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January 31, 1992

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

Dear Mr. Meyer:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Comments on NUREG 1022 Rev. 1 (Draft)

The attachment to this letter provides Wisconsin Public Service Corporation's (WPSC's) comments on the proposed revision to NUREG 1022, "Event Reporting System 10 CFR 50.72 and 50.73." WPSC appreciates the Nuclear Regulatory Commission's (NRC) efforts which were intended to provide clarification and guidance to the industry in the reporting of significant events. However, after reviewing the proposed revision, we share many of the concerns that NUMARC has identified.

In its attempt to clarify the existing reportability criteria, the revised document has lowered the reporting threshold. Although this will probably reduce the inconsistencies in the application of reportability criteria, it also will obscure events of safety significance with events which have no impact on plant safety. The resulting expanded scope of reporting requirements has questionable justification based on the marginal benefits that would be attained.

Our other major area of concern, which is related to the lower reporting threshold, is the staff's expansion of the definition of design basis. This expansion would result in a redefinition of the systems which are considered engineered safety features (ESF) at the Kewaunee Nuclear Power Plant (KNPP). We encourage the staff to reconsider this position and revert to the original

definition of design basis for reporting requirements as stated in 10 CFR 50.2. Because of the significant impact on all licensees, any redefinition of design basis or expansion of the scope of ESF systems would have to be processed under the provisions of 10 CFR 50.109.

It appears to WPSC that the staff is also attempting to severely curtail the use of engineering judgement. Depending on the complexity of the issue an assessment of reportability could take anywhere from a couple of hours to several months. This does not relieve the Licensee from the responsibility of taking conservative compensatory actions. However, Licensees should not be penalized for taking these actions, as suggested by the staff in the NUREG.

The previous paragraphs have outlined our major areas of concern. The attachment to this letter provides our more detailed and specific comments about the wording and content of the revised NUREG. The attachment includes a copy of the NUREG pages on which WPSC has comments. Each comment is numbered. Following each page from the NUREG are WPSC's numbered comments.

In conclusion, we appreciate the staff's efforts to provide clear reporting guidelines. We encourage the staff to address the concerns identified herein, and to incorporate our comments and those provided by NUMARC prior to issuing NUREG 1022. If you have any questions about our comments, please contact me or a member of my staff.

Sincerely,

C. A. Schrock

C. A. Schrock
Manager - Nuclear Engineering

TJW/car

Attach.

cc - Mr. Patrick Castleman, US NRC
US NRC, Region III
Document Control Desk, US NRC

LIC\NRC\N9A

50-305 WPSC KEWAUNEE

ATTMT TO COMMENT ON DRAFT REV 1 to NUREG-1022, "EVENT REPORTING SYSTEM 10CFR50.72 & 50.73."

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ATTACHMENT

TO THE LETTER

FROM:

C.A. SCHROCK (WPSC)

TO:

D.L. MEYER (NRC)

DATED:

JANUARY 31, 1992

RE:

WPSC's COMMENTS OF
NUREG 1022 REV. 1 (DRAFT)

WPSC's Comments on Page 31:

1. WPSC requests that the NRC provide additional guidance concerning this part of the rule. Specifically if an LCO for an inoperable component expires, is the event considered reportable under this section if the component is returned to service prior to any decrease in reactor power?

2. Is the expiration of an LCO considered a violation of the Technical Specifications and therefore reportable in accordance with 10CFR 50.73(a)(2)(i)(B)?

WPSC's Comments on Page 38:

1. WPSC takes exception to this interpretation since most organizational changes are administrative in nature and have no effect on plant operation or on the health and safety of the public. For example, an LER is not required if TS are not revised to reflect the promotion of the Vice President - Nuclear Power to Senior Vice President. Therefore, each deviation from TS should be reviewed to determine if it involves administrative details or requirements that affect plant safety. Reportablility should be based on this evaluation.

WPSC's Comments on Page 41:

1. The paragraph, as written, would require a one hour report and a 30 day LER for variations in individual parameters or components. The rule is explicit in that it is concerned with the reporting of events or conditions that result in the plant being in a seriously degraded mode. The commissioners in their statements of consideration addressed this issue. They stated, "it is not the intent that this paragraph apply to minor variations in individual parameters or problems concerning a single piece of equipment."

WPSC's Comments on Page 42:

1. The NRC's use of the word "potentially" concerns WPSC. The rule does not address "potentially significant conditions or events." It only addresses an event or condition that actually "results in" the plant being in a seriously degraded mode.

WPSC's Comments on Page 45:

1. The paragraph, as written, would require a one hour report and a 30 day LER for variations in individual parameters or components. The rule is explicit in that it is concerned with the reporting of events or conditions that result in the plant being in a seriously degraded mode. The commissioners in their statements of consideration addressed this issue. They stated, "it is not the intent that this paragraph apply to minor variations in individual parameters or problems concerning a single piece of equipment."

2. WPSC is concerned that this example would lower the current threshold to require reporting of any minor deviation from a commitment. This would seem to contradict the statements of consideration, which state that, "Minor deviation in individual parameters" are not reportable. For example, failure to have adequate procedures in place to meet a license commitment may be a violation of the Technical Specification and therefore reportable under 10CFR 50.73(a)(2)(i)(B). However, failure to have adequate procedures, in itself, does not result in the "Nuclear plant, including its principal safety barriers", being seriously degraded.

3. WPSC requests that the NRC define "significant." Valve misalignments should only be considered reportable; i.e., significant, if they meet the intent of the rule. That is, the misalignment places the plant in an unanalyzed condition, places the plant in a condition outside of its design basis, or in a condition that is not covered by the plant's procedures.

WPSC's Comments on Page 46:

1. The intent of this section of the rule is to report those events that place the plant in an unanalyzed condition that significantly compromises safety. A water hammer that deforms nonsafety related components does not necessarily place the plant in this condition. Furthermore, a water hammer that renders safety related components inoperable would only be considered reportable if it places the plant in an unanalyzed condition, e.g., render all safety injection pumps inoperable.

2. WPSC requests that the word "expected" be defined or replaced with the word "allowable".

3. The plant's Technical Specifications already address allowable leak rates. Maintaining the plant below this limit, by definition, prevents the plant from entering an unanalyzed condition. This paragraph should be revised to clarify that maintaining the leak rate within TS limits is not reportable. Furthermore, the word "inadvertent" should be more clearly defined to prevent misinterpretations.

4. A nuclear plant is designed assuming that one of the trip breakers does not open. This section should be revised to include a clarification that the event is only reportable if both reactor trip breakers are inoperable. The failure of one trip breaker is assumed in the USAR and therefore is an analyzed condition.

5. The USAR assumes a containment leak rate of La; therefore, any leakage less than La is an analyzed condition and is not reportable in accordance with this section of the rule. However, any violation of a TS limit would be reportable in accordance with 10CFR 50.73(a)(2)(i)(B).

WPSC's Comments on Page 47:

1. The purpose of this section of the rule is to report those events which place the plant "In an unanalyzed condition that significantly compromises plant safety." Spills that "could" affect component operability, qualification or design life do not necessarily place the plant in an unanalyzed condition. This sentence should be clarified to state that, "Spills that render safety related equipment inoperable may be reportable."

2. Item (a) should be clarified to state that if flooding renders redundant safety related components inoperable or if it prevents personnel access for critical steps in the plant's emergency operating procedures, the event is reportable. As written the sentence would require a report if a single piece of nonsafety related equipment is rendered inoperable. Clearly this is not an unanalyzed condition.

3. As stated, item (b) would require a report if a single component is degraded without regards to a component's safety function. Clearly the degradation of a single nonsafety related or safety related component does not "significantly compromise safety." Furthermore, degradation of a component does not mean the component is inoperable. This item needs to be clarified to state that adverse environmental conditions that render redundant safety related components inoperable and place the plant in a condition not described in the plant's USAR are reportable.

4. The NRC needs to clarify the meaning of "degrade." A degraded component may be able to perform its intended function and therefore would be considered operable. If the radiation levels have not rendered any equipment inoperable the plant is not in an unanalyzed condition. Furthermore, the inoperability of a single safety related component or multiple nonsafety related components is an analyzed condition. Therefore, this item needs to clarify that this item is reportable if multiple safety related components are rendered inoperable resulting in a condition not analyzed in the USAR.

5. Violations of Technical Specifications are not necessarily a violation of the plant's design basis. Therefore, we request that the example be clarified to address this point.

WPSC's Comments on Page 48:

1. WPSC requests that this example be clarified to state that engineering judgement could be used to determine if sufficient margin exists in the stress analysis to ensure operability. If the margin does exist, then the plant would not be in an unanalyzed condition.

2. This item should be clarified to state that events are reportable in accordance with this section if the containment leak rate exceeds La as a result of the misaligned valves. If the valves were not tested as required by the TS, the event would then be reportable in accordance with 10CFR 50.73(a)(2)(i)(B) as a violation of the Technical Specifications.

WPSC's Comments on Page 49:

1. The ability of two control rods to move at one time does not place the plant outside of its design basis. It is a degradation of a single system. If the plant has been analyzed to handle multiple control rod movement without violating a safety limit, the plant is within its design basis.

2. WPSC requests that the NRC clarify that if the event affects only one train of safeguards equipment the plant is still within its design basis, and therefore not reportable in accordance with this section of the rules.

3. WPSC is concerned that as currently stated, a minor deviation from a single commitment would be considered reportable. As stated on page 41, minor variations in individual parameters or problems concerning single pieces of equipment are not reportable. Since the Operators were able to shutdown the plant with the use of portable equipment, the plant was within its design basis, and there were no safety implications as a result of this one deviation.

WPSC's Comments on Page 50:

1. WPSC requests that this example be expanded to address the affect the combustible loading had on the operability of the equipment in the room. If equipment operability was not affected, then this could be considered a minor deviation of a single commitment. As stated on page 41 of NUREG 1022 Rev. 1, draft, minor deviations are not reportable.

2. If the system is determined to have a safety factor of 2 and is therefore operable, there are no safety consequences as a result of these discoveries. Therefore, the plant would be within its design basis and the event would not be reportable.

3. Plant procedures are not designed to cover all contingencies associated with plant operation. Operator knowledge and Operator training are also relied on to ensure safe operation of the plant. The example as given would require a 1 hour report and a 30 day LER for any procedure deficiency. Furthermore, since the plant tripped as design, the event was covered by plant procedures.

WPSC's Comments on Page 53:

1. WPSC disagrees with the staff's interpretation for the following reasons:

    1. Reportability should be based on the event and its affect on plant safety and not on conservative precautionary actions taken by the plant's staff.

    2. Using this criteria penalizes and discourages utility personnel from taking conservative preventive compensatory actions.

WPSC's Comments on Page 60:

1. WPSC requests that the NRC provide Licensees with specific guidance to determine the States and Counties ability to respond to an event. Quantitative guidance with respect to inches of precipitation, temperature, wind speed, etc., should be provided.

2. WPSC disagrees with the staff's interpretation for the following reasons:

    1. Reportability should be based on the event and its affect on plant safety and not on conservative precautionary actions taken by the plant's staff.

    2. Using this criteria penalizes and discourages utility personnel from taking conservative preventive compensatory actions.

WPSC's Comments on Page 61:

1. WPSC requests that this example be clarified to state that if the Licensee has procedures or practices in place to address this event, the event would not be reportable. Reportability should be based on the ability to execute the emergency plan. Preplanned compensatory actions which prevent a major loss of assessment capability ensures successful implementation of the emergency plan. Therefore, these compensatory actions would not be reportable.

2. This event would not be reportable if the information supplied by the DAS was available from other instruments, and procedures are in place to compensate for the loss of the DAS.

WPSC's Comments on Page 62:

1. Engineering judgement should be allowed when determining reportability based on siren operability. Factors that should be considered are the percent of the population not covered by sirens and the existence of procedure or practices to compensate for lost sirens.

WPSC's Comments on Page 65:

1. WPSC requests that this section be clarified to state that only events that significantly interfere with the performance of "duties necessary for the safe operation of the nuclear plant" are reportable. If an event does not significantly hamper safety related actions, it does not pose an "actual threat" to the plant. Therefore it would not be reportable.

2. To ensure the threshold is at the proper level, the phrase "routine function" should be changed to "routine safety related function". Without this change, the interruption of a nonsafety related routine function due to a minor event, would be considered reportable.

WPSC's Comments on Page 66:

1. WPSC requests that this section be clarified to state that only events that significantly interfere with the performance of "duties necessary for the safe operation of the nuclear plant" are reportable. If an event does not significantly hamper safety related actions, it does not pose an "actual threat" to the plant. Therefore it would not be reportable.

WPSC's Comments on Page 67:

1. WPSC requests that this section be clarified to state that only events that significantly interfere with the performance of "duties necessary for the safe operation of the nuclear plant" are reportable. If an event does not significantly hamper safety related actions, it does not pose an "actual threat" to the plant. Therefore it would not be reportable.

WPSC's Comments on Page 68:

1. WPSC requests that this section be clarified to state that only events that significantly interfere with the performance of "duties necessary for the safe operation of the nuclear plant" are reportable. If an event does not significantly hamper safety related actions, it does not pose an "actual threat" to the plant. Therefore it would not be reportable.

WPSC's Comments on Page 69:

1. WPSC requests that the NRC provide a basis for the 55 gallon limit.

2. Since the rule specifically states that only "actual" threats need to be reported, the word "potential" should be deleted.

   The guidance should also be revised to incorporate the TS limits on reactor coolant leakage. This would provide a more quantitative method of determining reportability.

   The rule specifically states that only those events that significantly affect personnel in the performance of "duties necessary for the safe operation of the nuclear power plant," are reportable. The guidance in this example should be revised to reflect this threshold.

3. WPSC requests that the NRC define "significant" as it pertains to this example. Furthermore, the rule only requires reporting of an "actual threat" to the plant or events that significantly hamper personnel in performing duties necessary for the safe operation of the plant. Therefore, the example should be revised to reflect the current reporting threshold.

4. Since the rule specifically states that only "actual" threats need to be reported, the word "potentially" should be deleted. Furthermore, if only a single train of vital equipment would be affected, the event by definition, would not pose an "actual" threat to the safety of the plant. Therefore, the example should be revised to reflect the threshold stated in the rule.

5. WPSC requests that this example be expanded to state that a power decrease or other compensatory action taken in response to an actual threat are reportable. However, the rule is only concerned with actual threats. Therefore, precautionary compensatory action would not be reportable and this example should be expanded to clarify the reporting threshold identified in the rule.

6. WPSC requests that this example be expanded to state that the event poses an actual threat to the operability of safety related components. Regardless of the cause, the inoperability of a single piece or train of safety related equipment does not pose an actual threat to a nuclear power plant. The loss of single train is assumed in the plant's safety analysis and therefore should not be reportable.

WPSC's Comments on Page 70:

1. WPSC disagrees with the NRC's reportability determination. The event affected only one train of the AFW system, the valve's protection systems functioned as designed, the fire barriers in the control panel and at the valve actuator prevented the fire from spreading. Therefore, the event did not pose an "actual threat" to the safety of the plant and site personnel were not significantly hampered in the performance of their safety related duties.

WPSC's Comments on Page 72:

1. WPSC requests that the NRC expand on this example. As stated, we would disagree with the NRC's reportability determination. The control room ventilation system functioned as designed. Furthermore, gas concentration was small enough to allow the control room ventilation system to be reset within 14 minutes. As far as we can tell from this example, there was never any actual threat to the plant or to plant personnel and therefore this event would not be reportable.

2. An evacuation, in itself, is not indicative of an "actual threat" to plant safety. However, if the operators were significantly hampered in the performance of "duties necessary for the safe operation of the nuclear power plant," then WPSC concurs with the NRC reportabilty determination.

WPSC's Comments on Page 73:

1. WPSC requests that the NRC expand on this example. Although we agree that the event is reportable as an ESF actuation and a violation of TS, there is insufficient information to determine what the actual threat to the plant was. There is no indication that any safety related equipment was rendered inoperable or threatened. There is also no reason to believe that the personnel would have to enter the contaminated areas in order to ensure the safe operation of the plant.

WPSC's Comments on Page 76:

1. Exceeding an anticipated value does not mean that safety has been "significantly compromised." Therefore, this example should be expanded to clarify that USAR assumptions concerning the number of defects was exceeded.

WPSC's Comments on Page 77:

1. Refer to comment 1 on page 76.

2. WPSC requests that this example be expanded to address the safety factor required by the USAR and how the degradation resulted in a safety factor less than that required. If the safety factor is still within USAR allowable, the plant is not in an unanalyzed condition.

WPSC's Comments on Page 78:

1. The USAR assumes a containment leak rate of La. Leak rates less than La are an analyzed condition and therefore, by definition, do not significantly compromise plant safety.

   The example should be clarified to state that the as found leakage exceeded the USAR allowable limit. If the leakage was below La but above the TS limit, the event would not be reportable as an unanalyzed condition, but would be reportable as a violation of TS.

WPSC's Comments on Page 81:

1. Chapters 6 and 7 of Kewaunee's USAR respectively identify the engineered safety features and the reactor protection system at the Kewaunee plant. A redefinition of ESF or RPS for the Kewaunee plant will have to be processed under the provisions of 10CFR 50.109 as an imposition of a new interpretation of the Commissions rules.

WPSC's Comments on Page 84:

1. Chapters 6 and 7 of Kewaunee's USAR respectively identify the engineered safety features and the reactor protection system at the Kewaunee plant. A redefinition of ESF or RPS for the Kewaunee plant will have to be processed under the provisions of 10CFR 50.109 as an imposition of a new interpretation of the Commissions rules.

WPSC's Comments on Page 87:

1. WPSC requests that the NRC clarify the difference between this example and the non reportable anticipatory start of the DG described on page 86.

WPSC's Comments on Page 91:

1. Offsite power is not assumed to be available during or following an accident. Therefore it is not required to shutdown the reactor, remove residual heat, or mitigate the consequences of an accident. However, a loss of offsite power will or should result in the start of both diesel generators and therefore would be reportable in accordance with 10CFR 50.72(b)(2)(ii).

2. This example directly contradicts the example given in question 7.11 of NUREG 1022 supplement 1. WPSC requests clarification and basis for the NRC's change in interpretation.

WPSC's Comments on Page 93:

1. The existence of an inadequate procedure could not "alone" prevent the safe shutdown of the reactor, remove residual heat, or mitigate the consequences of an accident. Therefore, this paragraph should be revised to change "approval" to "performance".

WPSC's Comments on Page 95:

1. WPSC strongly disagrees with the NRC's assessment that the reports were late. Licensees must be allowed sufficient time to perform an engineering evaluation to determine if the discovered condition could actually prevent the fulfillment of a safety function.

   The Licensee took compensatory action since insufficient information was available to determine the adequacy of the design when it was first discovered. The Licensee should not be penalized for taking conservative compensatory actions.

WPSC's Comments on Page 96:

1. WPSC requests that this example be clarified to state that a source range detector is assumed to be operable by the USAR when the plant is in refueling shutdown. If it is not, then this event "alone" would not have prevented the fulfillment of a safety function.

WPSC's Comments on Page 129:

1. The use of compensatory actions as a indication of reportability discourages and penalizes Licensees from taking conservative compensatory measures. Therefore this criteria should be eliminated.

3.2.1 Plant Shutdown Required by Technical Specifications

§50.72(b)(1)(i)(A)	§50.73(a)(2)(i)(A)
Licensees shall report: "The initiation of any nuclear plant shutdown required by the plant's Technical Specifications."	Licensees shall submit a Licensee Event Report on: "The completion of any nuclear plant shutdown required by the plant's Technical Specifications."

If not reported as an emergency under §50.72(a), licensees are required to report the initiation of a plant shutdown required by TS to the NRC via the ENS as soon as practical and in all cases within 1 hour of the start of power reduction. Licensees are required to submit an LER if the shutdown is completed.

Discussion

This 50.72 reporting requirement is intended to capture those events for which TS require the initiation of reactor shutdown to provide the NRC with early warning of safety significant conditions serious enough to warrant that the plant be shut down.

1 For §50.72 reporting purposes, the phrase "initiation of any nuclear plant shutdown" is the performance of any action to start reducing reactor power to achieve an operational condition or mode that requires the reactor to be subcritical, as a result of a TS requirement (e.g., a limiting condition for operation (LCO) action statement or Standard Technical Specification 3.0.3, or equivalent). This includes any means of power reductions, such as control rod insertion, boron concentration changes, or boiling water reactor (BWR) recirculation flow reduction.

For §50.73 reporting purposes, the phrase "completion of any nuclear plant shutdown" is defined as the point in time during a TS required shutdown when the plant enters the first operating mode that requires the reactor to be subcritical. For example, if at 0200 hours a plant enters an LCO action statement that states, "restore the inoperable channel to operable status within 12 hours or be in at least Hot Standby within the next 6 hours," the plant must be shut down (i.e., at least in hot standby) by 2000 hours. An LER is required if the inoperable channel is not returned to operable status by 2000 hours and the plant enters hot standby.

2 An LER is not required if a failure can be corrected before a plant is required to be in a shutdown condition and no other criteria in 50.73 apply. The shutdown is reportable, however, if

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

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.

1 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.

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

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

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
1 1 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.

§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 requlation 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

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."

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)

1

- 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:

2

- 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

3

- 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.]

Examples

(1) Plant Being Seriously Degraded

- Reportable Events or Conditions

1 - 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

2 - 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, including significant welding or material defects

3 - an inadvertent loss of a significant quantity (>100 gallons) 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

4 - a reactor trip breaker failing its trip bar lift force measurement test as a result of a significant design, maintenance, or test problem

- 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

5 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

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.

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

  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

- Reportable Events or Conditions

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

2 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

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

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

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

- 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

1

• 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.

(3) Plant Outside Design Basis

• 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.

2

This event is reportable because 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.

• Service Water System Leaks

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

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.

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.

- 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.

1 |

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

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

2 |

  - 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.

  - 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.

3 |

  - The licensee had inadeguate 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 reguirements of Appendix R to 10 CFR Part 50.

1

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

2

- 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.

- 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.

(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

3

  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.

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 or transportation accident that occurred near the site and created a safety concern to the operators (often identified in control room habitability studies and probabilistic risk assessments) is reportable.

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 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. The 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.

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.

1

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

assessment capability. Some engineering judgment is needed to determine the significance of the loss in terms of the equipment and the length of time involved.

The loss of the following are considered reportable: a significant amount of control room annunciators or monitors (such as an annunciator panel, a number of annunciators on various panels, or all plant vent stack radiation monitors), control room or shutdown panel habitability (from complete loss to using self-contained breathing apparatus), or loss of multiple independent safety assessment equipment or systems concurrently.

However, the unavailability of one redundant component or train such as a meteorological tower, radiation monitor, plant or SPDS computer, for a period of time permitted by the plant technical specifications or administrative procedures as a result of failure, maintenance, surveillance testing, etc., unless designated by the licensee as necessary to obtain significant safety information, generally is not reportable.

Loss of Offsite Response Capability

A major loss of offsite response capability includes those events that would significantly impair the fulfillment of the licensee's approved emergency plan for other than a short time. Loss of offsite response capability may typically include, but not be limited to, the loss of plant access, emergency offsite response facilities, or public prompt notification system, including sirens and other alerting systems.

Plant Access or Emergency Offsite Response Facilities

1 If a large storm or other event causes roads to be closed and the State and local governments are rendered incapable of performing their responsibilities in the emergency plan for the plant, then the NRC is to be notified. If the loss of access to the plant or
2 the emergency offsite response facilities can be anticipated, and the licensee commences a reaction to the situation before an official declaration of closed roads, an ENS notification is to be made during the planning stages under §50.72(b)(1)(iii).

Public Prompt Notification System

If the alert systems are owned and/or maintained by others, the licensee should take reasonable measures to remain informed of the operability of the systems and is responsible for notifying the NRC of a major loss of capability of the systems to perform their function.

Although the loss of a single siren for a short period of time is not a major loss of offsite response capability, the loss of a large number of sirens, other alerting systems (e.g., tone alert

radios), or more importantly, the capability to alert a large segment of the population for a period of 1 hour or more would warrant an immediate notification.

Loss of Communications Capability

A major loss of communications capability for other than a short time (less than 1 hour) may typically include, but not be limited to, the partial loss of the ENS, dedicated telephone communication link to a State or a local government agency and emergency offsite response facilities, in-plant paging and radio systems, or commercial telephone lines.

Examples

Loss of Emergency Assessment Capability

(1) Loss of Emergency Operations Facilities (EOF) Computers

Power was lost to the local EOF air conditioning and computer when a transmission line was lost. When the computer room temperature exceeded 78 °F, the computer tripped as designed. Concurrently, the corporate EOF computer was out of service for planned work on that facility's air conditioning system. Both EOF computers were out of service for several hours. The technical support center computer remained operable throughout the event.

1 | An ENS notification is required because of loss of use of the EOF. No LER is required.

(2) Loss of Plant Computer Data Acquisition System (DAS)

The plant computer lost its DAS although the safety parameter display system and other control room indications remained operable. The licensee considered this loss of the DAS to be a major degradation of the plant's emergency assessment capability. The licensee initiated investigation and repair efforts, informed the NRC resident inspector, and made an ENS notification within an hour of the loss of the DAS. The licensee also made a followup call to the NRC Operations Center several hours later when the computer was restored to service.

2 | An ENS notification is required because the loss of this computer was considered by the licensee to be a major loss of assessment capability. No LER is required.

Loss of Offsite Response Capability

(1) Plant Access Roads Closed by Storm

The local sheriff notified the licensee that all roads to and from the plant were closed because of a snow storm. The licensee had two full shift crews on site to support plant operations and no emergency declaration was made. The licensee notified State and local authorities of the situation and made an ENS notification. The licensee deactivated its station isolation procedures after the storm passed and the roads were passable.

An ENS notification is required because the sheriff's road closing may prevent the plant staff from staffing the TSC, etc., or from fully responding to some emergencies. A followup ENS notification is to be made when the situation has been rectified, if periodic updates were not specifically requested per §50.72(c)(2)(ii). This event is also reportable under §50.72(b)(1)(iii). No LER is required.

(2) Loss of Public Prompt Notification System

ENS notifications of the loss of the emergency sirens or tone alert radios vary according to the licensee's locale and interpretations of "major loss" and have included:

- 4 of 37 offsite sirens reported inoperable by local fire department (licensee procedures defined major loss as > 10%)
- 12 of 40 county alert sirens disabled for several hours because of loss of power as a result of severe weather
- 28 of 54 alert sirens reported out of service for an hour as a result of a local ice storm and a return-to-service estimate was unknown
- All offsite emergency sirens were
  - found inoperable during a monthly test
  - taken out of service for 4 hours of repair
  - inoperable because control panel power was lost for an unknown period
  - inoperable because the county radio transmitter failed for 4 hours

1

An ENS notification is required because of the major loss of the public prompt notification system. An LER is not required.

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. The NRC is interested in real or actual threats as opposed to threats without credibility.

- Broad Scope

  1 The scope of the regulation is broad, covering more than just safety systems. 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.

- Significant Hampering of Site Personnel

  1 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.

  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. 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. If
  2 the condition makes performing routine functions in the nuclear power plant significantly more difficult and it is something more than a routine nuisance, it is reportable.

  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

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.

1

- 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.

- 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.

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 building or facility.

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.

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).

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

Fires include ignition, detonation, burns, combustion, explosion, and the like of solid, liquid, or gaseous material in safety- and non-safety-related process systems or elsewhere inside the plant protected area.

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 are the reportability guidelines. For example, a fire is reportable within 1 hour if it

- threatens plant safety, as discussed above
- significantly hampers plant personnel in the performance of their duties, as discussed above
- causes significant damage to equipment (e.g., safety related electrical cables, switches, instruments, etc.)
- 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)
- reguires 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

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 subseguent 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.

Toxic Gas Threat

The NRC is interested in toxic gas releases because of their potential to significantly hamper personnel 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 release may prevent immediate or periodic access for operations personnel or a required roving fire watch. Personnel may reguire 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.

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.

Radioactive Release Threat

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.

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

In-Plant Spill/Flood Threat

1 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.

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.

2

- 3 The leaking fluid is radioactive and contaminates a significant area, contaminates several individuals, or significantly contaminates one individual.

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

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

- 6 An ESF or safety equipment is rendered inoperable.

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

- 5 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).

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 reguired 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.

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

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

[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.]

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

additional respiration protection and anticontamination requirements.

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

3.3.1 Shutdown Plant Found in Degraded or Unanalyzed Condition

§50.72(b)(2)(i)	10 CFR 50.73
Licensees shall report: "Any event found while the reactor is shut down, that, had it been found while the reactor was in operation, would have resulted in the nuclear power plant, including its principal safety barriers, being seriously degraded or being in an unanalyzed condition that significantly compromises plant safety."	[Events found while the reactor is shutdown that involve degradation of the principal safety barriers or unanalyzed conditions that significantly compromise plant safety are addressed by §50.73(a)(2)(ii). Therefore, an LER is reguired. See Section 3.2.4.]

If not reported under §50.72(a) or (b)(1), licensees are reguired to report any such condition to the NRC via the ENS as soon as practical, and in all cases within 4 hours of discovery of the condition. Licensees are required to submit an LER within 30 days.

Discussion

As previously indicated in Section 3.2.4, similarities exist between §50.72(b)(2)(i) and §50.72(b)(1)(ii) reporting reguirements for degraded or unanalyzed plant conditions. Under §50.72(b)(2)(i) a 4-hour report is required, while under §50.72(b)(1)(ii) a 1-hour report is necessary. This difference in reporting timeframe is warranted because §50.72(b)(2)(i) pertains to events found while the reactor was shut down, while §50.72(b)(1)(ii) applies to events or conditions occurring while the plant is in operation.

Guidelines for reporting under §50.72(b)(2)(i) above are provided in Section 3.2.4. Any event or condition reportable under §50.73(a)(2)(ii)(B) and (C) found while the reactor is shutdown does not require an ENS notification under the above criterion, but does require an LER.

Examples

(1) Significant Degradation of Reactor Fuel Rod Cladding Identified During Testing of Fuel Assemblies

With the plant in Mode 6 (refueling), ultrasonic testing revealed a number of failed fuel rods (approximately 233 were identified in 88 of 109 fuel assemblies scheduled for

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

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.

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.

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

(4) Containment Integrity Lost During Shutdown

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

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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

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

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

(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.

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).

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[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).

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

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.

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(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."

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

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

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- The RWCU isolation valves closed in response to 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 event is reportable as an ESF actuation.[2]

- 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.

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.

1 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.

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.

  2 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 systems. 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.

- Common-Mode Failure

  Several conditions are reportable under these criteria:

- 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 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.)

- 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)

- 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 (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)

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Examples

(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

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.

1 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

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

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

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

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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

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 prereguisite for reportability.

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 conseguences of an event. A plant transient may have been affected by plant conditions external to the event, or