under §50.72(c)(1)(ii). During emergencies that are classified as Alert or higher, the licensee will be required to immediately maintain a continuous communication channel with the NRC Operations Center per §50.72(c)(3) to enable the NRC to monitor the event and take appropriate actions. The termination of the Alert is immediately reportable under §50.72(c)(1)(iii). An LER is required under §50.73(a)(2)(x).

(4) Anticipated Flooding

The licensee declared an Unusual Event because of projected flooding of a nonvital intake structure, when the river level, which was then at 100 feet within its banks, was expected to crest at 120 feet. Although the plant's nonvital intake structure, at 112 feet, is designed for water levels of 127 feet and plant operation was not expected to be affected, the licensee informed State and local authorities and made an ENS notification.

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3.2.1 Plant Shutdown Required by Technical Specifications

(1) Without appropriate analysis and discussion, such references to other reporting criteria should be avoided. Adequate guidance is provided throughout the document to ensure that licensees evaluate all appropriate reporting criteria when making reportability decisions; however, the applicability of each criterion for a given condition must be evaluated individually.

the situation cannot be corrected before the completion of the shutdown or if the plant shuts down early to correct the problem.

Examples

(1) Initiation of a TS Required Plant Shutdown

The monitor alarmed for one of three safeguard equipment cabinets and the cabinet was declared inoperable. The plant's TS required that if one cabinet is out of service, the plant must be in hot standby within 6 hours. The licensee initiated a plant shutdown from full power and made an ENS notification.

The licensee made an update ENS notification after the equipment was repaired, the cabinet was declared operable, and the power reduction was stopped before completion of the shutdown.

An ENS notification is required because a TS required power reduction was started. The update ENS notification is required immediately under §50.72(c)(2)(ii) to report the effectiveness of the response taken to the event. An LER is not required because the plant did not reach hot standby or hot shutdown.

(2) Initiation and Completion of a TS Required Plant Shutdown

When leakage around the primary containment ventilation exhaust dampers exceeded the maximum allowable combined secondary bypass leakage rate, the plant TS required the plant be in hot shutdown within 12 hours. The licensee commenced a reactor shutdown at 10 percent per hour and made an ENS notification within 13 minutes.

The licensee made update ENS notifications, when the plant reached hot and cold shutdown and the technical specification was exited.

An ENS notification is required because a plant shutdown was initiated as required by the plant's TS. ~~This event also is reportable under §50.72(b)(1)(ii) as a degraded plant condition.~~ The update ENS notifications were made under 50.72(c)(2)(ii) to report the effectiveness of the response taken to the event. An LER is required because the plant shutdown was completed. (1)

(3) Shutdown Before the End of TS Time Limit

While at full reactor power, a plant's essential service water pump discharge check valve failed its monthly surveillance test. Because repairs could not be completed

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COMMENTS ON PAGE 33

3.2.1 Plant Shutdown Required by Technical Specifications

(2) The last sentence provides an additional example that indicates that even though shutdown of the plant was unavoidable, no reports are required because the time limit was not reached. Since it is the desire of the staff that such an event not be reported, to avoid confusion this example should be provided as an additional paragraph.

(3) To provide additional guidance as to the application of these criteria, it is recommended that the paragraph shown be added at the end of Section 3.2.1.

Insert-33 (insert into Page 33)

The above scenarios indicate that prudent judgement is required by the plant staff in making reportability evaluations. In general, when the shutdown, through active or passive circumstances, becomes necessary for compliance with TSs, notification and reporting requirements become effective. Notification and reports are not automatically required simply because a LCO with ACTION requirements that include shutdown is entered.

within the 72 hours allowed by TS, the reactor was placed in cold shutdown within 1 day and a 5-day outage for the repairs and other maintenance activities was begun.

An ENS notification is required because the repairs could not be made before the time plant shutdown was required by TS, regardless of the decision to shut down early. An LER is required because the plant shutdown was completed. If a scheduled outage started before the end of the TS time limit, the above event also is reportable by ENS notification and LER.¶ If the plant shut down within 1 day to fix the above component failure and completed it within the 72 hour limit, the event is not reportable because the shutdown was not required by the TS. (2)

¶ Insert-33 (3)

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3 .2. 2 Technical Specification Prohibited operation or Condition

I. Principal Issues

Collectively, the sections provided for clarification could be interpreted to require reporting of plant or equipment conditions which are actually permitted by Technical Specifications (TS). In addition, the guidance is inadequate regarding determination of reportability of administrative TS violations.

II. Overview

The comments are intended to make the guidance consistent with the language and intent of the regulation.

Implementation of the draft guidance would result in reporting of the following example conditions beyond the original language and intent of the requirements of 10CFR50.72 and 50.73:

(1) Channel checks required once per shift that were postponed for three hours due to plant startup or shutdown in progress, even though the associated LCO allows indefinite operability of associated equipment.

(2) Violation of Administrative TS. For example, Section 6 requires several audits of unit activities and programs at intervals of at least once per 12 months to 36 months. Any deviation from this frequency, no matter how small or what the reason, would require reporting.

III. Specific

COMMENTS ON PAGE 34

(1) The Discussion section of the draft NUREG is modified to provide a one-to-one correspondence with the paragraphs of 10CFR50.36.

(2) See also Discussion Section (8). Although Fire Protection Technical Specifications (TSs) provide different requirements at various plants, a violation of Fire Protection TSs should be treated no differently, for reportability purposes, than other TS violations. Accordingly, Example 6 should also be deleted.

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Insert-34a (insert into Page 34)

(1) Technical Specification Categories as Defined by 10CFR50.36

As stated in 10CFR50.36(c)(7), "Licensees ... shall submit written reports to the Commission in accordance with [10CFR50.73] for events described in paragraphs (c)(1) and (c)(2) of this section." Consistent with this regulation, the following discussion is provided for each of the five TS categories.

Insert-34b (insert into Page 34)

As defined in 10CFR50.36(c)(2), LCOs are "the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met." It should be noted that such "remedial action" is provided in Standard Technical Specifications as an integral part of the LCO.

3.2.2 Technical Specification Prohibited Operation or Condition

10 CFR 50.72	§50.73(a)(2)(i)(B)
[There is no corresponding Part 50.72 requirement. However, for certain operations or conditions prohibited by a plant's TS, other reporting requirements may apply, such as 50.72(b)(1)(ii) and (b)(2)(iii); 50.36(c)(1) and (2); 20.403; and 20.405.]	Licensees shall report: "Any operation or condition prohibited by the plant's Technical Specifications."

Licensees are required to submit an LER within 30 days for any operation or condition prohibited by technical specifications.

<u>Discussion</u>

The staff considers any operation or condition that is prohibited by the plant's TS to be significant which are enough to warrant an LER. (1)

The five ~~of the~~ specific TS categories defined in 10 CFR 50.36(c)(1) through (c)(5) are listed below. Discussion is provided for those areas where clarification is deemed necessary.

Additionally, and for reporting guidelines are provided for reporting entry into TS 3.0.3 ~~3~~ missed or deficient tests required by ASME Section XI Inservice Testing (IST) and Inservice Inspection (ISI) and ~~by~~ standard technical specification (STS) 4.0.5, or equivalent. ~~and other operations or conditions prohibited by TS, such as fire protection.~~ (2)

The LER rule does not address violations of license conditions contained in documents other than the TS. Such notifications are reportable as specified in a plant's license or other applicable document.

Insert-34a → 10CFR50.36(c)(1) (1)

(2) Safety Limits and Limiting Safety System Settings

Section 50.36(c)(1) outlines the reporting requirements when nuclear reactor safety limits or limiting safety system settings are exceeded and identifies that such reports are to be made under 50.72 and 50.73.

10CFR50.36(c)(2) (1)

(2) Limiting Conditions for Operation

Insert-34b

~~Certain technical specifications contain LCO statements that include action statements 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 take~~

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COMMENTS ON PAGE 35

3.2.2 Technical Specification Prohibited operation or Condition

(1) See Comment (1) of Page 34.

(3) As written, the focus on shutdown activities implies that the intent of this requirement is only to report missed shutdown requirements.

(4) See also Discussion Section (7), Paragraph 2; Example 2; Example 5. Collectively, these sections could be interpreted to require reporting of plant or equipment conditions which are actually allowed by the TS. Specifically, inference can be made that simply exceeding specified surveillance intervals would, by itself, require reporting.

STS 4.0.3 states:

> "Failure to perform a Surveillance Requirement within the specified time interval shall constitute a failure to meet the OPERABILITY requirements for a LCO ....

Question 2.1 in NUREG-1022, Supplement 1, establishes that reportability under 10CFR50.73(a)(2)(i)(B) is required when a condition of a specific LCO and its associated ACTION statement requirements are not met (re: Draft NUREG-1022, Revision 1, Page 35, Discussion #3, first paragraph].

Question 2.2 in NUREG-1022, Supplement 1, establishes that exceeding the allowable outage time (i.e., time windows) of LCO ACTION statements is of significance and warrants a 10CFR50.73(a)(2)(i)(B) report.

Question 2.3 in NUREG-1022, Supplement 1, establishes that a condition can be assumed to have occurred at the time of discovery, unless there is firm evidence to believe otherwise [re: Draft NUREG-1022, Revision 1, Page 35, Discussion #3, Paragraph 1].

Question 2.9 in NUREG-1022, Supplement 1, establishes that an administrative violation of TS is reportable under 10CFR50.73 if it results in operation prohibited by TS.

A "failure to meet OPERABILITY requirements for a LCO" is synonymous with finding the associated LCO equipment "inoperable". When LCO equipment is determined to be inoperable, the appropriate ACTION statements must be entered and the equipment must be returned to OPERABLE status within the allowable outage time (AOT). If equipment is not returned to OPERABLE status within the AOT, the event is significant and is reportable under 50.73(a)(2)(i)(B).

When applying the above guidance to surveillance time intervals, the following applies:

1. When the 1.25 surveillance time interval is exceeded, the OPERABILITY requirements are not met.

COMMENTS ON PAGE 35 (continued)

Entry into the ACTION statements of the applicable LCO is required.

2. The time clock of the LCO begins when the 1.25 surveillance time interval is exceeded, not when the missed surveillance is discovered

3. If the equipment is shown to be OPERABLE within the AOT of the LCO, the event is not reportable in accordance with 10CFR50.73(a)(2)(i)(B) because the LCO and its associated ACTION statement requirements have been met and-the event is, therefore, not significant.

Any requirement to report the late performance of a surveillance requirement which did not exceed the provisions of the prescribed interval, allowable extensions, and ACTION statements provided by the LCO, would be considered to require a rule change. Such a change would be ineffective and undesirable for the following reasons:

1. Inoperability due to failure to perform a surveillance requirement on equipment which is otherwise operable, would be elevated to a level of importance above inoperability caused by actual defects. This is contrary to the staff's stated desire to be made aware of significant compromises to plant safety.

2. Events of little or no safety significance would be required to be reported. For example, a CHANNEL CHECK required to be completed every 12 hours, but performed three hours late, would require reporting even though the associated LCO allows indefinite inoperability of the associated equipment (actual case).

3. Because of the relationship of surveillance requirements, LCO entry, and application of ACTION statements, the number of missed surveillances not reportable would be extremely small in relation to the total number of events reported. Additionally, internal event reporting and investigation procedures at each facility would be effective in addressing the causes of such events, with a significantly lower impact on utility and NRC resources.

Insert-35a (insert into Page 35)

The wording of the reporting criteria, "operation or condition prohibited by the plant's Technical Specification", strongly parallels the definition of a LCO provided in 10CFR50.36. Additionally, in issuing the final rule, the staff further clarified the reporting requirements in discussion of this criterion. As stated in the Federal Register on July 26, 1983, "This paragraph has been reworded to more clearly define the events that must be reported. In addition, the scope has been changed to require the reporting of events or conditions prohibited by the plant's Technical Specifications' rather than events where a plant Technical Specification Action Statement is not met'. This change *accomodates plants that do not have requirements that are specifically defined as Action Statements."

Accordingly, this section of TSs is directed toward plant and equipment conditions, and is the primary category to be considered when evaluating reportability under 10CFR50.73(a)(2)(i)(B).

Insert-35b (insert into Page 35)

Surveillance requirements are defined in 10CFR50.36(c)(3) as "...requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within the safety limits, and that the Limiting Conditions of Operation will be met". As such, surveillance requirements are subordinate to safety limits and LCOS, directly supporting compliance with these more critical categories.

Standard Technical Specification 4.0.3 further clarifies this relationship, stating "failure to perform a surveillance requirement within the specified time interval shall constitute a failure to meet the OPERABILITY requirements for a LCO...". Because equipment inoperability represents entry into a LCO Action, a missed or failed surveillance requirement does not, in and of itself, constitute a reportable event. Reportability hinges on compliance with the LCO and its associated Action statement.

(continue paragraph) The ~~other compensatory measures. Such~~ time constraints for such actions are based on the safety significance of the component or system being removed from service. Exceeding LCO action requirements is prohibited. (1)

Insert-35a →

An LER is required if the conditions of an LCO are not met (e.g., by exceeding the permitted time constraints). The LCO allows a plant a specified time interval (e.g., 6 hours) to accomplish corrective actions (e.g., an orderly shutdown to either the hot- or cold-shutdown mode). The staff is interested in the frequency of occurrence and the TS involved in events in which ~~a shutdown~~ appropriate action did not occur within the given time constraint. (3)

If a plant is in a degraded mode longer than permitted by the TS, the condition is reportable even if the condition was not discovered until considerably later and the condition was corrected immediately after its discovery.

10 CFR 50.36(c)(3)

Insert-35b → ~~(2)~~ TS Surveillance Requirements (1)

For the purpose of evaluating the reportability of discrepancies found during TS surveillances, an operation or condition prohibited by the TS existed and is reportable if the time of actual equipment inoperability exceeded the LCO allowable. It should be assumed that the situation occurred at the time of discovery unless there is firm evidence, based on a review of relevant information, to believe otherwise (e.g., the equipment history and cause of failure).

For missed surveillance requirements, ~~the staff is interested in the effectiveness of ensuring that surveillance tests are conducted within the required periods.~~ if the surveillance interval plus the allowable time extensions for conducting a surveillance are exceeded, the event is reportable even though the surveillance is subsequently satisfactorily performed. (4)

10 CFR 50.36(c)(4)

~~(4)~~ Design Features

Design features of a licensed facility are attributes such as materials of construction and geometric features which, if altered or modified, can have a significant effect on safety and are not covered by items (1) through (3) above. Reportability requirements related to design features are included in other sections of 10 CFR 50.72 and 50.73.

the associated equipment is to be considered inoperable at the time the allowable time period expired. If the ACTION requirement is not met, based on the time of LCO entry, (4)

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COMMENTS ON PAGE 36

3.2.2 Technical Specification Prohibited Operation or Condition

(1) See Comment (1) of Page 34.

(5) See also Example 4. The discussion and examples provided in these sections provide inadequate guidance for a licensee to determine reportability for an administrative TS violation. The rule states that licensees are to report "any operation or condition prohibited by the plant's Technical Specifications." The guidance strongly indicates that there are violations of TS which do not require reporting, while the examples give the licensee reason to believe all administrative violations, no matter how minor, are required to be reported.

(6) See Comment (4) of Page 35.

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Insert-36a (insert into Page 36)

Such controls, as defined by 10CFR50.36(c)(5), are "...provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner..". Failure to comply with an administrative requirement does not necessarily result in unsafe or prohibited operation.

Insert-36b (insert into Page 36)

reportable as a LCO violation, or reportable under other provisions of the LER Rule or other reporting criteria. A violation of an administrative TS, in and of itself, does not constitute a reportable condition. However, any violations of TS administrative requirements should be evaluated for significant effects on plant operations under internal investigation procedures and evaluated for applicability of other reporting criteria (e.g., 20.403, 20.405, and 73.71). A great deal of discretion must be applied in evaluations of Section 6 violations.

10CFR50.36(c)(5) Controls

(8) Administrative ~~Requirements, Including Radiological Controls, Required by Section 6 of the STS, or Equivalent~~ (1)

Section 6 of the STS, or its equivalent, has a number of administrative requirements such as organizational structure; the required number of personnel on shift; the maximum hours of work permitted during a specified interval of time; and the requirement to have, maintain and implement certain specified procedures. Failure to meet such administrative requirements is ~~prohibited by~~ the TS. Whether it is reportable as an LER depends upon whether it results in a condition ~~covered by the LER rule. If a variance from the administrative requirements of TS results in operations or conditions prohibited by the TS, then the variance is reportable.~~ (1) Insert-36a Insert-36b (5) by strict interpretation a violation of (5)

~~Radiological conditions and events that are prohibited by a plant TS are generally reportable under the requirements of 10 CFR 20.403 and 20.405. Sections 20.403 and 20.405 use the reporting methodology contained in 10 CFR 50.72 and 50.73. Redundant reporting is not required.~~ (5)

(2) Technical Specification Reporting Issues Requiring Additional Guidance

(6) Entry into STS 3.0.3 (1)

STS 3.0.3, or its equivalent, establishes requirements for actions when an LCO is not met and no action statement is provided. Entry into STS 3.0.3 is considered to be the action taken, as required, when operations or conditions required by TS LCO action statements are not met. Thus, until a plant is placed in a mode for which an LCO does not apply, the plant is considered to be in a condition prohibited by TS. Entry into STS 3.0.3 for any reason or justification is reportable unless a temporary waiver of compliance is obtained. The staff is interested in the frequency and the specific TS involved.

(7) Missed or Deficient Tests Required by ASME Section XI Inservice Testing (IST) and Inservice Inspection (ISI) and by STS 4.0.5, or Equivalent.

Section 50.55a(g) of 10 CFR requires the implementation of an IST/ISI program in accordance with the applicable edition of the ASME Code for those pumps and valves whose function is required for safety. STS Section 4.0.5 (or an equivalent) covers these testing requirements. If an IST or ISI is not performed when required, or if ASME Section XI tests or inspections (examinations) show that components fail to meet requirements, the failures are reportable when they cause the associated systems required for safety to be declared inoperable in excess of the LCO ACTION requirements. (6)

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COMMENTS ON PAGE 37

3.2.2 Technical Specification Prohibited Operation or Condition

(7) See Comment (2) of Page 34.

(8) Indications are not adequate to result in "firm evidence."

(9) In the given example, the LCO expired well before the 30-day test was performed. The clarification attempted in the last sentence is unclear. A new paragraph should be added to provide clarification of actions necessary to avoid a LER.

(10) See comment (4) of Page 35.

(8) ~~Fire~~ Protection Systems When Required by TS

When fire protection systems are covered by TS (e.g., through an LCO), they are within the scope of the LER rule. (7)

Breaches of fire barriers required by TS and conditions that could prevent the required operation of fire protection features specified in TS are reportable conditions unless preplanned and covered by compensatory measures.

Examples

(1) LCO Exceeded

A licensee found a standby component with a 7-day LCO and associated 8-hour action statement to be inoperable during a 30-day surveillance test. Subsequent review ~~indicated~~ determined (8) that the component was inadvertently assembled improperly during maintenance conducted 30 days previously and a post-maintenance test of the component had been conducted which was not adequate to identify the error. There was firm evidence that the standby component had been inoperable for the entire 30 days.

An LER was required because the 7-day LCO and the action statement time of 8 hours was exceeded. ~~If the component had been made operable after the 30-day test and before the LCO expired, an LER would not be required.~~ (9) Had the inoperability been identified and corrected within the original 7-day, 8-hour action provision, a LER would not be required.

(2) Missed Surveillance Tests

A licensee, with the plant in mode 5 following a 10-month refueling outage, determined that certain monthly TS surveillance tests, which were required to be performed regardless of plant mode, had not been performed as required during the outage. The surveillance tests were immediately performed. An LER is required because the time interval exceeded the TS surveillance interval, including extensions permitted by TS and the associated ACTION requirements of the LCO were not satisfied. (10)

(3) Entering STS 3.0.3

With essential water chillers (A) and (B) out of service, the only remaining operable chiller (A/B) tripped. This condition caused the plant to enter STS 3.0.3 for 1 hour until chiller (A) was restored to service and the temperature was restored to within TS limits. An LER is required for this event because STS 3.0.3 was entered.

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COMMENTS ON PAGE 38

3.2.2 Technical Specification Prohibited Operation or Condition

(11) See Comment (5) of Page 36.

Insert-38 (insert into Page 38)

The following are examples of conditions resulting from TS administrative violations which would be reportable under other applicable reporting criteria.

(1) Procedural violations, inadequate programs, or deficient procedures which result in radiation exposures in excess of 10CFR20 limitations, or other conditions reportable under 10CFR20.403 or 20.405.

(2) Procedural violations, inadequate programs, or deficient procedures which result in conditions reportable under other criteria specified in 10CFR50.73.

(4) Administrative Requirements, Including Radiological Controls, Required by Section 6 of the STS, or Equivalent

Insert-38 ~~If a control room is operated with less than the required~~ number of people on shift or is operated with a required procedure that had not been properly approved, these operations would constitute a condition or event prohibited by the TS, and as such are reportable. However, if a requirement is only administrative and does not affect plant operation, then an LER is not required. (11)

If a change in the plant's organizational structure is made that has not yet been approved as a TS change, an LER is required. The implementation of TS changes before NRC approval, such as deletion of a shift technical advisor position, is clearly operating in a condition prohibited by TS and would be reportable.

During a plant startup, a reactor water cleanup (RWCU) system isolation was initiated by a sensed high-differential flow. This condition is identified in the plant's TS as a required isolation during the plant's present operational mode. While trying to restore the RWCU system to operation, the system continually isolated from high temperature to the RWCU system demineralizer bed. This RWCU system high temperature isolation was another isolation required by TS during the plant's operational mode. The shift supervisor determined that reactor chemistry would deteriorate and eventually place the plant in an LCO action statement. Therefore, the shift supervisor directed the RWCU system high-temperature isolation be bypassed, even though such action was not covered by approved procedures. The supervisor reasoned that the TS LCO for inoperable RWCU system high-temperature isolation permitted up to 1 hour before the instrumentation must be placed in the tripped condition. Within 1 hour after the shift supervisor's decision, the jumpers were installed, the system was returned to operation (once the system was started, the hot water causing the high-temperature isolation was pumped to the feedwater system), and the jumpers were removed.

The installation without approved procedures of jumpers which bypass a TS required actuation during modes when the actuation is required is an action prohibited by TS and an LER is required.

A licensee failed to implement radiation protection controls required by the TS. Such failure resulted in, or had a high potential for, personnel exposures in excess of NRC prescribed limits. An LER is required under the requirements of §20.403 and this §50.73 criterion; one ~~report should cite both requirements.~~

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COMMENTS ON PAGE 39

3.2.2 Technical Specification Prohibited Operation or Condition

(11) See Comment (4) of Page 35.

(12) See Comment (2) of Page 34.

(5) Missed or Deficient Tests Required by ASME Section XI IST and ISI, and by STS 4.0.5, or Equivalent

Examples of reportable conditions are failures to perform required activities within specified times for those components governed by code (i.e. ASME BPV section IX, and the licensees' ISI and IST program) and TS. Such activities include stroke testing valves, testing valves in the position required for the performance of their safety function, verifying motor-operated valve stroke times for both (open and closed) directions, using the proper test pressures to properly classify and test active valves and to increase test frequency subsequent to obtaining test results that were below certain threshold values. Not performing a required IST or ISI, or performing a deficient IST or ISI, is reportable when the associated systems required ~~for safety must be declared~~ inoperable by TS become because of the missed or deficient IST or ISI. ~~This condition requires an LER.~~ (12)

in excess of TS limits

~~(6) Fire Protection Systems When Required by TS~~

~~The licensee routed a hose from a temporary laundry facility through an emergency diesel generator air intake duct, a ventilation duct, and a wall, breaching the fire barriers, and the licensee took no acceptable compensatory action within the required timeframe. An LER is required.~~ (13)

3. 2. 4 Operating Plant in a Degraded or Unanalyzed Condition

I. Principal Issues

The proposed guidance deviates from the language and intent of the regulations and original staff guidance in the following manner:

(1) The introduction of the terms "Engineering Design Basis" and "Licensing Basis" when evaluating conditions for reportability as a condition outside the design basis of the plant significantly expands the considerations licensees need to evaluate.

(2) The expansion of reporting from the plant level to the system and component level.

(3) Errors that occur in the use of approved plant procedures are now added to the scope of reporting.

II. Overview

The comments are intended to bring the guidance back within the language and intent of the regulation.

Implementation of the draft guidance would result in reporting of the following example conditions beyond the original language and intent of the requirements of 10CFR50.72 and 50.73:

(1) The discovery that the stress level at any valve on a safety-related system exceeds code allowable but does not affect component or system operability.

(2) Discovery of equipment qualification requirements on certain instruments in a safety-related system are not fully documented but do not affect component or system operability.

(3) Discovery of a valve misalignment on any plant system.

III. Specific

COMMENTS ON PAGE 41

(1) As written this paragraph implies that a seriously degraded component or system; or a component or system that is outside its individual design basis is reportable under the referenced sections of 10CFR50.72 and 10CFR50.73. This is not in accordance with the original rule. The Statements of Consideration for Paragraph 50.72(b)(1)(ii) state, "it is not intended that this paragraph apply to minor variations in individual parameters, or to problems concerning single pieces of equipment. This change also results in the first paragraph agreeing with the second paragraph.

3.2.4 Operating Plant in a Degraded or Unanalyzed Condition

§50.72(b)(1)(ii)	§50.73(a)(2)(ii)
Licensees shall report: "Any event or condition during operation that results in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded; or results in the nuclear power plant being:	Licensees shall report: "Any event or condition that resulted in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded; or that resulted in the nuclear power plant being:
(A) In an unanalyzed condition that significantly compromises plant safety;	(A) In an unanalyzed condition that significantly compromised plant safety;
(B) In a condition that is outside the design basis of the plant; or	(B) In a condition that was outside the design basis of the plant; or
(C) In a condition not covered by the plant's operating and emergency procedures."	(C) In a condition not covered by the plant's operating and emergency procedures."

If not reported as an emergency under §50.72(a), licensees are required to report operation under such a condition to the NRC via the ENS as soon as practical and in all cases within 1 hour. Licensees are required to submit an LER within 30 days.

Discussion result in the nuclear power plant being (1)

The intent of this section is to report events and conditions pertaining to components, systems, and structures that ~~are either~~ (1) seriously degraded, (2) in an unanalyzed condition, (3) outside of the plant's design bases, or (4) not covered by the plant's operating and emergency procedures.

The Commission recognizes that the licensee may use engineering judgment and experience to determine reportability under these criteria, as described in Section 2.1 of this report. It is not intended that these reporting criteria apply to minor variations in individual parameters or to problems concerning single pieces of equipment. For example, at any time, one or more safety-related components may be out of service because of testing, maintenance, or a fault that has not yet been repaired. Any trivial single failure or minor error in performing surveillance tests could produce a situation in which two or

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(2) This is contrary to the original intent of the rule. The Statements of Consideration for 10CFR50.72 state:

"The Nuclear Regulatory Commission is amending its regulations which require timely and accurate information from licensees following significant events at commercial nuclear power plants..."

and

"The purpose of the rule was to provide the Commission with immediate reporting of twelve types of significant events where immediate Commission action to protect the public health and safety may be required..".

(3) The "time clock" should begin when an reportable event or condition is determined to be reportable.

Communication with management concerning potentially reportable conditions must be open and continuous, but the initiation of a 1 hour time clock for making an ENS notification should only be made when the existence of a reportable condition is confirmed. These changes will properly align this guidance with NUREG-1397 which states:

"while it may be prudent for licensees to informally apprise the NRC of potentially reportable items of high safety significance, formal reporting is not required by the existing regulations until the determination is made by the licensee."

more, often unrelated, safety-related components are out of service. Although this may technically involve an unanalyzed condition, it is reportable only if the condition involves functionally related components, or if it significantly compromises plant safety.

Under this reporting requirement, many events may be reportable under more than one of the four listed criteria. For example, the loss of all high head coolant injection pumps during power operation places the plant in a condition that is unanalyzed, outside its design basis, and not covered by emergency procedures. However, for the sake of clarity, reporting explanations for examples given in this section generally address only the single criterion being discussed.

These criteria have some overlapping reporting requirements with other parts of 10 CFR 50.72 and 50.73. This was intended to ensure that ~~potentially~~ significant conditions or events do not go unreported because of inadequate definition of the circumstances that the NRC intended to be reported. For example, §50.73(a)(2)(i)(B) requires reporting any condition prohibited by the plant's TS and §50.73(a)(2)(ii)(C) requires reporting any condition not covered by the plant's operating or emergency procedures. Therefore, if the plant's TS (such as STS 6.8.1) requires a procedure for responding to a specific event, the event occurs and there is no procedure, it is reportable under both requirements. (2)

§50.72(b)(1)(ii), which requires a 1-hour report, and §50.72(b)(2)(i), which requires a 4-hour report, both address degraded or unanalyzed plant conditions. The difference in reporting times is warranted because §50.72(b)(1)(ii) applies to events or conditions occurring while the plant is in operation and §50.72(b)(2)(i) applies to events or conditions discovered while the plant is shut down. The guidelines for what to report provided in this section apply to both criteria.

Conditions involving serious degradation of the plant, unanalyzed conditions, or conditions outside the design basis of the plant will often be identified first by personnel other than the operating staff (e.g., engineering). In those cases, the reporting "time clock" begins when licensee management responsible for reporting is informed (either verbally or in writing) that the condition exists. ~~or there is reasonable belief (based on engineering judgment) that the condition exists.~~ 10 CFR Part 50, Appendix B, XVI, "Corrective Action," specifies that "...identification of the significant condition adverse to quality...shall be documented and reported to appropriate levels of management." Implicit in this regulation is the requirement for prompt reporting of the condition to licensee management responsible for reporting. There have been occasions when other licensee organizations (e.g., engineering or maintenance) have (3)

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3.2.4 Operating Plant in a Degraded or Unanalyzed Condition

(3) See Comment (3) of Page 42.

(4) As written, these paragraphs state that some loss of quality or functional capability in a single plant component places the plant in a seriously degraded condition. This is clearly not in accordance with the original rule.

As noted in the Statements of Consideration for the original rule, paragraph 50.72(b)(1)(ii) is not intended to apply "...to problems concerning single pieces of equipment".

(5) To clarify that potential conditions are not reportable, the first paragraph under this section needs to be modified. This is consistent with the response to Question 4.1 of Supplement No. 1 to NUREG-1022, which said that potentially being in an unanalyzed condition is not reportable.

confirmed ~~identified~~ these types of adverse conditions, but did not inform management responsible for reporting until exhaustive evaluations were performed. Management responsible for reporting should be promptly informed if there is reasonable belief that an adverse condition exists so that the condition can be evaluated for reportability even though further analysis might reveal the condition was acceptable. (3)

Further clarification of the types of conditions included in the reporting requirements of §50.72(b)(1)(ii) and §50.73(a)(2)(ii) are given below.

(1) Plant Being Seriously Degraded

A nuclear plant's components, systems, or structures are designed to meet applicable NRC requirements, fulfill system functional requirements, satisfy the current licensing basis, and conform to specified codes and standards. These components, systems, or structures are designed and operated with design margins and engineering margins of safety to ensure that some loss of quality or functional capability does not result in the plant being seriously degraded. ~~mean immediate failure.~~ Additionally, many licensees add conservatism so that even if a partial loss of quality or functionality occurs, the margins of safety are still maintained. (4)

The phrase "plant being seriously degraded" refers to a condition ~~of a system, structure, or component~~ in which there has been some loss of quality or functional capability as evidenced by decreases in the margins and conservatisms beyond that added by the licensee and not previously considered by the NRC in a safety evaluation. Analysis, test, experience with operating events, engineering judgment, or a combination of these factors should be used to determine if margins and conservatisms have been reduced to the point at which the plant has ~~systems, structures, or components~~ have become seriously degraded and reportable. (4) (4)

Abnormal degradation of the principal safety barriers (i.e., the fuel cladding, reactor coolant system pressure boundary, or the containment) caused by material (e.g., metallurgical, chemical) or other (e.g., mechanical, electrical, operation) problems is included under these reporting criteria.

(2) Plant in an Unanalyzed Condition

"An unanalyzed condition that significantly compromises plant safety" exists if ~~(1)~~ the condition significantly ~~potentially affecting a component, system, or structure is of more than minor safety significance; and (2) the condition potentially could~~ (a) increases the probability of occurrence or the consequences of an accident or malfunction of equipment (5)

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(6) This entire section needs to be rewritten. As written, these paragraphs state that a single inoperable component, system or structure places the plant outside its design basis. This is clearly not in accordance with the original rule. Utilization of "Engineering Design Bases" as defined in NUREG-1397 is not appropriate for making reportability decisions under 10CFR50.72(b)(1)(ii) and 10CFR50.73(a)(2)(ii). As noted in NUREG-1397:

> "...for the purposes of this report, the team has defined a new term 'engineering design bases', to include both the design bases as defined by 10CFR50.2 and other design considerations implemented to optimize the system design for operational, maintenance, procurement, installation, or construction reasons..."
>
> "The 10CFR50.2 definition of design bases is used in determining immediate notification requirements under 10CFR50.72 and licensee event report requirements under 10CFR50.73."

The distinction between licensing basis/regulatory design basis (Section 50.2, used for reporting) and engineering design basis (NUREG-1397) is further clarified in SECY-91-364, "Design Document Reconstitution," November 12, 1991. Therein, the NRC staff further confirms that the design basis is a subset of both the licensing and engineering design bases. However, requiring reporting of events or conditions outside of all of those sets, as the proposed guidance provides, not only would conflict with the regulation but would result an exponential increase in reportable conditions.

The rule further requires reporting a condition that is outside the design basis <u>of the plant</u>. To define the Design Basis of the Plant, we apply the definition of Design Bases from 10CFR50.2 to the plant level. Rather than referring to the design of individual systems or components, meeting the design basis of the plant means staying within the design basis of the principle safety barriers. The specific safety function performed by these principle safety barriers is the protection of public health and safety through limiting the release of radioactive material. The controlling parameters for each of the principle safety barriers is contained in each plant's SAR. Typical parameters include:

- Offsite Dose
- Fuel Clad Temperature
- Fuel Clad Oxidation
- Hydrogen Generation
- Core Geometry
- Primary Containment Integrity
- Reactor Coolant Pressure Boundary Integrity

COMMENTS ON PAGE 44 (continued)

The specific value or ranges of values chosen for each controlling parameter along with final verification of principle safety barrier performance is contained in each plant's SAR.

The bounds of a plant's design basis are reflected in its Technical Specifications. This position is further supported by Generic Letter 91-18, NRC Inspection Manual Part 9900: Technical Guidance "Operable/Operability: Ensuring the Functional Capability of a System or Component", which states:

> "The purpose of the Technical Specifications is to ensure that the plant is operated within its design basis..."

Therefore, to be outside the design basis of the plant, you must be outside the analyzed envelope, by either having multiple systems inoperable or discovering errors in analyzed conditions which result in significant changes to the acceptance criteria for a plant's principle safety barrier.

important to safety previously evaluated in the safety analysis report, or (b) creates a reasonable potential for an accident or malfunction of a different type than any evaluated previously in the safety analysis report, or (c) reduces the margin of safety as defined in the basis for any technical specification. The licensee may use engineering judgment and experience when evaluating the condition for reportability under this criteria.

For example, if small voids occur in systems designed to remove heat from the reactor core and have been previously shown through analysis not to be safety significant, they are not reportable. However, the accumulation of voids that could inhibit the ability to adequately remove heat from the reactor core, particularly under natural circulation conditions, would constitute an unanalyzed condition and is reportable. In addition, voiding in instrument lines that results in an erroneous indication causing the operator to significantly misunderstand the true condition of the plant is an unanalyzed condition and is reportable.

In reviewing the reportability of each situation, all criteria of 10 CFR 50.72 and 50.73 addressed in this section should be reviewed because the situation may be reportable under another of the four criteria.

(3) Plant in Condition Outside Design Basis (6)

Section 50.2 defines design basis to be "information which identifies the specific function to be performed by a structure, system, or component of a facility, and the specific values or ranges of values chosen for controlling parameters as reference bounds for design." This includes supporting engineering or design analysis.

When evaluating the reportability of conditions that appear to be outside the design basis of the plant, "engineering design bases" as defined in NUREG-1397 ("An Assessment of Design Control Practices and Design Reconstitution Practices in the Nuclear Industry," February 1991) should be used. The term "engineering design bases" is defined in NUREG-1397 to include "the entire set of design constraints that are implemented [for structures, systems, or components], including

- those that are part of the current licensing bases and form the bases for the [NRC's] safety judgments, and

- those...that are implemented to achieve certain economies of operation, maintenance, procurement, installation, or construction."

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(6) See Comment (6) of Page 44.

(7) The original rule required reporting of plant conditions not covered by existing procedures. It did not require reporting errors that occurred in using those procedures. As a result, a human error that resulted in a valve misalignment is not reportable under this section of the rule. If the valve misalignment was significant and resulted in a safety system becoming inoperable, this event may be reported under 10CFR50.72(b)(2)(iii) and 10CFR50.73(a)(2)(v).

NUREG-1397 defines current licensing basis to be "the NRC requirements imposed on the plant that are currently in effect....The licensing bases are contained in NRC regulations, plant technical specifications, orders, license conditions, exemptions, [NRC staff safety evaluations], and licensee commitments contained in the final safety analysis report, and other docketed licensing correspondence including responses to bulletins and generic letters." (6)

In addition to the current licensing basis, other design constraints, which are implemented to achieve certain economies of operation, maintenance, procurement, installation, or construction, identified in NUREG-1397 are:

- system functional requirements (including specifications)
- conformance to accepted industry codes and standards...
- vendor interface requirements [including approved operations and maintenance (O&M) manual recommendations]
- other design considerations that could be classified as "generally accepted good engineering practice"

If one of the following conditions exists, the plant is considered to be outside the bounds of its design basis:

- a structure, system, or component is unable to perform its intended safety function(s)

- a structure, system, or component is exceeding the specific value or range of values that were chosen for controlling parameters as its reference bounds for design

- entry into STS 3.0.3, or its equivalent

(4) Plant Condition Not Covered by Operating and Emergency Procedures

For plant conditions not covered by the plant's operating or emergency procedures, an ENS notification and LER are required for either of the following:

- the condition is required to be procedurally controlled (e.g., by a license condition or by a licensing commitment, such as a commitment to comply with Regulatory Guide 1.33, "Quality Assurance Program Requirements") and no applicable operating or emergency procedure exists

- the plant is operating outside existing required operating or emergency procedures for safety-related equipment ~~[Minor valve misalignments, such as a local instrument root valve, are not reportable. Significant valve misalignments are reportable.]~~ (7)

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General comment for all examples in this section: All examples provided describe conditions determined to be reportable. To be useful, examples should also be included to indicate what change in the condition would make it not reportable. Such a description would allow users of the guidance to understand the distinction that makes one condition reportable and another not reportable.

(8) The first example implies that <u>any</u> physical damage resulting from <u>any</u> waterhammer event results in the plant being seriously degraded. This clearly not the case. The consequences of the waterhammer event must be considered. If the waterhammer resulted in a safety system becoming inoperable, it may be reportable under 10CFR50.72(b)(2)(iii) and 10CFR50.73(a)(2)(v). If the waterhammer resulted in damage to the Reactor Coolant System boundary (i.e., a principle safety barrier) it would be reportable under 10CFR50.72(b)(1)(ii) and 10CFR50.73(a)(2)(ii). This first example needs to be clarified to reflect this logic.

(9) The change is needed to clarify what safety relevance means in this example.

(10) The fourth example states that loss of 100 gallons of Reactor Coolant (RC) places the plant in a seriously degraded condition. A plant's Technical Specifications allows continued operation with identified RC leakage of 25 gpm and unidentified RC leakage of 5 gpm. Even a small amount of in-containment leakage, well within Technical Specification limits, will eventually exceed the 100 gallon limit and results in a reportable condition. This is clearly not the intent of the original rule. This example needs to be clarified. The 100 gallon criteria should be deleted. During plant operation, the reporting criteria should be tied to the Technical Specification allowed Reactor Coolant System leakage rate.

(11) The fifth example dealing with a reactor trip breaker failing its trip bar lift force measurement test should be clarified. If the failure is limited to a single breaker it would not be reportable. If the failure is associated with multiple breakers or is indicative of a generic problem it would be reportable under this criteria.

(12) Nuclear power plants are analyzed for primary containment leakage equal to La. To consider a plant seriously degraded or in an unanalyzed condition due to excessive primary containment leakage, the leakage rate should exceed La not .6La. Revise this example and all other examples concerning primary containment leakage to set the threshold for reporting to La.

(13) Overall containment leakage is reportable following an outage under Appendix J to 10CFR50. Therefore, reporting local leak rate test failures per 50.73(a)(2)(ii) is considered redundant reporting to 10CFR50 Appendix J and unnecessary.

Examples

(1) Plant Being Seriously Degraded

- Reportable Events or Conditions

  - physical deformation occurring to components, systems, or structures (including supports) or causing inoperability of equipment that is important to plant safety that could reasonably have resulted from water hammer (8)

  - fuel cladding failures in the reactor or in the storage pool that exceed expected values, that are unique or widespread, or that resulted from unexpected factors

  - cracks and breaks in piping, the reactor vessel, or major components in the primary coolant circuit (e.g., steam generators, reactor coolant pumps, valves) that have safety relevance (e.g., generic implications), including significant welding or material defects (9)

  - an inadvertent loss of a significant quantity ~~(>100 gallons)~~ (in excess of TS RCS allowable leakage) of the reactor coolant system (RCS) inventory as a result of a mispositioned valve, a main steam safety/relief valve failing to reclose during testing while at power, or an unknown cause (10)

  - a reactor trip breaker failing its trip bar lift force measurement test as a result of a significant design, maintenance, or test problem that is indicative of a generic problem (11)

- Containment Integrity Lost During Operation

  While at 100 per cent power, during the performance of a surveillance test of the containment door interlock, the inner containment door failed open allowing a direct path from the containment to the atmosphere for a short time.

  An ENS notification is required because of the loss of primary containment integrity, a serious degradation of a principal safety barrier. An LER is required.

- Local Leak Rate Test Failures During Operation

  A 10 CFR 50, Appendix J, local leak rate test determined that a containment purge exhaust line penetration was leaking at 0.7 La. The total Type B and C leakage was 0.85 La, which exceeded the TS limit of 0.6 La. The licensee reported this in an ENS notification. The licensee made an update ENS notification when a TS required shutdown was begun several hours later and an (12) (13)

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(12) See Comment (12) of Page 46.

(14) Clarify this example. If the identified condition was found on only one stud, the condition would not be reportable. Also explain how the difference in stud hardness affects acceptability of the stud.

(15) This example should be expanded and clarified. The criteria presented on Pages 43 and 44 for reporting under an "Unanalyzed Condition" describes a logic that uses the general questions for determining if an Unreviewed Safety Question exists from 10CFR50.59. None of the examples presented indicate that this logic was used in determining reportability. In addition, it doesn't appear that any of the examples would in fact represent an Unreviewed Safety Question.

Unusual Event was declared. The licensee made update ENS notifications when the plant shut down and the Unusual Event was terminated after repairs to the valves were made and the leak rate was within TS limits. (12)

An ENS notification is required under this criterion because of the degradation of a principal safety barrier (primary containment) during operation, as evidenced by the leakage exceeding TS limits, requiring a plant shutdown. An immediate update ENS notification was required by §50.72(b)(1)(i)(A) of the initiation of the plant shutdown and by §50.72(c)(1)(i), §50.72(a)(1)(i) of the declaration of an emergency. The notification of the termination of the emergency was required by §50.72(c)(1)(iii). Although an LER is not required under §50.73(a)(2)(i)(A), it is required under §50.73(a)(2)(i)(B) and §50.73(a)(2)(ii).

- Degraded Reactor Head Studs (14)

  Plant technical staff was notified by engineering that destructive testing of a reactor head stud revealed the stud hardness was outside the FSAR requirements by eight hardness numbers.

  The condition is reportable under two reporting criteria: first, as a serious degradation of the RCS pressure boundary, and second, as a condition outside the design basis of the plant.

(2) Plant in Unanalyzed Condition (15)

- Reportable Events or Conditions

  - spills that create conditions that could affect component operability, qualification, or design life because of

    a) the extent and depth of water that floods or wets components not designed to be submerged or wetted and that restricts personnel access for safety-related functions

    b) higher-than-analyzed temperatures and humidity when the water is hot, which degrades components and can result in failures

    c) radiation levels above the area design basis that degrade components

  - serious RCS temperature or pressure transients exceeding design or technical specifications limits

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(16) This example should be expanded and clarified. As noted in Comment (15), it/ s not clear that this example would meet the criteria presented on Pages 43 and 44 for an Unanalyzed Condition. This condition affects a system in the plant. If operability were affected, this example would be better suited to reporting under 10CFR50.72(b)(2)(iii) and 10CFR50.73(a)(2)(v).

(17) This example should be expanded and clarified. As noted in comment (15), it's not clear that this example would meet the criteria presented on Pages 43 and 44 for an unanalyzed condition of the plant. If the condition affected operability of all the EDG than the plant would be in an unanalyzed condition. If it does not affect operability, it doesn't appear this would be reportable under any criteria. In the fourth sentence delete the words "a priority", since the meaning is not clear.

(18) As noted in comment (5), the criteria presented for reporting under "Plant Outside Design Basis" are not in accordance with the original rule. As a result, most of these examples are not appropriate examples for reporting under outside the plants design basis and thus should be expanded and clarified.. Many of the examples used are a degraded condition where full qualification is not confirmed (i.e., a code or standard is not fully met one way or another). Unless these degraded conditions affect safety system operability and places the plant outside the analyzed envelope, the conditions are not reportable under this paragraph.

(19) This example would be reportable as a condition outside the design basis of the plant if the open valves resulted in containment leakage exceeding the analyzed value of La.

- any significant deviation in either direction (beyond the allowable range) from a calculated critical position during reactor startup, even if a reactor trip does not occur and subsequent analysis adequately explains the anomaly, for example

  a) deviations caused by unexplained phenomena, improper rod position, unlicensed or improperly supervised trainees, are reportable

  b) deviations caused by routine calculational uncertainties are not reportable

- a containment spray discharge line, analyzed in a dry condition, containing water from system testing and resulting in an unanalyzed seismic condition (16)

• EDG Room Temperature Slightly Exceeds FSAR

The FSAR specifies the maximum permissible ambient air temperature for the emergency diesel generators is 95 °F. On a summer afternoon ambient air temperature was 96 °F. This represents an unanalyzed condition. If ~~a priority~~ engineering judgment indicates that the effect of the high ambient air temperature is inconsequential, the situation does not represent a reportable unanalyzed condition. (It also is not considered outside the design basis of the plant because it is a minor variation. Thus it is not reportable under this criterion.) If the engineering judgment indicates that the effect is not inconsequential, it is reportable. (17)

(3) Plant Outside Design Basis (18)

• Untested Containment Isolation Valves

A licensee determined that six normally open valves used for containment airlock cycling were containment isolation valves. The valves, which had not been leak rate tested, were closed to ensure containment integrity.

This event is reportable because the open valves resulted in ~~equipment had not been operated, analyzed, or tested for the safety-related function it was required to serve and containment integrity was called into question.~~ containment leakage exceeding the analyzed value of La. (19)

• Service Water System Leaks

A licensee experienced degradation of the service water system piping over time and numerous pinhole leaks or

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(18) See Comment (18) of Page 48.

(20) If the service water system leaks affect the operability of one loop of the system, the condition would not be reportable as a condition outside the design basis of the plant as the plant has been analyzed for loss of one loop. If the condition affects the operability of both loops of service water, the condition would be reportable as a condition outside the design basis of the plant. A leak, by itself, does not necessarily render the system inoperable. Also, not meeting Generic Letter 90-05 does not mean that the design basis is not met. Delete the last paragraph under this example and replace with the logic presented above.

(21) The second example should be expanded and clarified. It would appear this example only affects the control rod drive system. It's not clear how this condition affected the design basis of the plant. This example applies to BWRS. The PWR design allows group control rod withdrawal. Clarify this aspect. Suggest this example be changed and tied back to the impact on fuel integrity.

(22) The third example should be expanded and clarified. If the described condition was determined to nave affected the operability of one loop of service water the condition would not be reportable as the plant was analyzed and designed assuming one loop could be inoperable. If the condition was determined to have affected the operability of both loops of service water, the condition would be reportable since the plant was not analyzed and designed assuming no service water was operable.

(23) The fourth example should be expanded and clarified. The consequences of the condition need to be identified. If the condition affected the operability of only one division of emergency power, the condition would not be reportable as the plant has been designed and analyzed for this configuration. If the condition affected the operability of multiple divisions of emergency power, it would be reportable under this paragraph.

(24) The fifth example should be expanded and classified. It is not clear what the consequences are of the design deficiency.

The impact of the loss of Division 1 power is not described. What was the "temperature requirement for long-term core cooling"? What was the impact of this condition on the design basis of the plant?

(25) The sixth example should be deleted. A deviation from the specific requirements of Appendix R does not place a plant outside its design basis. The licensee was able to achieve safe shutdown through alternate methods. There were no consequences from this deviation on safe plant operation.

weeping through the walls of the piping occurred and continue to occur. There are plans and programs under way to replace the system in segments during refueling outages. However, when leakage occurs, the service water system does not meet Section XI of the ASME Code and operability and reportability determinations must be made. (18)

Leakage is reportable by ENS notification under 50.72(b)(1)(ii)(B) and by LER under 50.73(a)(2)(ii)(B) if the licensee is not in compliance with Generic Letter 90-05 ("Guidance for Performing Temporary Non-Code Repair of ASME Class 1, 2, and 3 Piping," dated June 15, 1990), the code under which the piping was designed, or the action statement in the LCO for operability of the system. (20)

- Reportable Events or Conditions

  - The licensee determined that instrument loop inaccuracies could result in safety injection initiation on low pressurizer pressure at a lower RCS pressure than assumed in accident analyses.

  - A licensee was able to move two control rods at one time, contrary to the design of control rod drive system. (21)

  - A licensee discovered two operable service water systems were not independent, as designed, because both cross-connect valves were open during power operation. (22)

  - The licensee discovered 78 non-Class 1E components directly tied to a Class 1E power supply without proper isolation devices in violation of Regulatory Guide 1.75 isolation requirements, which was a part of the plant design basis. (23)

  - The licensee found a standby service water (SSW) basin insufficiently designed to meet the basin temperature requirements of long-term core cooling, if Division 1 SSW electrical power was lost. (24)

  - The licensee had inadequate lighting to perform the remote shutdown procedure in accordance with Appendix R to 10 CFR Part 50. Operators needed to carry portable lights with them to perform this procedure. This event is reportable because fixed emergency lighting was not available which is outside the design basis given in the plant fire protection plan and the requirements of Appendix R to 10 CFR Part 50. (25)

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(26) The first example on this page needs to be expanded and clarified. The consequences of this condition on the operability of safety related equipment in the affected areas of the plant needs to be identified. What equipment was affected? What impact did this equipment being inoperable have on the plant? If there was no impact on the ability of the plant to be safely shutdown, the condition would not be reportable.

(27) The second example on this page should be deleted. The described condition had no impact on operability of the recirculation piping and, as a result, the plant was not outside its design basis.

(28) The third example on this page needs to be expanded and clarified. The impact of the missing hanger on system operability needs to be identified. If the missing hanger had no impact on operability the condition is not reportable. If the condition affected operability of one train of RHR, and it did not represent a more generic problem, it would not be reportable. The plant has been designed and analyzed for one train of RHR inoperable. If the condition affected the operability of the RHR system the, condition would be reportable under 10CFR50.72(b)(2)(iii) and 10CFR50.73(a)(2)(v).

(29) This example appears to be more of a human error. Unless the procedures governing plant shutdown did not require monitoring of critical parameters at all, the fact that the operator missed the changing power level does not mean the plant was operated in a condition not covered by plant procedures. The implication with this example is that any identified enhancement to procedures means the plant was operated in a condition not covered by plant procedures, which may not be the actual situation.

- The licensee discovered that combustible loads in several areas of the plant exceeded the limits in the fire hazards analysis. (26)

- The licensee discovered that there was a safety factor of 3 for the recirculation piping, although the FSAR provided a safety factor of 5 for hangers. The licensee concluded that the piping was operable until the next available outage, at which time there will be a drywell entry to restore the FSAR safety factor. The situation is reportable as a condition outside the design basis because the FSAR safety factor was not met. (27)

- During a system walkdown, personnel identified a hanger on the residual heat removal system drawing that was not present in the plant. The engineering organization determined that the hanger was assumed to be installed in the stress calculation for the piping system. If experience with this type stress analysis indicates a reasonable belief that the FSAR piping safety factor is not met, then it is reportable as a condition outside the design basis of the plant. (28)

(4) Plant Condition Not Covered by Operating and Emergency Procedures

- Operation with One MSIV Closed

  A main steam isolation valve (MSIV) fast closed while the plant was at 100-percent power as a result of a solenoid failure. The licensee reduced reactor power because of asymmetric power tilt and feedwater oscillations. No procedure existed for operating the plant in these conditions while the solenoid was being replaced. This event is reportable because there is no specific procedure for operating the plant with one MSIV closed.

- Unmonitored Positive Reactivity Addition (29)

  With a BWR reactor shutdown in progress, the plant was subcritical while control rods were being inserted into the core. Because there was insufficient decay heat to produce the steam needed for auxiliary steam loads, the reactor pressure and temperature decreased. When the reactor operator turned to his other duties, the reactor went supercritical and the intermediate range monitors (IRMs) tripped the reactor. Plant procedures did not address monitoring the IRM trend recorders to recognize positive reactivity increases early in the fuel cycle after control rod insertion was ceased.

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3.2.5 Natural Phenomenon or Condition Threatening Plant Safety

I. Principal Issues

The proposed guidance deviates from the language and intent of the regulations and original staff guidance in that it equates any licensee responsive action to an "actual threat to the safety of the nuclear power plant". Application of this new standard would improperly direct licensees to determine reportability based on their own actions rather than the criteria of the rule.

II. Overview

The comments are primarily designed to restore the applicable standard of an "actual threat" to the guidance. Further, the comments request modification of the guidance to provide that separate indicia such as responsive actions should give rise to a careful review for reportability (as provided by the NRC's original reporting guidance).

Implementation of the draft guidance would result in reporting of the following condition beyond the original language and intent of the requirements of 10CFR50.72 and 50.73:

> Any occasion on which administrative staff were authorized to take "liberal leave", i.e., leave early as a matter of convenience, even though little or no snow had actually fallen.

COMMENTS ON PAGE 52

(1) The change emphasizes that *LERs are due if the external event <u>actually</u> affected the site. ENS notifications are made for the threat of significant external conditions.

<u>(2)</u> Follow-up ENS notifications should be performed if the external threat that caused the original ENS notification was subsequently determined not to warrant a LER (due to the safety of the nuclear plant not actually being significantly hampered).

(3) Lightning is not considered a threat. Droughts are covered by minimum water level requirements.

(4) The "Discussion" section is rearranged to reflect how prompt and LER reports are expected to be used, and then to continue with the remaining text and examples.

(5) The changes place emphasis on determining reportability by evaluating the physical threat as opposed to determining reportability by <u>any</u> action taken.

COMMENTS ON PAGE 52 (continued)

(6) Insert 2 is from the original NUREG-1022, and states that if the plant takes action in response to a threat, then the situation should be reviewed for reportability. This guidance is consistent with the original intent of 10CFR50.72. It is noted that this position is less restrictive than the draft Revision 1, which states that any plant action in response to a threat is reportable.

Insert-52a (insert into Page 52)

It is expected that in the area of external threats, there will be a significantly greater amount of 50.72 (prompt) reports than 50.73 (LER) reports. This is due to the conservative and predictive nature upon which prompt reports are expected to be performed.

Insert-52b (insert into Page 52)

There are no prescribed limits, but in general, situations involving only monitoring by the plant's staff are not reportable, but when preventative actions are taken or if there are serious concerns, then the situation should be carefully reviewed for reportability.

If subsequent evaluations determine that the safety of the nuclear power plant was significantly hampered. If an LER is determined not to be required, a followup ENS notification should be performed to notify the Operations Center of this fact.

3.2.5 Natural Phenomenon or Condition Threatening Plant Safety (External Threat)

§50.72(b)(1)(iii)	§50.73(a)(2)(iii)
Licensee shall report: "Any natural phenomenon or other external condition that poses an actual threat to the safety of the nuclear power plant or significantly hampers site personnel in the performance of duties necessary for the safe operation of the plant."	Licensee shall report: "Any natural phenomenon or other external condition that posed an actual threat to the safety of the nuclear power plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant."

If not reported as an emergency under §50.72(a), licensees are required to report discovery of any natural phenomenon or condition threatening the plant safety to the NRC via the ENS as soon as practical and in all cases within 1 hour. Licensees ~~are~~ may be required to submit an LER within 30 days. (1) (2)

Discussion

These criteria apply only to acts of nature (e.g., tornadoes, earthquakes, fires, ~~lightning~~, hurricanes, floods, ~~droughts~~) and external hazards (e.g., industrial or transportation accidents). References to acts of sabotage are covered by 10 CFR 73.71. Threats to personnel from internal hazards are covered by separate criteria, viz §50.72(b)(1)(vi) and §50.73(a)(2)(x), as discussed in Section 3.2.8 of this report. (3)

These criteria require events to be reported if the threat or actual damage challenges the ability of the plant to continue to operate in a safe manner, including the orderly shutdown and maintenance of safe shutdown conditions.

Insert 1

(4)

Insert text from pages 53 & 54

The licensee must use engineering judgment to determine if a phenomenon or condition actually threatens or threatened the plant. For example, a minor brush fire in a remote area of the site that was quickly controlled by fire fighting personnel and did not present a threat to the plant need not be reported. However, fires that threaten ~~transmission lines (~~offsite power sources~~)~~ multiple or large fires that are moving in the direction of the plant and thus threaten plant equipment are reportable. A major forest fire, large-scale flood, minimum river water level, maximum heat sink temperature, or major earthquake that presents a threat to the plant ~~(as evidenced by plant staff actions to respond or prepare for response)~~ is reportable. ¶ Non-specific

(5) (5)

Insert 2

(6)

COMMENTS ON PAGE 53

3.2.5 Natural Phenomenon or Condition Threatening Plant Safety

(7) The guidance document should reflect only what is, and what is not, reportable. Discussions of voluntary reporting should be eliminated from the document because stating what needs to be reported as a voluntary report then causes reporting of this information to become mandatory.

(8) See Comment (1) of Page 52.

(9) The paragraph, per its first sentence, pertains to tornadoes. The word, "storm" is deleted for this reason.

(10) Clarification is added of the type of report to be made.

(11) See Comment (5) of Page 52.

as an ENS notification. However, a LER would not be necessary if the industrial or transportation accident was subsequently determined not to create an actual threat to the safe operation of the facility. (8)

normal seasonal preparations, for potential (but not specifically predicted) threats, such as brush fires in California, river flood in the spring, or hurricanes in the fall along the East Coast are not reportable. A rising river, which is anticipated to crest below an analyzed condition, would not constitute a threat. ~~but voluntary reporting may be applicable.~~ An industrial (7)
creates or transportation accident that ~~occurred~~ near the site and
~~created~~ a safety concern to the operators (~~often identified in~~ (8)
potential control room habitability ~~studies and probabilistic risk~~ occurs
~~assessments~~) is reportable. Concerns

With regard to tornadoes, the decision would be based on such factors as its size, location, and path. A tornado seen from the plant site is considered reportable. There are no prescribed limits, but usually situations such as a severe storm watch, involving only monitoring by the plant's staff, need not be reported. When significant preventive actions are taken, such as entering severe weather response procedures or having an extra operations shift on site, or evacuating buildings for personnel protection during a ~~storm or~~ tornado, or if there are serious (9)
concerns, then the situation is reportable under 50.72.

If a snowstorm, hurricane, or similar event could significantly hamper or is expected to significantly hamper personnel in the conduct of their activities, the event is reportable as an ENS notification. The (10)
licensee must use judgment on the basis of information available, such as the amount of snow expected or the potential flooding or damage during a hurricane, the extent to which personnel could be significantly hampered, the possibility of additional assistance being unavailable in an emergency, and the length of time the condition could exist. For example, if snow or a hurricane either is anticipated to interfere with, or interfered with, shift relief for several hours, delivery of fuel for emergency diesels, etc., the situation is reportable. The extent to which personnel could be significantly hampered may vary greatly with the plant design and location.

move to Page 52

For ENS reporting, the phrase "actual threat to safety of the nuclear power plant" is a reporting trigger. A "threat" is a potential or imminent source of peril. The known physical phenomenon or condition that may cause the peril does not have to exist at the site for the actual threat to exist. ~~An actual threat generates an actual response. If the plant staff takes action to deal with the situation, an actual threat exists.~~ (11)

For LER reporting, the physical phenomenon or condition is reportable if it affected the site.

Some natural phenomena may be accurately predicted. The credible prediction of a flood or severe weather that is expected to endanger the safety of the plant within a few days is sufficient cause to initiate emergency preparations, including an ENS

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COMMENTS ON PAGE 54

3.2.5 Natural Phenomenon or Condition Threatening Plant Safety

(12) See Comment (1) of Page 52.

move to page 52

notification within 1 hour of receipt of the initial prediction. Section 3.1.1 also discusses appropriate licensee actions in response to anticipated emergencies.

An ENS notification will provide sufficient time for the NRC to notify other Federal agencies, send NRC personnel to the plant site in advance of the condition, monitor the licensee's emergency preparations, and staff the region's incident response center and NRC's Operations Center, if necessary.

Section 3.2.8 of this report describes what is meant by "significantly hampering of site personnel in the performance of duties necessary for the safe operation of the plant." A natural phenomenon also may hamper or prevent plant personnel from performing their normal plant functions inside or outside in the protected area. For example, pipe freezing or breaking, limitations on access to outbuildings, flooding of buildings, structural damage to electrical components or buildings, may significantly hamper operations. A natural phenomenon, such as severe weather conditions, may cause evacuation of certain locations within the plant or significantly hamper personnel access/egress from the plant site. Damage caused by a natural phenomenon may pose an internal plant threat after the phenomenon has receded. Quite often a plant's emergency operating procedures require declaration of an emergency for tornado warnings or seismic alarms, in which case the event becomes reportable under §50.72(a)(1)(i).

Examples

(1) Earthquake

Seismic alarms were received in the Unit 1 control room although seismic monitors were not tripped in Units 2 or 3. The earthquake was readily felt on site and seismic instrumentation measured less than 0.02g lateral acceleration. The licensee made an ENS notification within 30 minutes of the earthquake, terminated the event after walkdowns of the plant were satisfactorily completed, and made an ENS update call.

An ENS notification is required because of an earthquake under 50.72(b)(1)(iii). [Normally an earthquake felt on site is reportable as an Unusual Event (NUREG-0654/FEMA-REP-1, Rev. 1) in which case an ENS notification under §50.72(a)(1)(i) would apply.] The ENS update call is required by 50.72(c)(2)(i) to report ensuing assessments. Any aftershocks that register on plant seismic instrumentation also would be separately reportable within an hour under 50.72(c)(1)(i). A single LER is required concerning the earthquake and its aftershocks if it affected the plant site. (12)

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COMMENTS ON PAGE 55

3.2.5 Natural Phenomenon or Condition Threatening Plant Safety

(13) Predictions from the U.S. Corps of Engineers are deemed to be credible.

(14) See Comment (1) of Page 52.

(2) Delayed Notification of Flood

A licensee had been provided detailed hydrological information from the U.S. Corps of Engineers indicating a flood would occur that would overflow portions of the plant and put the plant into an emergency class. The licensee had known this for a few days before the flood, but did not make an ENS notification. The NRC Operations Center learned of the situation and called the licensee; the licensee explained it was waiting for the end of the 50.72(b)(1) 1-hour limit after the reportability decision was made before making the ENS notification of an emergency declaration.

Delaying an ENS notification for days until the flood waters touch the plant boundary or to the end of a time limit does not meet §50.72(b)(1)(iii). A ~~credible~~ prediction by the U.S. Corps of Engineers of a flood that is expected to affect the safety of the plant is sufficient cause to initiate emergency preparations, which should include an ENS notification. The licensee is required to submit an LER within 30 days of the actual flood, if it affected the plant site. (13) (14)

(3) Hurricane

A licensee made an ENS notification, as part of their emergency procedure preparations, when Hurricane Bob was within 500 miles of their plant, indicating their intent to initiate a plant shutdown if the hurricane approached within 320 miles of the plant. The licensee made an update ENS notification when they commenced the plant shutdown stating their intention to be in hot shutdown within 4 hours and cold shutdown only if winds at the site exceed 100 mph.

An ENS notification is required because of the predicted hurricane threat to the site. ~~and the licensees preparations associated with meeting that threat.~~ The update ENS notification of the initiation of a plant shutdown is required under §50.72(c)(1)(i) and §50.72(b)(1)(i)(A). An LER is required under this criterion. (14)

(4) Plant Access Roads Closed by Storm

[See Section 3.2.7, Example (1) of "Loss of Offsite Response Capability."]

3.2.6 ECCS Discharge into the Reactor Coolant System

I. Principal Issues

Overall, the guidance appears to be consistent with the intent of the regulation.

II. Overview

The comments focus on correcting certain conclusions which are plant and system dependent. Also, certain deletions are proposed to simplify the reporting logic.

III. Specific

COMMENTS ON PAGE 56

(1) Statements of Consideration do not address too high pressure actuation as this is part of the design of the plant. The situation is reportable pursuant to 50.72(b)(2)(ii), 4-hour and LER reportable pursuant to 50.73(a)(2)(iv).

(2) Discharge into the vessel should be reported within one hour where the cause of the injection was a valid signal, or so reported, as a practical matter, when the validity of the signal is unknown within one hour.

(3) It is inappropriate to discuss other reporting criteria in this section.

3.2.6 ECCS Discharge into the Reactor Coolant System

§50.72(b)(1)(iv)	10 CFR 50.73
Licensees shall report: "Any event that results or should have resulted in Emergency Core Cooling System (ECCS) discharge into the reactor coolant system as a result of a valid signal."	[ECCS discharge is a subset of §50.73(a)(2)(iv), actuation of an engineered safety feature (ESF), as discussed in Section 3.3.2. Therefore, an LER is required.]

If not reported as an emergency under §50.72(a), licensees are required to notify the NRC via the ENS when a discharge of the ECCS into the RCS occurred or should have occurred as a result of a valid signal as soon as practical and in all cases within 1 hour.

<u>Discussion</u>

Experience with ENS notifications has shown that events involving ECCS discharge to the vessel are generally more serious than ESF actuations without discharge to the vessel. On the basis of this experience, the Commission has made this reporting criterion a 1-hour report. Those events that result in either automatic or manual actuation of the ECCS or should have resulted in ECCS discharge into the reactor coolant system if some component had not failed, or an operator action had not been taken, ~~or reactor coolant system pressure was too high,~~ are reportable. For example, if a valid ECCS signal was generated by plant conditions and the operator put all ECCS pumps in pull-to-lock position, although no ECCS discharge occurred, the event is reportable. (1)

The term "valid signal" refers to the actual plant conditions or parameters satisfying the requirements for ECCS initiation. ~~Excluded from this reporting requirement are those instances in which instrument drift, spurious signals, human error, or other invalid signals caused actuation of the ECCS. This lessens the effect of reporting on the individuals responsible for maintaining the plant in a safe condition. However, such events are reportable under §50.72(b)(2)(ii) as ESF actuations.~~ (2) (3)

Operational experience has demonstrated that the validity of an ECCS signal may not be able to be determined within an hour. ECCS signals resulting in injections should be considered valid until firm evidence proves otherwise. The effect of an ECCS injection on the plant from an invalid signal may be similar to that from a valid signal, such as exceeding the reactor vessel cooldown rate. Licensees have properly reported ECCS injections

COMMENTS ON PAGE 57

3.2.6 ECCS Discharge into the Reactor Coolant System

(4) The addition clarifies the reporting requirement.

into the reactor vessel as a result of ECCS signals later found to be invalid, making an update when the cause of the ECCS signal was identified & pursuant to 50.72(c) for timely notification of additional information or new analyses clarifying an event. (4) An ECCS injection, whether from valid or invalid signals, may also be reportable under other paragraphs of 10 CFR 50.72. For example, the injection could cause RCS temperature decreases resulting in mode changes, reactivity changes, reactor vessel nil-ductility temperature concerns, emergency declarations, and/or placing the plant outside its design basis. The effects of an ECCS injection may require immediate, 1-hour, or 4-hour ENS notification.

Any event reportable under §50.72(b)(1)(iv) also requires a 30-day LER under §50.73(a)(2)(iv) because an ESF was actuated.

Examples

(1) BWR Scram and ECCS Injection on Valid Signal

A loss of instrument air caused the feedwater pump minimum flow valves to fail open and decrease reactor vessel level. This resulted in an automatic reactor scram/turbine trip and high-pressure core spray and reactor core isolation cooling injection into the reactor vessel for 4 minutes. After reactor vessel level and the condensate and feedwater systems were restored, these pumps were secured. No emergency declaration was made.

An ENS notification is required under §50.72(b)(1)(iv) because an ECCS system injected water into the RCS as a result of a valid ECCS signal. Although the RPS actuation also is reportable within 4 hours under §50.72(b)(2)(ii), this more limiting criterion applies. An LER is required under §50.73(a)(2)(iv) because an ESF actuation occurred.

(2) PWR ECCS Injection Caused by Personnel Error

While surveillance testing containment isolation valves, a test pushbutton was inadvertently released, which initiated a "B" train containment isolation and ECCS. High-pressure ECCS pumps injected 300 gallons of borated water from the refueling water storage tank into the reactor before the "B" pumps were secured while the reactor remained at 94 percent power.

This event is not reportable under §50.72(b)(1)(iv), even though it was an ECCS injection into the RCS, because it resulted from an invalid signal; however, it is reportable as an ESF actuation under §50.72(b)(2)(ii) and an LER is required under §50.73(a)(2)(iv).

COMMENTS ON PAGE 58

3.2.6 ECCS Discharge into the Reactor Coolant System

(5) This would be reportable as an ESF actuation, not an ECCS discharge, since the initiating signal is an invalid signal.

(3) ECCS Operation Without Injection

During a reactor vessel hydrostatic pressure test while in cold shutdown, a low-pressure coolant injection (LPCI) pump automatically started when a reactor recirculation pump start caused a perturbation in reactor vessel level instrumentation readings. Because the reactor vessel pressure was above the LPCI pump shutoff head, no water was injected into the reactor vessel.

An ENS notification is required because this was a valid ECCS signal that should have resulted in an ECCS discharge into the reactor vessel. An LER is required under §50.73(a)(2)(iv). (5)

3.2.8 Internal Threat to Plant Safety

I. Principal Issues

The guidance as drafted deviates from the language and intent of the regulations and original staff guidance by deeming as reportable events that are non-safety-related or that did not significantly hamper personnel in safety-related functions.

II. Overview

The comments are intended to bring the guidance back within the language and intent of the regulation by applying the criteria of whether an event poses an actual threat to the safety of the plant or significantly hampers personnel in performing safety-related functions.

III. Specific

COMMENTS ON PAGE 64

(1) Draft NUREG-1022 Revision 1 contains guidance which states that "in-plant (radioactive) spills or floods" are reportable. There are concerns that this broad type of example could be misinterpreted to mean any radioactive spill without regard to size or location. In response to these concerns, this section has been modified such that the text parallels the original intent of 10CFR50.72 and 50.73 as discussed in the Federal Register (Volume 48, No. 168; Monday, August 29, 1983; page 39043):

> "This provision requires reporting of events, particularly those caused by acts of personnel, which endanger the safety of the plant or interfere with personnel in the performance of duties <u>necessary for safe operations</u>."
>
> In addition, according to NUREG-1022 Revision 0, these provisions are intended to address site hazards that hamper the ability of site personnel to perform safety-related activities affecting plant safety.

(2) The language deleted is inconsistent with the intent of the regulation. See Comment (1) above.

Insert-64 (insert into Page 64)

The criteria to be applied in each case is whether the event poses an actual threat to the safety of the nuclear power plant or significantly hampers site personnel in the performance of duties necessary for the safe operation of the nuclear power plant.

3.2.8 Internal Threat to Plant Safety

§50.72(b)(1)(vi)	§50.73(a)(2)(x)
Licensees shall report: "Any event that poses an actual threat to the safety of the nuclear power plant or significantly hampers site personnel in the performance of duties necessary for the safe operation of the nuclear power plant including fires, toxic gas releases, or radioactive releases."	Licensees shall report: "Any event that posed an actual threat to the safety of the nuclear power plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant including fires, toxic gas releases, or radioactive releases."

If not reported as an emergency under §50.72(a), licensees are required to report such an event or condition to the NRC via the ENS as soon as practical and in all cases within 1 hour. Licensees are required to submit an LER within 30 days.

Discussion

These criteria pertain to internal threats. The criteria for external threats, §50.72(b)(1)(iii) and §50.73(a)(2)(iii), are described in Section 3.2.5.

threats that may require reporting under these provisions.

Fires, toxic gas releases, and radioactive releases are not the only ~~reportable threats or hindrances to safe operation of the plant.~~ They were included in the criteria as examples only and were not meant to be an exclusive list of reportable ~~threats.~~ Additional typical examples of conditions reportable that may be potentially under these criteria are listed below. (1) (1)

Insert-64

- in-plant (radioactive) spills or floods
- smoke from failed electrical equipment
- ignition, detonation, burns, combustion, explosion and related the like of solid, liquid, or gaseous material in safety-~~and non-safety-related~~ nuclear process systems or elsewhere (2)
- high levels of carbon monoxide or dioxide in rooms
- discharge of carbon dioxide or halon systems
- significant operational problems (e.g., the loss of main or auxiliary transformer cooling during operation causing immediate power reductions/trips and personnel evacuations

COMMENTS ON PAGE 65

3.2.8 Internal Threat to Plant Safety

(2) The deleted language is inconsistent with the intent of the regulation. See Comment (1) of Page 64.

(3) The measures described do not necessarily indicate hampering of site personnel and may be commonly used. See Comment (1) of Page 64.

(4) The test to be applied is whether personnel are significantly hampered in performing safety-related functions. The test is independent of the type of condition present. See Comment (1) of Page 64.

because of an explosion hazard that could cause transformer, switchyard, or hydrogen fires, and loss of offsite power).

To clarify the intent of these criteria, the specific concepts are explained below.

- Threat

  The phrase "an actual threat to the safety of the nuclear power plant" is a reporting trigger. An actual "threat" is an imminent source of peril to the plant. Such an event is a source of impending peril to the safety of the nuclear power plant. ~~or its safety-related or other non-safety-related equipment, or it could have already degraded the plant's safety margins.~~ (2) The NRC is interested in real or actual threats as opposed to threats without credibility.

- ~~Broad~~ Scope

  ~~The scope of the regulation is broad, covering more than just safety systems.~~ (2) The regulation refers to "the safety of the nuclear power plant" and "safe operation of the nuclear power plant,". ~~which covers not only many systems found in the reactor building, but also most of those systems in the turbine or auxiliary building.~~ (2)

- Significant Hampering of Site Personnel

  The phrase "significantly hampers site personnel" ranges from hindering or interfering with (i.e., causing additional or unusual time-consuming precautionary measures, such as radiation work permits, protective or anticontamination clothing, cool suits, bunker gear, and self-contained breathing apparatus in areas not normally so encumbered) to, and including, prohibiting or preventing automatic or manual actions. (3)

  To be reportable, an event need not prevent site personnel from performing their duties--it is only necessary that they be significantly hampered, hindered, or interfered with in the performance of safety-related activities. ~~If the event caused a large portion of a major building to be contaminated, evacuated, flooded, or filled with smoke or gas, personnel may be able to perform their functions, but they are significantly hampered in their performance.~~ (4) If the condition makes performing routine safety functions in the nuclear power plant significantly more difficult, ~~and it is something more than a routine nuisance,~~ it is reportable. (4)

  This part of the criteria includes only those events that significantly hamper the ability of site personnel in performance of duties necessary for safe operation. Licensees must use engineering judgment in determining if

COMMENTS ON PAGE 66

3.2.8 Internal Threat to Plant Safety

(5) See Comment (1) of Page 64.

(6) The guidance document should reflect only what is and what is not reportable. Discussions of voluntary reporting should be eliminated from the document because stating what needs to be reported as a voluntary report then causes reporting of this information to become mandatory.

(7) Emphasis added.

(8) Editorial comment.

the event crosses the threshold of significantly hampering site personnel. The safety significance of the equipment involved, the potential effect of its failure on the plant operation and/or challenges to safety systems, and the potential need for immediate or periodic personnel access, should be factors in determining the significance of an event with regard to significantly hampering site personnel. ~~Significant hampering of site personnel in the secondary plant areas is also reportable, because it often increases the reactor transients initiated by secondary system anomalies.~~ (5)

- Plant Mode

Plant mode may be considered in determining if there is an actual internal threat to a plant; however, licensees need to use engineering judgment on a case-by-case basis. Do not incorrectly assume that everything that happens while a plant is shut down is unimportant and not reportable. ~~Licensees should consider other reporting requirements or voluntarily reporting if the event has potential generic implications to another plant or to another mode.~~ (6)

- Evacuations

In-plant releases are reportable if they require evacuation of rooms or buildings and, as a result, the ability of the plant personnel to perform necessary safety functions is significantly hampered. (7)

Fairly common events such as minor spills, small gaseous waste releases, or the disturbance of contaminated particulate matter (e.g., dust) that require temporary evacuation of an individual room until the airborne concentrations decrease or until respiratory protection devices are used, are not reportable unless the required evacuation affects the major part of a buildings of facility as described above. (8)

Any evacuation of multiple rooms or a significant portion of a large area, such as the containment, reactor auxiliary, turbine, radwaste, or spent fuel pool buildings, as a result of an actual fire, spill, flood, gas or radioactive release, is reportable if it significantly hampers the ability of the plant personnel to perform necessary safety functions. (5)

A precautionary evacuation is an evacuation that was made in order to be prudent, but was later found to be unnecessary because the condition causing concern did not actually exist. Although generally not reportable, precautionary evacuations are reportable under §50.72 if the causative condition is not fully investigated or understood within the 1-hour reporting limit (e.g., radiation monitors alarm, but grab samples had not been processed).

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COMMENTS ON PAGE 67

3.2.8 Internal Threat to Plant Safety

(9) The detailed discussion of Fire Threat, Toxic Gas Threat, Radioactive Release Threat, and In-Plant Spill/Flood Threat is unnecessary and should be deleted. The general guidance and examples provide adequate information. In the event the staff decides to retain this material, the comments shown should be incorporated. The modifications proposed reflect appropriate implementation of the applicable reporting requirements consistent with the above comments.

To be reportable, fire threats must pose an actual threat to the safety of the plant or hamper the ability of site personnel to perform safety-related activities affecting plant safety.

However, if an evacuation occurs because of an actual condition (e.g., fire, smoke, gaseous release, contamination, or flooding), the evacuation is not considered precautionary and is reportable. Evacuations had occasionally been incorrectly classified as precautionary and not reported because there was no adverse health effect or adverse plant operation. In other words, because no one was burned, injured, or contaminated, the evacuation was incorrectly classified as precautionary. The significant factor in deciding if an evacuation was precautionary is to recognize whether an actual event (e.g., a release or fire) has occurred.

Fire Threat (9)

Fire~~s~~ threats include ignition, detonation, burns, combustion and explosion~~s~~ ~~and the like~~ of solid, liquid, or gaseous material~~s~~ ~~in safety- and non-~~safety-related process~~s~~ ~~systems or elsewhere inside the plant protected area.~~ functions. that affect (9)

The NRC is interested in plant fires because of their specific plant significance and potential generic implications (e.g. a similar fire at another plant could have represented a larger threat to that plant). While the usual threshold for immediate reporting under 10 CFR 50.72(a)(1)(i) is a declaration of an Unusual Event because of a fire lasting 10 minutes, a fire need not be of a specific duration to be reportable under these criteria.

A fire's actual safety significance and hampering of personnel in the safe operation of the plant are the reportability guidelines. For example, a fire is reportable within 1 hour if it (9)

- threatens plant safety~~, as discussed above~~
- significantly hampers plant personnel in the performance of their safety-related duties ~~their duties, as discussed above~~
- causes significant damage to safety-related equipment (e.g., ~~safety-related~~ electrical cables, switches, instruments, etc.) (9)
- ~~causes manual or automatic operation of fire deluge, suppression, Halon, or Cardox systems~~
- ~~causes manual or automatic actuation of ESF/RPS (e.g., control room ventilation isolation, reactor trip)~~
- ~~requires requesting off-site fire department assistance~~
- ~~causes partial loss of normal plant lighting or communications~~
- affects more than one safety-related train or system
- ~~occurs in several plant areas concurrently~~

A fire in a control room is of special interest to the NRC and is usually reportable under these criteria for a variety of reasons. Control room operators may have to wear breathing apparatus by procedure which hampers communications and operations. Control room fires may have safety significance which is not apparent or

COMMENTS ON PAGE 68

3.2.8 Internal Threat to Plant Safety

(9) See Comment (9) of Page 67.

cannot be determined at the time of the event. Because of the close proximity of electrical equipment, control room fires may involve more than one train or system, which may be unknown to the operators. Heat, combustion products, or fire fighting chemicals may significantly impair system operability by damaging nearby electrical equipment. Testing, replacement of electrical equipment, or cleaning of electrical contacts near the fire may be required to ensure continued operability.

If a fire was not initially reported as an ENS notification because it was thought to be of minimal safety significance, and a subsequent ~~engineering~~ analysis determines that it did pose an actual threat to plant safety, then the event is reportable. ~~when the licensee management responsible for reporting is informed that the condition existed.~~ (9)

Radioactive and

Toxic Gas Threat (9)

The NRC is interested in radioactive and toxic gas releases because of their potential to significantly hamper personnel in the performance of safety-related activities ~~or to damage equipment important to safety. Toxic gas under this paragraph includes gas that is poisonous, acidic, has the capability to cause asphyxiation by reducing oxygen in the air (e.g., nitrogen, carbon dioxide), or is flammable.~~ If personnel are significantly hampered, the event is reportable. For instance, a toxic gas radioactive or release may prevent ~~immediate or periodic~~ access for operations personnel. ~~or a required roving fire watch. Personnel may require additional precautionary measures such as the use of respiratory protection devices or two-person teams. Toxic gas from an external source may prevent personnel from going outside to other buildings or may leak into a building, thus significantly hampering the performance of duties.~~ (9)

~~Toxic gas releases may result in temporary evacuations of personnel. Evacuation of even a single room or a significant portion of a large area as a result of a gas release is reportable because of the potential of the gas to spread.~~ (9)

~~Radioactive Release Threat~~ (9)

~~The NRC is interested in in-plant radioactive releases because of their potential to significantly hamper personnel and the potential for an offsite release. If personnel are significantly hampered by an actual in-plant release, the event is reportable under this criterion. For instance, a radioactive release may prevent immediate or periodic access for operations personnel or continuous fire watches. Personnel may require additional precautionary measures, such as the use of radiation work permits, protective clothing, or respiratory protection devices in normally accessible areas. Radioactive releases may result in temporary evacuations of personnel, which may result in personnel being delayed in accessing necessary areas during emergencies.~~ (9)

COMMENTS ON PAGE 69

3.2.8 Internal Threat to Plant Safety

(9) See Comment (9) of Page 67.

~~Evacuation of multiple rooms or a significant portion of a large area is reportable, as previously discussed.~~ (9)

In-Plant Spill/Flood Threat

Significant in-plant spills ~~in excess of 55 gallons~~ or floods have been under reported by licensees in some instances. These events are of interest to the NRC because of the potential for equipment damage, significant hampering of site personnel in the performance of duties, implications for environmental qualification, intersystem loss-of-coolant accidents (LOCAs), precursors to more serious events, or the potential for fuel becoming uncovered. (9)

In-plant spills or floods are reportable if any of the following, or other typically significant, consequences occur:

- The leaking system is a safety system and potentially involves an intersystem LOCA.

  This does not include small packing or gasket leaks, but does include events in which the packing is blown out. If leaks cause a significant flood, are located in an unisolable section of the primary system, cause significant eroding of piping or bolting, or cause personnel injury or hazard, they are reportable. Small leaks that directly affect other equipment, normal operations, or cause evacuations are reportable. The intent is to have significant spills and floods reported.

- ~~The leaking fluid is radioactive and contaminates a significant area, contaminates several individuals, or significantly contaminates one individual.~~ (9)

- ~~The leaking fluid is not radioactive, but is in a vital area, and potentially affects vital equipment.~~

- Operational compensatory measures are required, such as a power level decrease or equipment operation swap.

- ~~An ESF or safety equipment is rendered inoperable.~~ (9)

- ~~Electrical equipment was wetted down, such as from the containment spray headers.~~

- Flooding hampers operations personnel in performance of their duties (e.g., flooding in excess of sump pump capability, a depth of several inches on the floor, contamination requiring new access control measures, or electrical hazards).

safety-related

COMMENTS ON PAGE 70

3.2.8 Internal Threat to Plant Safety

(10) The example is confusing and does not contribute to clarification of the guidance. The example contains superfluous information apparently more pertinent to enforcement issues than to reportability issues. It is not clear which information is germane to the reportability determination.

Examples

Fire Threat

(1) Main Generator Excitor Fire

The licensee reported a fire in the main generator excitor housing. The reactor was manually tripped and taken to cold shutdown. The station fire brigade successfully extinguished the fire; no offsite fire-fighter assistance was required. Smoke from the fire was released to the environment via the turbine building. There were no radioactive releases or injuries to plant personnel.

An ENS notification is required because the fire threatened the safety of the nuclear power plant and significantly hampered personnel in the safe operation of the plant (i.e., the fire was sufficiently severe to threaten the loss of offsite power and require a manual trip). The licensee is required to submit an LER under both §50.73(a)(2)(x) and §50.73(a)(2)(iv) because an actual threat was posed and a manual reactor trip occurred.

(2) Control Room Fire

With Unit 2 operating at full power, a fire started at a hand switch in the control panel for an auxiliary feedwater (AFW) pump trip/throttle valve. At the same time, the solenoid for the valve, located in the AFW pump room, was smoking. The fuses blew as the 1-2 minute fire was put out with a portable fire extinguisher. The solenoid stopped smoking after the circuit fuse blew. The licensee did not sound the fire alarm, announce the location of the fire, or notify the fire brigade leader by radio pager of the condition. The fire was caused by an incorrect adjustment of the overspeed trip mechanism on the valve actuator, as a result of personnel error. For corrective actions, maintenance, post-maintenance testing, and fire reporting procedures and instructions were revised, and the remote electrical trip was redesigned. The licensee judged that the event was not a significant safety hazard to the plant and therefore was not reportable; however, the licensee submitted a voluntary LER a month late.

(10)

Making ENS or LER voluntary reports of a reportable event does not meet the requirements of 10 CFR 50.72 or 50.73. If a fire is determined to have been a safety threat after the fact, required reporting is necessary.

This event is reportable because it, as well as the licensee's actions, threatened plant safety. Other control

COMMENTS ON PAGE 71

3.2.8 Internal Threat to Plant Safety

(10) See Comment (10) of Page 70.

(11) Editorial.

(12) The example contains insufficient information to provide guidance for determining reportability.

(13) The example is deleted. Referencing another section of the document in this manner makes this document difficult to utilize.

room wiring and components in the AFW system near the hand switch were damaged by the fire as a result of the lack of fire stops and had to be replaced, fires occurred in several areas of the plant concurrently, and fire fighting procedures were not followed. An LER is required within 30 days of the event. (10)

(3) Onsite Fire

If a guard shack burns down and the fire does not actually threaten the plant, it would not be reportable. A fire that does not pose an actual threat to a plant is not reportable under 10 CFR 50.73. However, the fire may be reportable under 10 CFR 73.71.

(4) BWR Drywell Fire

A fire occurred in the three electrical 480-V, 240-V, and 120-V power trays in a boiling-water reactor (BWR) drywell while the plant was defueled. The aluminum conduits over the upper cable trays were melted. Welding and electrical activities were in progress in the vicinity at the time of the fire and electrical arcing was noticed in the trays. The components affected were the drywell and floor drain pumps, recirculation loop valves, nuclear instrumentation, and drywell blowers and dampers. Except for the cables, no equipment appeared damaged. (11)

An ENS notification is required because the fire occurred in a vital area and affected safety-related equipment in several systems. The licensee is required to submit an LER under §50.73(a)(2)(x) and §50.73(a)(2)(vii).

(5) Fire in Turbine Building

A fire occurred when a 4160-V to 480-V transformer exploded in the turbine building. The fire was extinguished by the fire brigade using carbon-dioxide extinguishers within 9 minutes. There were no injuries or other plant damage. (12)

An ENS notification is required because a fire of this nature and duration would typically involve hampering of personnel by smoke and heat, include a control room ventilation isolation, evacuation of the turbine building, summoning the fire brigade and fire department, and perhaps a secondary side initiated transient. An LER is required.

~~(6) Charcoal Adsorption System Fire~~

~~[See Example (6) in Section 3.1.1 of this report.]~~ (13)

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COMMENTS ON PAGE 72

3.2.8 Internal Threat to Plant Safety

(14) See Comment (13) of Page 71. Also, the example pertains to an external threat rather than an internal one.

(15) To improve the ease of utilizing this document, the example cited should be added to this section and deleted from Section 3.1.1.

(16) Prospective effects are not covered by the rule. Only actual effects should be considered.

Toxic Gas Threat

(1) Toxic Gas Release

The plant's control room ventilation was isolated when the toxic gas initiated on a valid signal. This appeared to be caused by roofers working on the control room roof in the area of the control room ventilation toxic gas monitor. The isolation was reset within 14 minutes.

An ENS notification is required because the control room ventilation was isolated as a result of a flammable, toxic gas. It is also reportable under §50.72(b)(2)(ii) because of the ESF actuation. An LER is required.

~~(2) Offsite Chlorine Gas Release~~ (14)

~~[See Example (2) in Section 3.1.1 of this report.]~~

~~(3) Freon Release in Vital Area~~

~~[See Example (3) in Section 3.1.1 of this report.]~~ (15)

Radioactive Release Threat

(1) Contamination and Evacuation of Turbine Building

A turbine building evacuation was ordered when a large area of the turbine building floor was contaminated. Condensate demineralizer resin was being transferred through an ultrasonic cleaner to a mix-and-hold tank. As the tank was being pressurized, a mispositioned inlet valve allowed 50 to 100 gallons of water/resin to blow out into the turbine building. The ventilation system spread loose surface contamination through various turbine building locations. The area near the tunnel read 2 R/hr on contact, with decreasing radiation and contamination levels further away. The licensee evacuated all personnel from the turbine building while assessing the problem. Eight operators or construction workers were contaminated with from 0.5- to 2-percent body burdens.

An ENS notification is required because an evacuation occurred in the turbine building, a major part of the facility. The event involved a significant amount of airborne and loose surface contamination in normally accessible areas, requiring additional protective measures to be taken. Plant operators were significantly hampered in performance of their duties because they were evacuated from areas containing safety-related equipment. ~~and would have been delayed in their duties during an emergency by~~ (16)

COMMENTS ON PAGE 73

3.2.8 Internal Threat to Plant Safety

(16) See Comment (16) of Page 72.

~~additional respiration protection and anticontamination requirements.~~ (16)

The licensee is required to submit an LER because the evacuation of the turbine building was not a precautionary measure, operators were hampered in the performance of their duties, and individuals received measurable uptakes of radioactive materials.

In-Plant Spill/Flood Threats

(1) River Water Spill

The licensee reported that a seal on a water box manway ruptured in the condensate system, allowing approximately 150,000 gallons of river water to flood the turbine and radioactive waste buildings. The basement floor of the radioactive waste building was covered with about 6 inches of water; about 1 1/2 inches of water covered the floor of the turbine building. The water, drawn from the river and used to condense steam after it has passed through the turbines, picked up small amounts of radioactive contamination from the flooded basement area, but none was released to the environment. The plant, operating at 20-percent power at the time of the failure, was manually scrammed.

This event is reportable because the magnitude of the flooding posed a threat to the safety of the nuclear power plant, prompted a manual reactor scram, and significantly hampered site personnel in the performance of duties necessary for the safe operation of the plant. The licensee also is required to submit an LER.

(2) 350-Gallon Spill in the Chemical and Volume Control System (CVCS)

A CVCS control valve unexpectedly closed, pressurizing the letdown line to greater than normal pressure and causing a leak in an unidentified component outside the containment. Control room operators recognized the leak when the volume control tank lost about 350 gallons in 5 minutes, which exceeded the RCS unidentified leakage limit of 1 gpm and the identified leakage limit of 10 gpm. The ventilation process radiation monitors placed the auxiliary building filtered exhaust system in its filtered mode for 30 minutes. The spilled reactor coolant contaminated the Unit 2 valve gallery and about 75 square feet in the auxiliary building, outside the valve gallery.

This event is reportable under §50.72(b)(1)(vi) and §50.73(a)(2)(x) because there was an actual threat to the

COMMENTS ON PAGE 74

3.2.8 Internal Threat to Plant Safety

(17) The information deleted is redundant to the preceding information and does not contribute to the determination of reportability.

(18) The information is deleted because it is inappropriate to discuss other reporting criteria in this section.

safety of the nuclear power plant. ~~There was an inter-system LOCA, with a RCS leak rate greater than allowed by the TS, resulting in an in-plant spill of radioactive fluid that contaminated part of the auxiliary building.~~ (17)

~~This event is also reportable under §50.72(b)(2)(ii) and §50.73(a)(2)(iv) because of the ESF actuation of the auxiliary building exhaust system.~~ (18)

3.3.1 Shutdown Plant Found in Degraded or Unanalyzed Condition

I. Principal Issues

The proposed guidance deviates from the language and intent of the regulations and original staff guidance in the following manner:

(1) The introduction of the terms "Engineering Design Basis" and "Licensing Basis" when evaluating conditions for reportability as a condition outside the design basis of the plant significantly expands the considerations licensees need to evaluate.

(2) The expansion of reporting from the plant level to the system and component level.

(3) Errors that occur in the use of approved plant procedures are now added to the scope of reporting.

II. Overview

The comments are intended to bring the guidance back within the language and intent of the regulation.

Implementation of the draft guidance would result in reporting of the following example conditions beyond the original language and intent of the requirements of 10CFR50.72 and 50.73:

(1) The discovery that the stress level at any valve on a safety-related system exceeds code allowable but does not affect component or system operability.

(2) Discovery of equipment qualification requirements on certain instruments in a safety-related system are not fully documented but do not affect component or system operability.

(3) Discovery of a valve misalignment on any plant system.

III. Specific

Refer to the mark-ups on the following pages.

COMMENTS ON PAGE 77

3.3.1 Shutdown Plant Found in Degraded or Unanalyzed Condition

(1) The third example is noted as reportable due to the plant being in an unanalyzed condition. The criteria presented on Pages 43 and 44 of the NUREG should be used to establish that the condition is reportable. The example should be expanded and clarified.

reinsertion) that far exceeded the anticipated number of failures. The defects were generally pinhole sized. The fuel cladding failures were caused by long-term fretting from debris that became lodged between the lower fuel assembly nozzle and the first spacer grid, resulting in penetration of the stainless-steel fuel cladding. The source of the debris was apparently a machining by-product from the thermal shield support system repairs during the previous refueling outage.

An ENS notification is required because a principle safety barrier (the fuel cladding) was found seriously degraded. An LER is required.

(2) Corrosion of a Control Rod Drive Mechanism Flange Resulted in a Reactor Coolant System Pressure Boundary Degradation

While the plant was in hot shutdown, a total of six control rod drive mechanism (CRDM) reactor vessel nozzle flanges were identified as leaking. Subsequently one of the flanges was found eroded and pitted. While removing the nut ring from beneath the flange, it was discovered that approximately 50 percent of one of the nut ring halves had corroded away and that two of the four bolt holes in the corroded nut ring half were degraded to the point where there was no bolt/thread engagement.

An inspection of the flanges and spiral wound gaskets, which were removed from between the flanges, revealed that the cause of the leaks was the gradual deterioration of the gaskets from age. A replacement CRDM was installed and the gaskets on all six CRDMs were replaced with new design graphite-type gaskets.

An ENS notification is required because the condition caused a significant degradation of the reactor coolant system pressure boundary. An LER is required.

(3) Inadequate Original Design of Control Room Emergency Ventilation System Coolers Results in Plant Operation in an Unanalyzed Condition (1)

During a design review of the control room emergency ventilation system during a refueling outage, it was discovered that the system's calculated cooling capacity was not adequate. The control room temperature could exceed the design limit of 110 °F during a design basis-accident when offsite power remained available because the control room heat load is higher when offsite power is available than when it is lost because more equipment and lighting in the control room remain energized. This condition was the result of inadequate original design.

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COMMENTS ON PAGE 78

3.3.1 Shutdown Plant Found in Degraded or Unanalyzed Condition

(1) See Comment (1) of Page 77.

(2) Examples 4, 5 and 6 all deal with conditions involving containment leakage. See Comment (12) of Page 46. Revise all these examples to note that containment leakage exceeded La and that this is why the example is reportable.

The ability of the control room emergency ventilation system to perform its design cooling function could not be confirmed under the current analytical assumptions; therefore, the plant was considered to be in an unanalyzed condition. (1)

An ENS notification is required within 4 hours of discovery of the design problem. An LER is required.

(4) Containment Integrity Lost During Shutdown (2)

While in hot shutdown, a licensee discovered that required containment integrity was lost as a result of a packing leak on a containment personnel airlock door lock operator equalizing valve. The plant was required by TS to be in cold shutdown within 30 hours of the loss of containment integrity.

An ENS notification is required because the loss of required containment integrity, had it existed while the reactor was in operation, would have resulted in a serious degradation of a primary safety barrier. An LER is required by §50.73(a)(2)(ii).

(5) Type A Containment Integrated Leak Rate Test Failure (2)

During containment pressurization for the 10 CFR Part 50, Appendix J, containment integrated leak rate test (ILRT), the reactor building to torus vacuum breaker air-operated valve flange was found to be leaking, making the test unsatisfactory. The licensee determined that the same valve was replaced during the last refueling outage, but no ILRT was performed since then, therefore, it was probably leaking during the entire operating cycle.

An ENS notification is required because the failure of the "as found" containment ILRT, had it been found while the reactor was in operation, would be a serious degradation of a principal safety barrier. A failed ILRT is reportable by itself; additional evidence of loss of containment integrity during operation, as in this case, is unnecessary to require reporting. An LER is required by §50.73(a)(2)(ii).

(6) Type B and C Testing Failure While Shutdown (2)

A high pressure coolant injection exhaust check valve failed its local leak rate test (LLRT), putting the combined LLRT for all valves and penetrations above their TS limit of 0.6 La.

An ENS notification is required because the failure to meet the TS LLRT limit, had it been found while the reactor was

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3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

I. Principal Issues

The guidance as currently drafted would lower the threshold of reporting to include conditions at the component level of Engineered Safety Features (ESFs), contrary to the language and intent of the regulation and original staff guidance, which focuses on system actuation. In addition, the draft guidance redefines ESF systems for reporting purposes, regardless of the plant's actual licensing basis.

II. Overview

The purposes of the comments are to resolve the issues summarized above, and to provide clear and concise definitions of the phrases within the rule, specifically what constitutes an ESF actuation, so that the rule can be consistently interpreted and applied.

III. Specific

COMMENTS ON PAGE 80

(1) Agree that only significant plant transients should be reported. However, Example 8 (page 87) is considered reportable even though the event may be considered not significant.

(2) "Licensing bases" is too broad of a statement and may include information that does not pertain to this issue.

3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

§50.72(b)(2)(ii)	§50.73(a)(2)(iv)
Licensees shall report "any event or condition that results in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS). However, actuation of an ESF, including the RPS, that results from and is part of the preplanned sequence during testing or reactor operation need not be reported."	Licensees shall report "any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS). However, actuation of an ESF, including the RPS, that resulted from and was part of the preplanned sequence during testing or reactor operation need not be reported."

If not reported under §50.72(a) or (b)(1), licensees are required to report any engineered safety feature actuation, including the reactor protection system, to the NRC via the ENS as soon as practical and in all cases within 4 hours of the event. Licensees are required to submit an LER within 30 days.

Discussion

The Statements of Consideration for the LER rule indicated that ESF systems, including the RPS, are provided to mitigate the consequences of a significant event; therefore, ESFs should (1) work properly when called upon and (2) should not be challenged frequently or unnecessarily. The Commission was interested both in events for which an ESF, including the RPS, was needed to mitigate the consequences of an event (whether or not the equipment performed properly) and events in which an ESF operated unnecessarily. The Statements of Consideration also indicated that operation of an ESF as part of a preplanned operational procedure or test need not be reported.

The Commission also noted that ESF actuations, including reactor trips, are frequently associated with significant plant transients and are indicative of events that are of safety significance. (1)

The reported design information is used by the NRC in confirmation of plant ~~licensing~~ bases, identification of precursors to severe core damage, reviews of management control systems, performance indication, and the identification of actions to minimize unnecessary actuations of safety systems. Also, invalid (2)

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COMMENTS ON PAGE 81

3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

(3) By discussions with NRC and industry representatives, it has become apparent that wide disparity exists in the interpretation of Engineered Safety Feature (ESF) reporting requirements. The current written guidance for making determinations lacks the clarity needed to provide consistency in reporting ESFs across the industry. This has resulted in diverse regional and site-specific (both NRC and industry) interpretations of these requirements. Since ESF actuations represent a significant portion of the nuclear industry's yearly LER total, and given the statistical nature of the analysis of these LERs, more consistency in reporting is both warranted and desired.

A review of the concerns being experienced with reportability under 10CFR50.73(a)(2)(iv) indicates that there is a lack of clear and definitive understanding of certain phrases within the rule such as 11 actuation of any Engineered Safety Feature" and "challenges to the Engineered Safety Feature."

A concise definition of an "ESF actuation" was developed. This definition employs a number of precise terms which have themselves been defined to provide further clarification. In this way clear, consistent guidance for determining an event's reportability under 10CFR50.72(a)(2)(iv) can be obtained by comparison of the event with the definition of ESF actuation and its component terms. These definitions are contained in the definition section of this document. The definitions were developed by using standard definitions and concepts contained in regulatory documents and past industry practices.

At the core of this ESF reporting guidance is development of an understanding of the phrase "challenges to an ESF system." Once the term "ESF actuation" is clarified, the intent of challenge is made clear. In order to challenge the ESF, the ESF must be actuated. If a <u>component within the ESF</u> is actuated or fails, it may be reportable under different sections of the LER Rule or under the Nuclear Plant Reliability Data System (NPRDS), but not necessarily control 10CFR50.73(a)(2)(iv). To make the rule meaningful as an informational database, the proper section of the rule must be utilized for reportability. Therefore, the intent of the phrase "challenge to an Engineered Safety Feature" is contained in the BWROG-proposed definition of ESF actuation.

The definitions on Pages 81 and 83 should be replaced with those below.

A. <u>Standard Definitions</u>

<u>Actuation</u>: Actuation of enough channels to complete the minimum actuation logic, i.e., actuation of sufficient channels to cause activation of the ESF actuation system. Ref. NUREG-1022.

COMMENTS ON PAGE 81 (continued)

Sensor: That portion of a channel which responds to changes in a plant variable or condition and converts the measured process variable into an electric or pneumatic signal. Ref. IEEE 603-80.

Actuation Device: A component or assembly of components that directly controls the motive power (electricity, compressed air, hydraulic fluid, etc.) for actuated equipment. Examples of actuation devices are circuit breakers, relays and pilot valves. Ref. IEEE 603-80.

Actuation EQui*pment: The assembly of prime movers and driven equipment used to accomplish a protective action. Examples of prime movers are turbines, motors and solenoids. Examples of driven equipment are control rods, pumps and valves. Ref. IEEE 603-80.

B. Utility Guidance Definitions

Bases: These definitions come from standard Technical Specifications, NUREGs, Reg. Guide, documents that were already approved.

ESF Actuation: A manual or automatic initiation of an ESF from a valid or spurious signal to sufficient ESF channels that causes the initiation of that ESF unless it had been properly removed from service and not required to be operable per Technical Specifications.

ESF: The Engineered Safety Features as defined in each plant-specific USAR/FSAR.

Valid Signal: A signal injected at the sensor that causes or should cause actuation of a channel.

Spurious Signal: A signal whose source cannot be determined.

Channel: A system that contains applicable actuation relays, logic and circuitry from the sensor up to and including the actuation device.

Removed from Service: The component or system is intentionally mechanically or electrically disabled such that it is not capable of performing its intended function.

Preplanned Actuation: A preidentified, documented and communicated evolution which could result in an ESF actuation. This evolution must be specifically documented in station logs or procedures, communicated to shift operations management prior to performing the evolution, and verified following the evolution.

(4) Component level actuation may not be reportable under this criterion. The language of the rule and the Statements of Consideration indicates that it is the actuation of the ESF system, not a component within the system, that is the key.

COMMENTS ON PAGE 81 (continued)

(5) As the Staff recognizes, the ESF systems vary from plant to plant based on specific needs to mitigate an accident. Additionally, the ESF systems were clearly identified in the FSAR during the plant licensing stage and later updated in the FSAR (USAR). For most plants, Chapter 6 of the FSAR (or USAR) identifies those systems. As the Staff recognizes, there may be supporting systems to each ESF system which are not identified in Chapter 6 of the FSAR (USAR). These supporting systems were not considered as ESF systems, but rather considered as essential auxiliary supporting (EAS) systems. In addition, Chapter 15 may include discussions of additional systems that are not considered as ESF systems but merely are discussed as an alternate means to mitigate an accident.

The Standard Review Plan (SRP), Section 7.3, defines and distinguishes the differences between typical Engineered Safety Feature Systems and typical Essential Auxiliary Supporting Systems. In addition, the *SRP defines engineered safety features actuation system (ESFAS) as all electric and electromechanical equipment involved in detecting a plant condition requiring operation of an ESF or EAS system and in initiating the operation of the ESF or EAS system.

Therefore, if the Staff's intent is to achieve comparable and uniform reporting requirements, a rule change should be considered for reporting of EAS system events. The current examples provided in this section appears to be a change in the definition rather than clarification of reporting requirements of ESF actuations. Additionally, to redefine current licensees' definitions of ESF Systems through NUREG will cause conflict with their FSAR/USAR and cause substantial confusion to plant personnel (e.g., Operations, Engineering).

(6) The RPS varies from plant to plant based on specific needs to mitigate an accident. The RPSs were clearly identified in the FSAR during the plant licensing stage and later updated in the FSAR (USAR). In addition, SRP 7.2 defines RPS. Therefore, to define RPS in a NUREG will contradict the definitions that already exist.

actuations of ESFs sometimes provide insights into systems interactions and system dynamics that testing does not disclose. The guidelines also define ESF systems (including emergency power), RPSs, and actuations for reporting consistency.

Definitions (3)

(1) ESF Systems

ESFs are defined to be those nuclear power plant systems that function to mitigate the consequences of postulated accidents. Postulated accidents are generally identified in plant safety analysis (e.g., Chapter 15, "Accident Analysis," of a plant's final or updated safety analysis report (SAR)).

If ~~components or~~ systems are taken credit for in safety analysis, these ~~components or~~ systems are considered to be ESFs for reportability purposes. Many, but not necessarily all, ESF systems are identified in Chapter 6, "Engineered Safety Features," of an SAR. ~~In some instances, components or systems taken credit for in safety analysis might not be~~ specified as being ESFs, but are considered as such for reportability purposes.[1] The intent of this is to achieve comparable reporting among all plants. For older plants that do not conform to Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants," this information might be found in other chapters of the SAR. (4) (5)

Table 2 contains a partial listing of typical ESF systems that, if taken credit for in safety analysis, are subject to reportability. Equivalent plant systems with different names are to be considered ESF systems for reportability. As Table 2 is only a typical listing of ESF systems, licensees should provide site-specific lists of ESFs to ~~their staffs for use in reportability determinations.~~

~~(2) Reactor Protection Systems~~

~~RPSs are defined to be those nuclear plant systems that function to shut down (i.e., trip or scram) the reactor, including RPS sensors, power supplies, logic, bypass circuitry, hydraulic scram systems, and reactor trip breakers (or their equivalents).~~ (6)

[1] The NRC staff recognizes that some plants have not previously reported actuations of some of these ESFs because the FSAR designations of ESF equipment varies (e.g., emergency diesel generators).

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3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

(5) See Comment (5) of Page 81.

(5)

TABLE 2 . TYPICAL ESF SYSTEMS
Emergency Core Cooling Systems (ECCSs) For pressurized water reactors (PWRs): • reactor coolant system accumulators • boron injection system • high-, intermediate-, and low-head injection systems, including systems for charging using centrifugal charging pumps, safety injection, and residual (decay) heat removal and their water sources • associated valves, piping, instrumentation, interlocks, pumps, tanks, and necessary heat tracing For boiling water reactors (BWRs): • high- and low-pressure core spray systems and their water sources • high-pressure coolant injection system, feedwater coolant injection system, residual heat removal system, and their water sources • isolation condenser system, reactor core isolation cooling system • automatic depressurization system • associated valves, piping, instrumentation, interlocks, pumps, tanks, and necessary heat tracing
Containment Systems • containment and reactor vessel isolation systems • containment heat removal and depressurization systems, including the containment spray and additive system and the fan cooler system • containment air purification and cleanup systems • containment combustible gas control systems, including hydrogen recombiners, igniters, nitrogen inerting systems, and containment atmospheric dilution systems • BWR standby gas treatment systems
Heating, Ventilating and Air Conditioning (HVAC) Systems for the Control Room and Fuel Handling Areas
PWR Auxiliary Feedwater Systems
Electrical Systems • emergency ac electrical power systems, including emergency diesel generators (EDGs) and their associated support systems (even if classified as an essential auxiliary support in the plant's SAR), and BWR dedicated Division 3 EDGs and their associated support systems • actuation and control systems (including associated interlocks) for engineered safety feature (ESF) systems
Essential Auxiliary Support Systems Auxiliary support systems are those systems that are necessary for ESF systems to be capable of performing their specified functions and that receive an actuation signal (e.g., a safety injection signal, ESF actuation signal, or other similar actuation signal) to initiate their functions, such as • cooling water systems • HVAC systems for ESF equipment areas

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3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

(3) See Comment (3) of Page 81.

(4) See Comment (4) of Page 81.

(6) See Comment (6) of Page 81.

(7) Clarification. See also Example (3) on Page 86.

(8) Per Statements of Consideration (Page E-5, Column 1).

~~For guidance on reporting ATWS actuations, see "Anticipated Transients Without Scram (ATWS) System Reporting" at the end of this "Discussion" section.~~ (6)

(3) Actuation of an ESF or the RPS (3)

Actuation of ~~a system or component of~~ an ESF or the RPS is (4) defined as either

- receipt of a signal(s) in the plant's protection system sufficient to satisfy the protection channel coincidence logic necessary to activate the ESF/RPS system ~~or component~~, independent of whether the ESF/RPS (4) system ~~or component~~ operates

- deliberate or inadvertent actions (manual or automatic) or plant conditions that activate the ESF or RPS system/component without the protection channel coincidence logic being satisfied (e.g., manual activation of a safety injection pump, an electrical jumper being used to start an emergency diesel generator, or set point drift causing a BWR main steam safety/relief valve to open)

(4) Valid Actuation

Valid ESF/RPS actuations are those that are (a) automatically initiated by the measurement of an actual physical system parameter that was within the established set point band of the ESF sensor that provides the signal to the (7) protection system's logic (whether or not the ESF functions properly or a design basis need exists) and (b) manually initiated in response to plant conditions.

(5) Invalid Actuations

Invalid ESF/RPS actuations are those not considered "valid" as defined above.

<u>Reportability of Events</u>

All ESF actuations, including actuations of the RPS, are reportable regardless of the plant operating mode or power level or the significance of the structure, system, or component that initiated the event or whether initiated manually or automatically. The fact that the safety analysis assumes that an ESF system will actuate automatically under certain plant conditions does not preclude the need to report such actuations. Actuations that need not be reported are those initiated for reasons other than to mitigate the consequences of an event (8) (e.g., at the discretion of the licensee as part of a planned procedure or evolution).

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3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

(4) See Comment (4) of Page 81.

(9) Although the ATWS mitigation system is a backup for RPS, the system should not be considered as part of a reactor protection system. The function of the ATWS (Diverse Scram System) is to provide a diverse method of de-energizing the control and safety rods in the event the RPS does not function as designed.

The ATWS system is considered to be a non-safety related system; there is no TS LCO and it is not single failure designed.

However, a reactor trip initiated by ATWS will be reported under "Plant Shutdown" and/or 10CFR50.72(b)(2)(iii) [10CFR50.73(a)(2)(v)] and/or 10CFR50.73(a)(2)(vii).

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COMMENTS ON PAGE 92

3.3.3 Event or Condition That Alone Could Prevent Shutdown of the Reactor, Removal of Residual Heat, Control of the Release of Radioactive Material, or Miti*gation of the Consequences of an Accident

(5) Editorial.

(6) This section should be deleted. The original rule and the explanation provided on Page 90 describe the requirement for reporting of events or conditions that "alone" prevent the fulfillment of a safety system function. Reporting of multiple independent failures is contradictory to the "alone" requirement. These types of events will generally be reportable under another criterion of the LER Rule.

(7) The addition of events or conditions not reportable provides valuable information. It allows the reader to more clearly distinguish what makes one event reportable and another one not reportable. This approach should be used in each section of the document.

- an actual single event or condition that disabled multiple trains of a safety-related system

- an actual event or condition that disabled one train of a safety-related system and could have affected a redundant train

- a Condition or potential single event ~~or condition~~ that could have disabled multiple trains of a safety-related system (5)

~~Multiple Independent Failures~~

~~Whenever there are a number of simultaneous independent events or conditions that cause two or more functionally redundant trains to be unable to perform their safety functions concurrently, they are reportable under these criteria.~~ (6)

Reportability of any of the above type failures (single, common-mode, or multiple) under both 10 CFR 50.72 and 50.73 is independent of whether

- the safety function of the system or structure was demanded at the time of discovery

- power level or plant mode

- the system or structure was required to be operable at the time of discovery

- the cause of a potential failure of the safety function was corrected before an actual demand for the safety function could occur

- other systems or structures were available that could have or did perform the safety function

- the entire system or structure is specified as ESF or safety related, if the plant safety analysis in the USAR relied on it to perform or if it supports or could affect a system that performs a safety function

- the problem occurs in a non-safety-related portion of a safety-related system, if it prevents the performance of the safety function

The following types of events or conditions generally are not reportable under these criteria: (7)

- failures that affect inputs or services to systems that have no safety function (unless it could prevent the performance of a safety function of an adjacent or interfacing system)

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3.3.3 Event or Condition That Alone Could Prevent Shutdown of the Reactor, Removal of Residual Heat, Control of the Release of Radioactive Material, or Mitigation of the Consequences of an Accident

(8) See Comment (6) of Page 92. The original rule and the explanation provided on Page 90 describe the requirement for reporting of events or conditions that 'alone" prevent the fulfillment of a safety system function. Reporting of multiple independent failures is contradictory to the "alone" requirement. These types of events will generally be reportable under another criterion of the LER Rule.

(9) Removal of any system from service in accordance with Technical Specifications to do maintenance or testing, is not reportable.

(10) Licensees are not required to speculate as to the impact of events or conditions of their plant on other plants. Nor are licensees required to submit a voluntary LER in any case. Licensees <u>may</u> submit a voluntary LER.

- a single defective component that was delivered, but not installed (However, a number of such defective components could be reported as a generic issue under this criteria if it alone could have prevented fulfillment of a safety function. If the single uninstalled defective component could have created a substantial safety hazard, it is reportable under 10 CFR Part 21.) (8)

- removal of a ~~redundant~~ safety system train from service for maintenance or surveillance testing (when done in accordance with an approved procedure, the plant's technical specifications permit the resulting configuration, and the train is returned to service within the time limits specified in the plant's technical specifications) (9)

- independent failure of a single component (unless it is indicative of a generic problem, it alone could have caused a safety system failure, or it is in a single trains)

- a procedure error discovered before procedure approval that alone could have prevented the fulfillment of a safety system function (8) ~~(unless other plants may have made, but not discovered, the same error, in which case licensees are requested to submit a voluntary LER or ENS notification, as the situation warrants)~~ (10)

<u>Examples</u>

(1) Single Failure in a Multi-Train System Preventing Accident Mitigation

The licensee received a letter from its reactor vendor describing a design deficiency of the safety injection block circuitry that could make it possible for a single failure of the manual block switch to render both trains of the safety injection system (SIS) inoperable. The licensee determined that separate block switches for each train of the SIS had to be installed to eliminate this problem before restarting. The licensee made an ENS notification and submitted an LER.

An ENS notification is required because the system could have been unable to perform its safety function to mitigate the consequences of an accident. It is reportable even though the cause of the potential failure was corrected before the actual failure occurred at that plant. An LER is required.

(2) Single-Train System Failure Preventing Accident Mitigation and Residual Heat Removal

When the licensee was preparing to run a surveillance test, a high-pressure coolant injection (HPCI) flow controller was

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(11) Clarify the nature of the failure. If the operator reset the system and the valve reopened then the event is not reportable. If a component failure or system problem resulted in the valve reopening, then the event is reportable.

found inoperable; therefore, the licensee declared the HPCI system inoperable. The plant entered a technical specification requiring that the automatic depressurization, low-pressure coolant injection, core spray, and isolation condenser systems remain operable during the 7-day LCO or the plant had to be shut down. The licensee made an ENS notification within 28 minutes and a followup call after the amplifier on the HPCI flow transmitter was fixed and the HPCI returned to operability.

This single failure of the single train BWR system is reportable under §50.72(b)(2)(iii)(B and D) and §50.73 (a)(2)(v)(B and D) because the system was unable to perform its safety function to remove residual heat or mitigate the consequences of an accident. It is reportable despite other systems being available that could have performed the safety function. The timeliness of reporting was appropriate.

(3) Single Failure Prevents Radioactive Release Control in Non-Safety-Related System (11)

During a liquid radwaste release, a discharge monitor alarmed, sending a signal to close the discharge valve. The valve closed and reopened without the operators being aware of it. The operators manually shut the valve to secure the release 5 minutes later. The tank was resampled and was found to still be within limits. The licensee made an ENS notification 24 hours later. No physical problems were found with the monitor or valve. The alarm was attributed to high background radiation level in the monitor area. A caution was added to an abnormal operating procedure warning that the valve will reopen after being reset, if the monitor alarm condition cleared. The licensee submitted an LER within 30 days.

An ENS notification is required because the failure of the valve to remain closed demonstrated a condition for an uncontrolled release of radioactive materials. This is reportable even though the system is not safety related because it performs the safety function of controlling radioactive materials releases. However, the ENS notification should have been made within 4 hours of discovery. The LER is required.

(4) Potential Common-Mode Failure

Unit 1 was at full power when it was determined that a rupture of the house heating steam system piping located in the switchgear and the mechanical equipment rooms could create a harsh environment for safety-related equipment in those areas. The licensee removed the house heating system from service the day this problem was found. Eleven days

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(12) See Comment (6) of Page 92.

after discovery, a reportability evaluation determined that there was an incorrect conclusion drawn during a high-energy line break (HELB) study conducted in 1973, and the licensee submitted an ENS notification for Unit 1. The heating system piping was modified to eliminate the potential for pipe ruptures in these areas and other areas containing safety-related equipment were evaluated for similar problems.

Two days after discovery, Unit 2 was notified to check for a similar problem while in cold shutdown and immediately isolated its house heating system also. Unit 2 submitted an ENS notification 14 days after being notified of the problem and taking compensatory measures.

These events are reportable under §50.72(b)(2)(iii)(A -D) and §50.73(a)(2)(v) because this condition alone could have prevented the fulfillment of all four functions listed in the criteria. They are reportable even though the safety functions were not called upon or needed at the time of discovery, some affected systems were not required to be operable at the time of discovery, the problem was in a non-safety-related system, and the condition was corrected before actual failure occurred.

Although the licensee took immediate compensatory measures, the ENS notifications were made 11 and 14 days after discovery. The licensee indicated event times on the basis of engineering evaluations rather than the time of discovery of the condition as discussed in Section 4. Section 50.72 requires an ENS notification within 4 hours of discovery. This did not meet the intent of the 4-hour 50.72 limit. The LER was submitted in a timely fashion.

(5) ~~Multiple Independent Failures~~

~~The licensee of a two-unit plant determined that an event that occurred 3 months earlier could have potentially prevented the fulfillment of the safety functions of several systems. One unit was in power operation while the other was in refueling. Two "B" train emergency service water (ESW) valves in both units had inadvertently been left closed after a surveillance test, isolating both "B" ESW pumps from their supply headers, which cool the "B" emergency diesel generator. Eleven days later, the emergency cooling water pump (a backup to the ESW) and an "A" train emergency diesel generator were removed from service for maintenance. For 2 days no emergency cooling water was automatically available for the safeguards coolers in the event of a loss of offsite power because the procedures for equipment restoration were inadequate. The licensee recognized the situation and opened the "B" ESW~~ (12)

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(12) See Comment (6) of Page 92.

(13) This example Should be deleted. The event would be more appropriately reported as an Emergency Notification. In this case, the requirements for emergency onsite power <u>during shutdown</u> should be stated.

The one emergency diesel was removed from service in accordance with the Technical Specifications. A single failure then resulted in the second diesel becoming inoperable. This condition must have been considered in the original design and licensing of the facility. Ongoing NRC and industry efforts regarding "safety system functions" and "the design basis of the plant" while shutdown may provide clarification of requirements in this area that would impact the determination of reporting of this nature.

Also refer to Comment (6) of Page 92.

pump header valves. After engineering personnel determined it was reportable 9 months later, an ENS notification was made and an LER submitted. (12)

This event is reportable under §50.72(b)(2)(iii)(A, B and D) and §50.73(a)(2)(v) and (vii) because both the "A" and "B" trains of emergency power and service water were simultaneously inoperable by different causes at different times. This could have prevented the safety functions to maintain the reactor in a safe shutdown condition, remove residual heat, and mitigate the consequences of an accident. This is reportable even though neither the systems nor their safety functions had been demanded. The 9-month delay in reporting this did not meet the intent of these reporting criteria.

(6) Loss of Onsite Emergency Power by Multiple Failures (13)

During refueling, one emergency diesel generator (EDG) was out of service for maintenance. The second EDG was declared inoperable. Backfeed capability through the main or station auxiliary power transformers was not available. Only one offsite power source was available to one emergency bus. Plant technical specifications required that at least one EDG be available to support the required train of the standby gas treatment system.

If this event was not reported as an emergency class, an ENS notification is required under §50.72(b)(2)(iii)(B), (C), and (D) and an LER under §50.73(a)(2)(v)(B), (C), and (D). The loss of onsite emergency power alone could have prevented the fulfillment of the safety functions of residual heat removal, control of the release of radioactive material, and mitigation of the consequences of an accident, had the one offsite power source been lost.

This event also is reportable under §50.72(b)(2)(i)(B) and §50.73(a)(2)(ii) because the plant was significantly outside its design basis, as indicated by its inability to comply with its technical specifications.

(7) Procedure Error Prevents Reactor Shutdown Function

The unit was in mode 5 (95 °F and 0 psig; before initial criticality) and a post-modification test was in progress on the train A reactor protection system (RPS), when the operator observed that both train A and B source range detectors were disabled. During post-modification testing on train A RPS, instrumentation personnel placed the train B input error inhibit switch in the inhibit position. With both trains' input error inhibit switches in the inhibit position, source range detector voltage was disabled. The

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3.3.5 Airborne or Liquid Effluent Release Exceeding Two Times Appendix B

(1) Clarification. Estimates used as the basis for an ENS notification should be realistic and credible.

Discussion

Although similar to 10 CFR 20.403 and 20.405, these criteria place a lower threshold for reporting events at commercial power reactors because the significance of the breakdown of the licensee's program that allowed such a release is the primary concern, rather than the significance of the effect of the actual release. Reports of events covered by §50.73(a)(2)(viii) are to be made instead of reporting noble gas releases that exceed 10 times the instantaneous release rate without averaging over a period of time, as implied by the requirement of §20.405(a)(1)(v).

For a release that takes less than 1 hour, normalize the release to 1 hour (e.g., if the release lasted 15 minutes, divide by 4). For releases that lasted more than 1 hour, use the highest release for any continuous 60-minute period (i.e., comparable to a moving average).

Table 2 of 10 CFR Part 20, Appendix B, provides releases in terms of the values related to each isotope. The criteria contained in the "Note" to Appendix B are used to determine releases of mixtures of radionuclides. Paragraph 1 of the note provides for summing of the fractional maximum permissible concentration (MPC) values for the radionuclides known to be present in the mixture. Paragraphs 2, 3, and 4 provide concentration limits for cases in which the identity or the concentration of any radionuclide is not known. Paragraph 5 provides for conditions under which a radionuclide may be considered not to be present in a mixture for purposes of these calculations.

The criteria on reportability of radioactivity releases include iodine spike releases.

Annual average meteorological data should be used for determining offsite airborne concentrations of radioactivity to maintain consistency with the technical specifications (TS) for reportability thresholds. Licensees should calculate the actual effects of releases using current meteorological data at the time of release from the onsite meteorological tower.

The location used as the point of release for calculation purposes should be determined using the expanded definition of an unrestricted area as specified in NUREG-0133 ("Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," October 1978) to maintain consistency with the TS.

It often takes a period of time to assess the magnitude of a radioactive release. If ~~preliminary~~ estimates determine that the release has exceeded twice MPC, an ENS notification is required, followed up by a more precise estimate in the LER. If it is (1)

3.3.7 News Release or Other Government Notifications

I. Principal Issues

This section of the guidance appears generally to be consistent with applicable regulatory standards. One issue related to predicting NRC's need to respond to the media was noted.

II. Overview

The comment requests deletion of language which suggests licensees must predict what events or situations will require the NRC to respond to the media.

III. Specific

COMMENTS ON PAGE 108

(1) Parts of the discussion imply that licensee's must report based on a prediction of NRC needs to respond to the media. These type items should be deleted from the discussion.

The following exceptions apply:

(1) Actuations that result from and are part of the preplanned sequence during testing or reactor operation. This implies that the procedural step indicates the specific ESF or RPS actuation that will be generated and control room personnel are aware of the specific signal generation before its occurrence or indication in the control room.

However, if the ESF actuates during the planned operation or test in a way that is not part of the planned procedure, such as at the wrong step, that event is reportable.

(2) Invalid actuations that occur when a system has been properly removed from service if all requirements of plant procedures for removing equipment from service have been met. This would include required clearance documentation, equipment and control board tagging, and properly positioned valves and power supply breakers.

RPS/ESF ~~Component or~~ System Failure (4)

If the actuation involved a ~~component or~~ system failure, in addition to reporting the event under these reporting criteria, it also should be evaluated for reportability under other 10 CFR 50.72 and 50.73 criteria (e.g., as a single failure that prevented the fulfillment of a safety function, a common-mode failure, a degradation of the plant, or an operation prohibited by the technical specifications).

If the actuation involved a component failure that is reportable within the scope of the nuclear plant reliability data system (NPRDS), it should be reported to that system as noted in the Statements of Consideration for 10 CFR 50.73.

~~Anticipated Transients Without Scram (ATWS) System Reporting~~

~~ATWS is defined as an expected operational transient accompanied by a failure of the RPS to shut down the reactor. ATWS accidents are a cause for concern because they could lead to severe core damage and release of radioactivity to the environment. Section 50.62 of 10 CFR requires that ATWS mitigation systems function as a backup for RPS and that they initiate specific ESF system operation, as needed, while minimizing inadvertent scrams or challenges to other safety systems. Therefore, ATWS actuations should be reported under these criteria. The guidance given above for RPS and ESF definitions, reportability, and exceptions, also applies to the reporting of ATWS system automatic, manual, or inadvertent actuations or failures to actuate.~~ (9)

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3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

(5) See Comment (5) of Page 81.

Examples

(1) RPS Actuation

- The licensee was placing the residual heat removal (RHR) system in its shutdown cooling mode while the plant was in hot shutdown. The BWR vessel level decreased for unknown reasons, causing a RPS scram and Group III primary containment isolation signals, as designed. All control rods had been previously inserted and all Group III isolation valves had been manually isolated. The licensee isolated RHR to stop the decrease in reactor vessel level.

  This event is reportable within 4 hours under this criterion because the RPS scram and primary containment isolation signals were valid and the actuations were not part of a planned procedure. The automatic signals were valid because they were generated from the sensor by measurement of an actual physical system parameter that was at its set point. However, this event also is reportable within 1 hour under §50.72(b)(1)(ii) because the primary coolant system was seriously degraded when the water level decreased as a result of unknown reasons. An LER is required under both §50.73(a)(2)(ii) and §50.73(a)(2)(iv).

- With the BWR defueled, an invalid signal actuated the RPS. There was no component operation because the control rod drive system had been removed from service. This event is not reportable because the system had been properly removed from service and the RPS signal was invalid.

- With the control rods fully inserted into the core and the RPS properly removed from service, an invalid signal actuated the RPS, but the closed reactor trip breakers failed to open. Even though this event is not reportable under this criterion, it is reportable under other criteria, for example, §50.72(b)(2)(iii), §50.73(a)(2)(ii) or (a)(2)(v), because fulfillment of a safety function could have been prevented, the plant was seriously degraded, or shutdown of the reactor could have been prevented if the plant had been operating.

(2) BWR Control Rod Block Monitor Actuation

A rod block that was part of the planned startup procedure occurred from the rod block monitor. (~~which is~~ if classified as a portion of the RPS or as an ESF). (5)

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3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

(10) EDG starts will be reportable if licensee considers the EDG as an ESF. Regulatory Guide 1.70 states: "The engineered safety features included in plant design vary." Therefore, the NRC acknowledges the definition of ESF system varies from plant to plant. Redefining ESF via a NUREG contradicts with the licensee FSAR/USAR (i.e., changing the licensing basis with a NUREG). Inclusion of this new ESF definition will significantly confuse and burden plant operators and engineers, since this definition is contrary to their current training.

This event is not reportable because it occurred as a part of a preplanned startup procedure that specified certain rod blocks may occur. However, if it was caused by a significant reactivity anomaly or inadvertent criticality, an ENS notification and LER are required.

(3) Emergency Diesel Generator (EDG) Starts (10)

- The EDG automatically started when a technician inadvertently caused a short circuit that de-energized an essential bus during a calibration. An ENS notification and LER are required because the ESF actuation (EDG auto-start) was not identified at the step in the calibration procedure being used.

- After an automatic EDG start and for unknown reasons, the emergency bus feeder breaker from the EDG did not close when power was lost on the bus. An ENS notification and LER are required because the ESF actuation logic for the EDG start was completed, even though the ESF function was not completed.

- EDG starts from certain anticipatory signals (e.g., loss of offsite startup power sensed on the startup feeder breaker) are not reportable if no credit was taken for the anticipatory EDG start feature in safety analysis, and the EDG did not load onto the vital bus as a result of a subsequent undervoltage condition on the bus (a valid ESF signal).

(4) Reactor Trip and Auxiliary Feedwater (AFW) Actuation

A PWR tripped from 92-percent power, and the AFW system actuated because a steam generator low-low level occurred when a main steam isolation valve (MSIV) closed. All systems operated as designed and the unit stabilized in mode 3 (hot standby). The licensee later determined that a blown fuse caused the MSIV to close. An update ENS notification was made 6 hours after the reactor trip.

An ENS notification is required within 4 hours of the reactor trip or ESF actuation, whichever occurred first. In this case, the licensee made an ENS notification within 1 hour of the reactor trip, which meets the intent and explicit requirements of reporting such events as soon as practical. Both ESF (AFW and MSIV) and RPS actuations occurred and are reportable within the single notification. Regardless of whether any expected ESF actuations are listed in emergency operating procedures, they are to be reported during the ENS notification. Update reporting of the cause of a reactor trip is always encouraged. An LER is required.

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3.3.2 Actuation of an Engineered Safety Feature or the Reactor Protection System

(11) This is contrary to the Statements of Consideration (Page E-5), "However, individual component failures need not be reported pursuant to this paragraph if redundant equipment and the same system was operable and available to perform the required safety function."

Therefore, single equipment actuation alone, may not be reportable under this criteria.

(12) These examples only apply if CRVS and RWCU are considered ESF systems per the licensee's FSAR/USAR definition.

(13) The guidance in Example (8) is inconsistent with the guidance provided by Example (3). In Example (3), an ESF actuation on a non-ESF signal is determined to be not reportable. Refer also to the definitions provided in Comment (3) of Page 81.

(5) Preplanned Manual Scram

During a normal reactor shutdown, the reactor shutdown procedure required that reactor power be reduced to a low power at which point the control rods were to be inserted by a manual reactor scram. The rods were manually scrammed.

This event is not reportable because the manual scram results from and is, by procedure, part of a preplanned sequence of reactor operation. However, if conditions develop during the process of shutting down that require an unplanned reactor scram, the RPS actuation (whether manually or automatically produced) is reportable via ENS notification and LER.

~~(6) Actuation of Wrong Component During Testing~~

During surveillance testing of the MSIVs, an operator incorrectly closed MSIV "D" when the procedure specified closing MSIV "C." (11)

This event is reportable because the ESF actuation that occurred (closing of MSIV "D") was not specified in the step of the procedure being used.

(7) Control Room Ventilation System (CRVS) Isolation (12)

While the CRVS was in service with no testing or maintenance in progress, a voltage transient caused spiking of a radiation monitor resulting in isolation of the CRVS, as designed.

This event is reportable under this criterion because neither exception (1) nor (2) above apply. An ENS notification and LER are required.[2]

(8) Reactor Water Cleanup (RWCU) Isolations (12)

- The RWCU isolation valves closed in response to the high water temperature, as designed. ~~Even though the~~ RWCU system was designed with high water temperature as a non-protective (non-ESF) process parameter to prevent damage to the resin beds from high temperature, ~~this~~ Therefore, this event is not reportable as an ESF actuation.[2] (13)
- An RWCU primary containment isolation (ESF actuation) occurred on pressurization between the RWCU suction

[2] The requirements for continued reportability of these types of ESF actuations are being reconsidered separately under rulemaking.

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3.3.3 Event or Condition That Alone Could Prevent Shutdown of the Reactor, Removal of Residual Heat, Control of the Release of Radioactive Material, or Mitigation of the Consequences of an Accident

I. Principal Issues

The draft guidance appears to go beyond the language and intent of the regulation and original staff guidance regarding:

(1) The use of "hypothetical events" of "Potential conditions" broadens the scope of the regulation.

(2) Reporting of multiple independent failures is not clear and conflicts with the regulation.

(3) Inclusion of RCIC as a single train safety system.

II. Overview

The comments are intended to resolve the issues identified above.

III. Specific

Refer to the mark-ups in the following pages.

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3.3.3 Event or Condition That Alone Could Prevent Shutdown of the Reactor, Removal of Residual Heat, Control of the Release of Radioactive Material, or Mitigation of the Consequences of an Accident

(1) Removal of a system from service for maintenance or testing is not a condition that requires reporting under this criterion.

(2) Clarification/editorial. The proposed terms are consistent with the remainder of the draft document.

Discussion

The intent of these criteria is to require reporting of events or conditions that could have prevented systems from performing their safety functions (actually or potentially) regardless of when the failures were discovered, whether the system was needed at the time, or whether an alternate system or means was operable to perform the safety function. Such reports permit the NRC to ensure plants have the capability to mitigate accidents described in their FSAR and to identify and ensure correction of previously unrecognized failure modes and effects of important safety systems. To obtain the information needed, this section has combined previous NRC guidelines and responses to very specific licensee concerns into a more generalized set of reportability guidelines and exemptions for this reporting requirement and provides definitions of key phrases.

The term "event or condition" refers to the circumstance or reason that a system or structure actually failed to perform its safety function, or could have been prevented from performing its safety function. The event or condition could result from one or more problems, failures, errors, or circumstances. These typically could include equipment failures; inadequate maintenance; procedure deficiencies or violations; personnel errors; design, analysis, equipment qualification, or construction deficiencies; ~~a system out-of-service for maintenance or testing;~~ or unknown reasons at the time. (1)

The phrase "alone could have prevented" means the event or condition was, or would be, sufficient by itself to prevent the performance of the safety function(s) of a system or structure (i.e., no additional single failure is assumed or needed to prevent the function).

If a postulated accident scenario ~~hypothetical event~~ requiring performance ~~of~~ condition a system's safety function, involving the identified ~~problem~~, is postulated and it is determined that the safety function of the system or structure will fail, it is reportable under these criteria. (2)

The term "safety function" refers to the operation of a system or structure necessary to perform any of the four functions (A through D) listed in these reporting criteria during any plant mode or accident situation as described or relied on in the plant safety analysis.

For a system to perform its safety function, it and its associated subsystems must be operable. The Standard Technical Specifications define operable as follows:

> A system. . . shall be OPERABLE or have OPERABILITY when it is capable of performing its specified

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3.3.3 Event or Condition That Alone Could Prevent Shutdown of the Reactor, Removal of Residual Heat, Control of the Release of Radioactive Material, or Mitigation of the Consequences of an Accident

(3) This paragraph states that the loss of offsite power is reportable as an event or condition that alone could prevent the fulfillment of a safety function. This is not the case. Nuclear plants are designed and built to accommodate the loss of all offsite power. Emergency onsite power is available to power all required emergency loads. The paragraph needs to be modified to state that loss of onsite emergency power is reportable under 10CFR50.72(b)(2)(iii) [10CFR50.73(a)(2)(v)] and 10CFR50.72(b)(1)(ii) [10CFR50.73(a)(2)(ii)].

Loss of offsite power may also be reportable under emergency plan but is not reportable under either paragraph above.

(4) RCIC is generally not an ECCS and in that case is not taken credit for in the BWR accident analysis. Because of system capacity differences, a BWR RCIC system can not fulfill the safety function of HPCI, but the HPCI system can fulfill the function of RCIC. In this sense, RCIC is not a single-train safety system. RCIC inoperability does not fall into this reporting requirement.

functions, and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system. . . to perform its function(s) are also capable of performing their related support function(s).

A safety system must operate long enough to complete its intended function as defined in the FSAR. Reasonable operator actions to correct minor problems may be considered; however, heroic actions and unreasonable insightful diagnoses, particularly during stressful situations, should not be assumed. In addition, in the FSAR, analysis is performed on how long the system/component is expected to operate without operator action.

For example, ~~both offsite electrical power (transmission lines)~~ and onsite emergency power (usually diesel generators) are normally required to be available to support safety system functions. If ~~either offsite power or~~ onsite emergency power is unavailable to the plant (i.e., completely lost), it is reportable regardless of whether other systems were available that could perform the safety function. The Statements of Consideration contain other examples. Such events are of interest to staff for ongoing safety reviews. (3)

Any time a system did not or could not have performed its safety function because of a single failure, common-mode failure, or combination of independent failures it is reportable under these criteria. These reporting requirements apply to the system level, rather than the train or component level.

- Single Failure

  These reporting criteria are not meant to require reporting of a single, independent (i.e., random) component failure that makes only one functionally redundant train inoperative.

  There are a limited number of single-train systems that perform safety functions, such as the BWR high-pressure coolant injection ~~and reactor core isolation cooling~~ system~~s~~. For such systems, loss of the single train would prevent the fulfillment of the safety function of that system and, therefore, is reportable even though the plant technical specifications may allow such a condition to exist for a specified limited length of time. (4)

- Common-Mode Failure

  Several conditions are reportable under these criteria:

3.3.7 News Release or Other Government Notifications

§50.72(b)(2)(vi)	10 CFR 50.73
Licensees shall report: "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."	[No corresponding Part 50.73 requirement.]

If not reported under §50.72(a) or (b)(1), licensees are required to notify the NRC via the ENS as soon as practical and in all cases within 4 hours of the event or the decision to prepare a news release or notify other government agencies, as explained below.

<u>Discussion</u>

The purpose of this criterion is to ensure the NRC is made aware of issues that will cause heightened public or government concern related to the radiological health and safety of the public or on-site personnel or protection of the environment.

Licensees typically issue press releases or notify local, county, State or Federal agencies on a wide range of topics that are of interest to the general public. The NRC Operations Center does not need to be made aware of every press release made by a licensee. The following clarifications are intended to set a reporting threshold that ensures necessary reporting, while minimizing unnecessary reporting. When in doubt, licensees are encouraged to contact the NRC Operations Center. Licensees may also find it prudent to keep the NRC resident inspector informed of further developments in situations reported under this criteria.

When events require the NRC to respond because of media, public, or other government agency attention, they are reportable under this criteria, such as: (1)

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3.4.1 Worsening Plant Conditions After ENS Notification

(1) The example is deleted. Referencing another section of the document in this manner makes the document difficult to utilize.

The NRC Operations Center requested and received hourly followup reports from the licensee during the plant shutdown. Two hours into the shutdown, with the reactor at low power, an ESF feedwater isolation occurred as a result of a steam generator high-high level, which closed all four feedwater isolation valves. The licensee had to manually start auxiliary feedwater to cool the steam generators. Despite hourly plant status updates and questioning of the licensee for additional problems, the NRC Operations Officer was not informed of the feedwater isolation or auxiliary feedwater manual start until a 4-hour §50.72(b)(2)(ii) ENS notification was separately called in 3 hours after they occurred. The Unusual Event was terminated 20 hours after its declaration when the Train C essential chiller was declared operable.

The feedwater ESF actuation and the difficulty with auxiliary feedwater initiation were immediately reportable via the ENS when they occurred because the plant was in a declared emergency and an unplanned ESF actuation represented a further degradation of the level of plant safety. Licensees are not relieved of the responsibility of immediately reporting further plant safety degradation regardless of whether they are providing periodic followup event reports at the request of the NRC.

~~(2) Hurricane~~

(1)

~~[See Example (3) in Section 3.2.5 of this report.]~~

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(1) This is too low a threshold. The condition should be evaluated against the reporting criteria. Just the fact that a LCO is entered does not make a condition reportable.

Reasonable deadlines have been placed on the non-emergency reporting requirements to ensure that licensees report events before a maximum time limit, without hindering the licensee's ability to respond to an emergency. Licensees are encouraged to make these notifications as soon as sufficient information is available.

To meet 10 CFR 50.72, ENS reportability determinations of design problems should be made within the time limits of 10 CFR 50.72 on the basis of engineering judgment, instead of engineering reviews taking many months. ~~If the licensee initially decides that a design or operational problem is significant enough to enter a technical specification limiting condition for operation or to take other compensatory measures, it is immediately reportable on that evidence alone.~~ This, however, is not a prerequisite for reportability. (1)

Once a reportable event occurs or the condition is discovered, ENS and LER reporting cannot be avoided regardless of whether corrective actions or compensatory measures are instituted. Such actions or measures should not be delayed by a concern over the reportability of the event.

The NRC recognizes that in the short timeframe of the event and ENS notification, a licensee may not have time for a complete analysis of the cause, effect, and compensatory measures. It is more important that the NRC be quickly made aware of the situation than it is for the licensee to answer every NRC question at the time of the initial ENS notification. Update ENS notifications should be made to provide additional information or analysis as it becomes available.

When reportable events meet several 10 CFR 50.72 reporting criteria, the most immediate reporting requirement takes precedence. A single, all-encompassing ENS notification made under the most immediate reporting requirement also meets the reporting requirements of other applicable criteria of 10 CFR 50.72, 20.205, 20.403, 50.36, and 73.71. Any known applicable criteria should be noted during the ENS notification.

4.2.2 Reporting Completeness

The 10 CFR 50.72 rule was intended to trigger a technical discussion between the licensee and the NRC about a safety significant event and its effect on plant safety. There was no intent to limit that discussion to the precise bounds of 10 CFR 50.72 phrases to the exclusion of additional information licensees may have relating the event to overall plant safety. For example, events may be caused by non-safety-related equipment failures, or non-safety-related components may be used to mitigate the consequences of an event. A plant transient may have been affected by plant conditions external to the event, or

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(2) The licensee will provide the available information.

factually and accurately, to permit an accurate understanding of the event by the HOO.

a plant transient may be minor, but the same failure may affect another plant differently, and that may be the more important issue in the ENS notification.

Once an event becomes reportable, it should be described ~~completely to the HOO.~~ For example, it may be worthwhile to relate malfunctions by contrasting them to the proper functioning of the system, even when that would not have been reportable by itself. To the extent information is available at the time of the call, ~~all generic and plant-specific safety-significant details should be revealed.~~ These details may involve other safety-related or non-safety-related equipment or systems that are not directly involved with the event but may be related to the event's overall safety significance to the plant or may involve generic implications for other plants. (2) (2)

relevant details should be provided.

Sometimes information is not available to completely describe an event. It is important for the NRC to know this, and updates should be made as additional information becomes available. The HOO is trained to evoke the details of the event and its effect on the plant by addressing topics such as those noted in Section 4.3 of this report.

The ENS notification is the basis for short-term action, followup, and events analysis decisions by the NRC staff. The ENS notification needs to be as accurate and complete as possible for the proper lines of inquiry to be pursued in the event analysis to make the correct decisions.

4.2.3 Voluntary Notifications

Licensees may make voluntary or courtesy ENS notifications about events or conditions the NRC may be interested in. The NRC responds to any voluntary notification of an event or condition, as its safety significance warrants, regardless of the licensee's classification of the reporting requirement. If it is determined later that the event is reportable, the licensee can change the ENS notification to a required notification under the appropriate 10 CFR 50.72 reporting criterion.

A voluntary report may be made about an issue for which the licensee has found the public, media, local or State government, or another Federal agency perceives a safety problem. This may be especially useful in the case of an incorrect perception, if the licensee does not plan to issue a formal press release and no specific 10 CFR 50.72 criterion is applicable. The public, other government agencies, and Congress depend on the NRC to independently provide a proper perspective.

Some voluntary notifications have been outside the threshold of the reporting requirements of 10 CFR 50.72. The NRC encourages such voluntary notifications because they may enhance the safety

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(3) This paragraph is judgmental and could be perceived as adversarial.

(4) This paragraph confuses reporting requirements under 10CFR50.72(a) vs. 50.72(b).

of the nuclear industry by alerting the NRC and thereby other licensees to a safety significant or potentially generic problem.

However, some licensees have incorrectly reported significant events as voluntary notifications because of very narrow interpretations in their reporting procedures or expired ENS notification time limits. Voluntary reporting cannot be used to avoid NRC enforcement. Following the guidelines in this NUREG should minimize such problems. Also see Section 2.9. (3)

There may be a legitimate variance in declaring emergencies among licensees as a result of differences in licensees' emergency operating procedures and the criteria used for declaring emergencies. Nevertheless, such events are reportable under 10 CFR 50.72(b). (4)

If there is a question about the reportability of an event or condition, the Commission's policy is that licensees should make the report. If it is determined later that the event was reportable, the licensee will have performed the required notification and the NRC will have had an opportunity to act on the event, as necessary. If it is determined later that the event was not reportable, the report can be changed to a voluntary report or retracted.

4.2.4 ENS Notification Retraction

If a licensee makes a 10 CFR 50.72 ENS notification and later determines that the event or condition was not reportable, the licensee should call the NRC Operations Center on the ENS telephone to retract the notification and explain the rationale for that decision. Licensees should not retract ENS notifications via letters to the NRC regional or headquarters staff.

The ENS event notification report will not be deleted from the NRC data base, but will be marked as "retracted" and the explanation for the retraction will be given.

4.2.5 ENS Event Notification Worksheet (NRC Form 361)

The ENS Event Notification Worksheet (NRC Form 361) is used by the HOO during ENS notifications to obtain adequate information for the evaluation of significant events reported to the NRC Operations Center. The worksheet provides the usual order of questions and discussion for easier communication and its use often enables a licensee to prepare answers for a more clear and complete notification. A clear ENS notification helps the HOO to understand the safety significance of the event. A copy of this form is provided at the end of this section.

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(5) Make minor updates, including addressing 10CFR50.72(b)(2)(vii).

NRC FORM 361
(3-90)

U.S. NUCLEAR REGULATORY COMMISSION
OPERATIONS CENTER

EVENT NOTIFICATION WORKSHEET

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	CALL BACK # - ENS _____ or ( ) _____ - _____

EVENT TIME & ZONE	EVENT DATE / /
POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATIONS	
	GENERAL EMERGENCY
	SITE AREA EMERGENCY
	ALERT
	UNUSUAL EVENT
	50.72 NON-EMERGENCY (see next columns)
	PHYSICAL SECURITY (73.71)
	TRANSPORTATION
	MATERIAL/EXPOSURE
	FITNESS FOR DUTY
	OTHER

1-Hr Non-Emergency 10 CFR 50.72(b)(1)	
(i)(A)	TS Required S/D
(i)(B)	TS Deviation
(ii)	Degraded Condition
(iii)(A)	Unanalyzed Condition
(iii)(B)	Outside Design Basis
(iii)(C)	Not Covered by OPs/EPs
(iii)	Earthquake
(iii)	Flood
(iii)	Hurricane
(iii)	Ice/Hail
(iii)	Lightning
(iii)	Tornado
(iii)	Oth Natural Phenomenon
(iv)	ECCS Discharge to RCS
(v)	Lost ENS
(v)	Lost Other Assessment/Comms

(v)	Emergency Siren INOP
(vi)	Fire
(vi)	Toxic Gas
(vi)	Rad Release
(vi)	Oth Hampering Safe Op.

4-Hr Non-Emergency 10 CFR 50.72(b)(2)	
(i)	Degrade While S/D
(ii)	RPS Actuation (scram)
(ii)	ESF Actuation
(iii)(A)	Safe S/D Capability
(iii)(B)	RHR Capability
(iii)(C)	Control of Rad Release
(iii)(D)	Accident Mitigation
(iv)(A)	Air Release > 2X App B
(iv)(B)	Liq Release > 2X App B
(v)	Offsite Medical
(vi)	Offsite Notification

(5)

DESCRIPTION

Include Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE
NRC RESIDENT			
STATE(s)			
LOCAL			
OTHER GOV AGENCIES			
MEDIA/PRESS RELEASE			

ANYTHING UNUSUAL OR NOT UNDERSTOOD?		YES (Explain above)	NO
DID ALL SYSTEMS FUNCTION AS REQUIRED?		YES	NO (Explain above)
MODE OF OPERATION UNTIL CORRECTED:	ESTIMATED RESTART DATE:		ADDITIONAL INFO ON BACK? ☐ YES ☐ NO

NRC Form 361 (3-90)

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(6) The bullets for what to provide to the HOO are ordered differently than on Form 361.

logistics support. The NRC keeps other Federal agencies informed of the status of an incident and provides information to the media. In addition, the NRC assesses and, if necessary, confirms the appropriateness of actions recommended by the licensee to local and State authorities.

It is the licensee's responsibility to ensure that adequate personnel, knowledgeable about plant conditions and emergency plan implementing procedures, are available on shift to assist the shift supervisor to classify an emergency and activate the emergency plan, including making appropriate notifications, without interfering with plant operation.

When 10 CFR 50.72 was published, the NRC made clear its intent in the Statements of Consideration that notifications on the ENS to the NRC Operations Center should be made by those knowledgeable of the event. If the description of an emergency is to be sufficiently accurate and timely to meet the intent of the NRC's regulations, the personnel responsible for notification must be properly trained and sufficiently knowledgeable of the event to report it correctly. The NRC did not intend that notifications made pursuant to 10 CFR 50.72 would be made by those who did not understand the event that they are reporting.

Because time is important in many emergency class events, licensees should first provide the following information so that the HOO can quickly recognize the seriousness of the situation: (6)

- the plant, unit, emergency class (using the term "Unusual Event," "Alert," "Site Area Emergency," or "General Emergency"), and time of declaration
- the caller's name, title
- a brief event summary/plant status

During Unusual Events the HOO

- will accept the information and then brief the NRC emergency officer (EO), NRC regional duty officer (RDO), and Federal Emergency Management Agency
- may recontact the licensee to
  - acquire further information
  - establish a conference call with NRC management
  - establish periodic updating for more information

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(7) Wherever lists are provided for what "typically" may be asked of the licensee, the NRC needs to remain aware that the usual source of information, the Operations Shift Supervisor, will usually not have detailed information immediately, within one hour, or even within 4 hours. It should be stated that these lists are not, and will never become, requirements.

(8) The statement is clear without this phrase. The meaning of "reactor safety team" should be expanded and clarified.

During Alerts or above the HOO will

- usually request the licensee to maintain open, continuous ENS communications with the NRC Operations Center and to immediately call back if disconnected

- immediately establish a conference call among the NRC EO, RDO, other NRC managers, as necessary, and the licensee to discuss the event

The licensee typically may be asked to discuss, as applicable: (7)

- details of the event, cause, time, and its safety significance, time of emergency declaration

- status of system(s) involved or important to the event

- release rate of radionuclides

- reactor coolant system (RCS), emergency core cooling systems (ECCS), and other plant system status

- non-safety-related system problems that may affect normal plant operations or method of shutdown/cooldown

- basis for the declaration of the emergency and criteria to be met for its termination

- human performance issues involved to understand the cause or progress of an event (see Section 2.8 of this report)

- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)

Events that occur during an emergency class event that are reportable by themselves should be reported via the appropriate communicator, ~~(i.e., ENS, reactor safety team, or health physics)~~. (8)

4.3.2 One-Hour ENS Notifications

ENS reportability evaluations should be concluded and the ENS notification made as soon as practical and in all cases within 1 hour to meet 10 CFR 50.72. The reportability timeclock starts at the time of the event or the discovery of the condition. The Statements of Consideration noted that the 1-hour deadline is necessary if the NRC is to fulfill its responsibilities during and following the most serious events occurring at operating nuclear power plants without interfering with the operator's ability to deal with an accident or transient in the first few critical minutes.

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(7) See Comment (7) of Page 137.

§50.72(b)(1)(i)(A)

(See Section 3.2.1, "Plant Shutdown Required by Technical Specifications ")

The licensees typically may be asked to discuss, as applicable: (7)

- details and safety significance of the event
- method of discovery of problem
- the technical specifications (TS) involved and their requirements (Given the variety in TS among plants, the licensees may be asked for the specification verbatim, to ensure an accurate understanding of the situation.)
- availability of ECCS and engineered safety features (ESF) systems
- when power level reduction was initiated or when it will be initiated, at what rate, and when the licensee expects to be in the TS required mode
- licensee expectations to have the problem corrected before the plant is required to be in the shutdown mode
- human performance issues involved in the event (see Section 2.8 of this report)
- reactor vendor involvement in the problem resolution, if any
- emergency declaration made or expected to be made
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)

§50.72(b)(1)(i)(B)

(See Section 3.2.3, "Technical Specification Deviation per §50.54(x)") (7)

The licensees typically may be asked to discuss, as applicable:

- details of the situation, plant status, safety significance of the deviation, and any compensatory measures taken
- reason for deviation from the TS or license

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(7) See Comment (7) of Page 137.

(9) As written, it appears to imply that an unanalyzed condition is also an unreviewed safety question.

- the applicability of the emergency operating procedures (EOPs)
- the position of the person who approved taking §50.54(x) action
- NRC personnel involved in the decision, if any

§50.72(b)(1)(ii)

(See Section 3.2.4, "Operating Plant in a Degraded or Unanalyzed Condition")

Given the overlap in these reporting criteria, it is not unusual for an event to be reportable under more than one criterion, (A), (B), or (C). The licensee typically may be asked to discuss, as applicable: (7)

- what system is seriously degraded, in an unanalyzed condition, outside the plant's design basis, or not covered by the plant's operating and emergency procedures; why; when discovered; means of discovery; and details of the problem
- alternate systems and actions available with appropriate procedures to perform the same or similar safety function
- how the problem affects current plant conditions or technical specification requirements; whether mode changes are necessary and when
- compensatory measures taken, corrective actions that are under way, and an estimate for recovery time
- reactor temperature, pressure, mode, and power level
- for degraded plant conditions - design margins, engineering margins of safety, or other conservatisms reduced
- for an unanalyzed condition - the basis for determining that the condition ~~involves an unreviewed safety question~~ is an unanalyzed condition (9)
- for a condition outside the plant's design basis - the design parameters that are being exceeded
- results of analysis performed on the reportable condition
- if analysis is currently being performed, the estimated time the results will be available

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(7) See Comment (7) of Page 137.

(10) Current wording on JCO is inconsistent with other NRC guidance, specifically NRC Generic Letter 91-18.

- ~~whether a justification for continued operation (JCO) is necessary or being prepared~~ (10)
  if known, whether a request for temporary waiver of compliance is anticipated

§50.72(b)(1)(iii)

(See Section 3.2.5, "Natural Phenomenon or Condition Threatening Plant Safety")

The HOO will attempt to obtain as complete a description as possible of the event, the licensee's precautions, and the anticipated effect on the safety of the plant. The licensee may typically be asked to discuss, as applicable: (7)

Tornado

- warning/watch received, tornado sighted, and touchdown location
- precautions taken
- location of touchdown in protected area, damage incurred
- potential (unmeasured) radioactive releases
- plant equipment affected, ECCS/ESF availability
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)
- plant system walkdown status
- personnel injuries, contaminations, hospitalizations

Earthquake

- emergency declaration and time of declaration (immediately update NRC on termination)
- seismic levels measured; whether tremors physically were felt on site
- equipment affected or damaged
- plant status, ECCS/ESF availability, and power level plans
- status of system walkdowns (immediately update NRC when complete or significant damage found)

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(7) See Comment (7) of Page 137.

- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)

- aftershocks registered on plant seismic instrumentation or additional damage discovered (required updates per 50.72(c)(1) and (2))

The HOO is required to contact plants within 50 miles of an earthquake that registers 4.5 or more on the Richter scale as soon as informed (e.g., by FEMA, licensee ENS notification or news media reports) to verify plant safety.

Flood

- magnitude of expected event in safety perspective: water levels (e.g., normal and expected flood level), time and duration, equipment, systems, and buildings expected to be affected

- plant status and power level plans

- emergency precautions taken (e.g., sandbagging, and diesel generator fuel oil supply)

- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)

- periodic updates

§50.72(b)(1)(iv)

(See Section 3.2.6, "ECCS Discharge into the Reactor Coolant System")

ECCS injection into the reactor vessel as the result of a valid signal is an ESF actuation and reportable under this criterion. ECCS injections as a result of invalid signals are reportable under §50.72(b)(2)(ii). Section 4.3.3, regarding §50.72(b)(2)(ii), of this report notes typical issues that licensees may be asked to discuss concerning an ESF actuation. In addition, licensees typically may be asked to discuss, as appropriate: (7)

- RCS leakage rate

- amount, source, length of time, and boron concentration of fluid injected into the reactor vessel

- reactivity effects

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(7) See Comment (7) of Page 137.

(11) Recommend deletion of the last three questions because they really require a more in-depth analysis. They also will distract the operator during a critical period.

(12) Additional operator burden and potential enforcement action. May not know if an ESF actuation occurred. Concerned with increased burden that is contrary to the intent of the ENS (i.e., notify the NRC that a situation occurred so that they could respond, vice data collection). Recommend deletion.

- RCS initial/current temperatures/pressures and TS limits
- specific ECCS components injecting
- cause of ECCS actuation or prevention of ECCS actuation
- basis for continued ~~operation~~
- human ~~performance~~ issues involved in the event ~~(see Section 2.8~~ of this report)

(11)

~~All applicable reporting requirements, including §50.72(b)(1)(iv) and §50.72(b)(2)(ii), should be noted during the ENS notification.~~ (12)

§50.72(b)(1)(v)

(See Section 3.2.7, "Loss of Emergency Assessment, Response or Communications")

ENS operability is important because in an emergency it may be the only telephone available that a licensee can use to contact the NRC. The licensee typically may be asked to discuss, as applicable: (7)

- details of the problem
- method of discovery
- operability of alternative systems of communication
- projected time of return to operability

§50.72(b)(1)(vi)

(See Section 3.2.8, "Plant Safety Threat from Fire, Toxic Gas, or Radiation")

The licensee typically may be asked to discuss, as applicable: (7)

<u>Fire</u>

- status of fire - out of control, under control, or extinguished
- location, magnitude, and duration of fire

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(7) See Comment (7) of Page 137.

(13) As written, it appears to imply that an unanalyzed condition is also an unreviewed safety question.

- human performance involved in the event (see Section 2.8 of this report)
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)
- press release information
- updates on progress of the event

4.3.3 Four-Hour ENS Notifications

ENS reportability evaluations should be concluded and the ENS notification made as soon as practical and in all cases within 4 hours to meet 10 CFR 50.72. The reportability timeclock starts at the time of the event or the discovery of the condition.

§50.72(b)(2)(i)

(See Section 3.3.1, "Shutdown Plant Found in Degraded or Unanalyzed Condition")

The licensee typically may be asked to discuss, as applicable: (7)

- what system is seriously degraded or in an unanalyzed condition, why, when and how discovered, and details of the problem
- alternate systems and actions available to perform the same or similar safety function
- how the problem affects current plant conditions or TS requirements, whether mode changes are necessary and when
- compensatory measures taken, corrective actions that are under way, and an estimate for recovery time
- reactor temperature, pressure, mode
- for degraded plant conditions - design margins, engineering margins of safety, or other conservatisms reduced
- for an unanalyzed condition - the basis for determining that the condition ~~involves an unreviewed safety question~~ is an unanalyzed condition (13)

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(7) See Comment (7) of Page 137.

(14) The setpoints will be provided in the LER.

(15) Already addressed in Section 3.2.8.

(See Section 3.3.2, "Actuation of an Engineered Safety Feature or the Reactor Protection System")

The NRC must independently assess the condition of the reactor after an ESF or reactor protection system (RPS) actuation to determine if it is in a safe condition and expected to remain so. The HOO needs to understand the safety significance of any transient the reactor went through after a necessary or unnecessary ESF or RPS actuation in order to brief NRC management or initiate NRC actions. Therefore, licensees may typically be asked to discuss the following, as applicable: (7)

- specific RPS/ESF actuations, ~~set points,~~ and anomalies (14)
- cause of RPS/ESF actuations
- ~~radiation releases (see Section 4.3.2, regarding §50.72(b)(1)(vi), in this report)~~ (15)
- control rod position after reactor trip and anomalies, such as stuck rods and dropped bank
- boron poison additions
- reactor pressure, temperature, level, and leakage conditions
- reactor cooling method and cooldown rate limits
- availability status of ESF/ECCS systems and specific causes of any unavailable system or component
- systems included in any group containment isolation
- operation and problems associated with reclosing of primary and secondary power-operated relief valves, relief and code safety valves, or turbine bypass (condenser dump) valves
- expected ESF actuations after a reactor trip
- emergency (or auxiliary) feedwater system operation
- feedwater isolation
- turbine runbacks

Licensees should not delay making the ENS notification because of lack of information in any specific area noted above.

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(7) See Comment (7) of Page 137.

(16) The person making the phone call generally does not have the authority to make commitments for the utility.

(See Section 3.3.3, "Event or Condition That Alone Could Prevent Shutdown of the Reactor, Removal of Residual Heat, Control of the Release of Radioactive Material, or Mitigation of the Consequences of an Accident")

Given the overlap in these system safety functions, it is not unusual for an event to be reportable under more than one of these criterion.

The licensee typically may be asked to discuss, as applicable: (7)

- system that is unable to perform its safety function, cause and details of problem, and when and how discovered
- alternate systems and actions available to perform the same safety function
- effect of the problem on current plant conditions and TS requirements, whether mode changes are necessary and when
- compensatory measures that have been employed and repairs that are under way, estimated time for recovery
- reactor temperature, pressure, mode, and power level
- radioactive releases (see Section 4.3.2, regarding §50.72(b)(1)(vi), in this report)

For loss of RHR with the plant in hot shutdown, cold shutdown, or refueling

- length of plant shutdown and its heatup rate
- percent of fuel in the core and percentage of new versus old fuel
- whether containment integrity has been established, whether it is needed, and the length of time it will take to establish it
- ~~commitment to rectify problem before startup~~ (16)
- water inventory in the core, whether the reactor head is in place, whether RCS integrity is established
- where the licensee is measuring RCS temperature (i.e., residual heat removal (RHR), reactor core, or RCS loop)

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(7) See Comment (7) of Page 137.

§50.72(b)(2)(iv)

(See Section 3.3.5, "Airborne or Liquid Release Exceeding Two Times MPC")

The information needed concerning this criteria can be found on the second page of ENS Event Notification Worksheet (NRC Form 361 in Section 4.2.5 of this report). The licensee typically may be asked to discuss, as applicable: (7)

- radionuclide(s) released, measured in curies
- plant and site boundary dose rate (millirem/hour), total dose, percent of TS limits or percent of MPC (the HOO is trained to ask for meaningful units; a count per minute value alone is not meaningful without detector efficiency, type of radionuclide, flow rates, etc.)
- how was gaseous or liquid release monitored
- where, when, how, and why the release occurred
- duration of release
- room or building evacuations
- use of self-contained breathing apparatus (SCBA)
- contaminated or injured personnel
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)
- meteorological data such as wind direction and speed and Pasquill stability class, if release was substantial

§50.72(b)(2)(v)

(See Section 3.3.6, "Contaminated Person Requiring Transport to Offsite Medical Facility")

The licensee typically may be asked to discuss, as applicable: (7)

- name of injured person, job, employer, and hospital
- type and extent of injuries and contamination
- health physics personnel coverage in ambulance and hospital

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(7) See Comment (7) of Page 137.

(17) The update per 50.72(c)(2)(ii) is reportable under that section, and should not be an example under 50.72(b)(2)(v).

- when, where, and how accident occurred
- human performance involved in the event (see Section 2.8 of this report)
- effect of compensatory measures taken on safety of the nuclear power plant (e.g. de-energization of a bus or where a breaker failure caused the injury)
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)
- press release information
- ~~immediate update ENS notification per 50.72(c)(2)(ii)~~
  - ~~results of health physics surveys performed on the individual, in the ambulance and hospital~~
  - ~~the individual's prognosis (if available)~~

(17)

§50.72(b)(2)(vi)

(See Section 3.3.7, "News Release or Other Government Notifications")

Press Release

The HOO will attempt to ascertain the type and extent of news media coverage experienced or expected by the licensee. The licensee typically may be asked to discuss, as applicable: (7)

- details of the press release and issuance time (fax copy of press release, if available)
- amount and type of local and/or national news media interest shown or expected

Other Government Notifications

The licensee typically may be asked to discuss, as applicable: (7)

- details of the event as described in other applicable sections
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)

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(7) See Comment (7) of Page 137.

(18) It would not be useful to notify the NRC every time a Technical Specification LCO is entered or exited, nor to provide the NRC immediate updates on every starting or stopping of plant equipment, etc. These bullets could be reworded to more accurately list those conditions representative of adverse affects on plant safety.

§50.72(b)(2)(vii)

(See Section 3.3.8, "Spent Fuel Storage Cask Notifications")

The licensee typically may be asked to discuss, as applicable: (7)

- description, cause and importance to safety of the defect or reduction in effectiveness of the spent fuel storage cask
- current location of spent fuel storage cask
- filtration and monitoring of radioactive release or contamination of adjacent area
- amount of spent fuel and leaking fuel in cask

4.3.4 Followup Notification

50.72(c)(1)(i)

(See Section 3.4.1, "Worsening Plant Conditions After ENS Notification")

For any event reported under 10 CFR 50.72, the licensee shall immediately notify the NRC Operations Center of any change related to the event in progress or an additional event that additionally adversely affected plant safety, regardless of whether the licensee has established continuous or periodic communications with the NRC Operations Center. For example, such changes may include, but not be limited to, the following:

- declaration of emergency class
- another reportable event
- problems maintaining the six critical safety functions of
  - reactivity control
  - reactor core cooling
  - ultimate heat sink
  - reactor integrity
  - containment integrity
  - RCS inventory
- ~~TS limiting conditions for operation (LCO) entered or exited~~ (18)

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(18) See Comment (18) of Page 150.

degradation of

- status of any ECCS or ESF equipment operability, availability, or actuations (18)
- status of any non-safety-related equipment or systems normally used to cool the reactor
- status of any ac or dc onsite or offsite Class 1E or non-Class 1E power supplies
- event-related system or component information requested by the HOO, EO, or RDO on a periodic basis
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)

§50.72(c)(1)(ii)

(See Section 3.4.2, "Change From One Emergency Class to Another")

The licensee shall notify the NRC Operations Center immediately after informing State and local government agencies of a change of emergency class in either direction and the basis for doing so.

The plant name and change of emergency class should be the first thing noted in this immediate ENS followup notification, to permit the HOO to handle the call in a manner according to its seriousness.

§50.72(c)(1)(iii)

(See Section 3.4.3, "Termination of Emergency Class")

Licensees shall notify the NRC Operations Center immediately after informing State and local government agencies of the termination of an emergency class and should include

- basis for the termination decision, including sufficient current plant or system status as it relates to the event
- specific Federal, State, and local government agencies notified (name of agency, not individual contacted)
- news release information or media interest shown

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(7) See Comment (7) of Page 137.

(19) Declaration or change of class is reportable under either 50.72(a) or 50.72(c)(1)(ii) and should not be included in this section.

§50.72(c)(2)(i)

(See Section 3.4.4, "Results of Evaluations/Assessments of Plant Conditions")

The licensee shall immediately notify the NRC Operations Center of the results of any evaluation or assessment of the plant condition related to a reported event (emergency, 1-hour or 4-hour report), especially an analysis that modifies the safety assessment made in the initial notification for an event in progress even if the licensee has established continuous or periodic communications with the NRC Operations Center.

§50.72(c)(2)(ii)

(See Section 3.4.5, Effectiveness of Response or Protective Measures Taken")

Licensees shall immediately notify the NRC Operations Center during any ongoing reported event when the effectiveness of its response measures can be determined. This may pertain to either a positive or a negative effect on plant or public safety or on the event itself.

§50.72(c)(2)(iii)

(See Section 3.4.6, "Plant Behavior Not Understood")

The licensee shall immediately notify the NRC Operations Center of plant behavior not understood. The licensee typically may be asked to discuss, as applicable, (7)

- details of the plant behavior that are not understood, contrasted with the expected plant behavior
- relationship of the plant behavior to design basis
- effect the plant behavior has on plant safety
- plant and event status
- any abnormal circumstance not previously reported
- any theory on the cause of the unexplained behavior
- ~~any declaration of or change in emergency class~~ (19)