

January 8, 2015

Mr. Keith R. Jury  
Vice President, Licensing and Regulatory Affairs  
Exelon Generation Company, LLC  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: EXELON GENERATION COMPANY, LLC REQUEST TO REVISE NUREG-1022

Dear Mr. Jury:

This letter is in response to your February 12, 2014, letter (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14043A539) requesting a revision to NUREG-1022, Revision 3, "Event Report Guidelines: 10 CFR 50.72 and 50.73." The U.S. Nuclear Regulatory Commission (NRC) appreciates your feedback on issues associated with the reportability of momentary inoperabilities of the secondary containment. After careful consideration, the NRC has determined that the guidance in NUREG-1022 is consistent with the regulatory intent of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.72 and 50.73. A basis for this determination, which includes relevant background information, is enclosed. Absent rulemaking to change 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v), the NRC does not intend to revise NUREG-1022 to specifically exclude momentary inoperabilities of the secondary containment from event reporting. The NRC will continue to work with stakeholders on alternative available courses of action.

If you have any questions, please contact Mr. Aron Lewin at 301-415-2259.

Sincerely,

*/RA/*

Scott A. Morris, Director  
Division of Inspections and Regional Support  
Office of Nuclear Reactor Regulation

Enclosure:  
Background – Basis of Determination

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ADAMS Accession No.: ML14323A682; \*- e-mail concurrence

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<b>DATE</b>	12/15/2014	12/15/2014	12/11/2014	01/08/2015

OFFICIAL RECORD COPY

## Basis of Determination

### Background

NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73," contains guidelines that the staff of the U.S. Nuclear Regulatory Commission (NRC) considers acceptable for use in meeting the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," and 10 CFR 50.73, "Licensee Event Report System." Section 3.2.7, "Event or Condition that Could Have Prevented Fulfillment of a Safety Function," of NUREG-1022, provides guidance for reporting under 10 CFR 50.72(b)(3)(v) and 10 CFR 50.73(a)(2)(v). As indicated in 10 CFR 50.72(b)(3)(vi) and 10 CFR 50.73(a)(2)(vi), reports are required for issues associated with procedural errors, equipment failures, and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies.

NUREG-1022, Revision 2 (ADAMS Accession No. ML003762595), was published in October 2000 in support of a 10 CFR 50.72 and 50.73 rule change that went into effect on January 23, 2001 (65 *Federal Register* (FR) 63769). Although not associated with the rule change, event reports under 10 CFR 50.73(a)(2)(v) were tied to the Safety System Functional Failure (SSFF) Performance Indicator when the Reactor Oversight Process was created in 2000.

Shortly after the revised rule went into effect, NRC staff raised concerns regarding apparent inconsistent event reporting under 10 CFR 50.72(b)(3)(v) and 10 CFR 50.73(a)(2)(v). In early 2004, the Nuclear Energy Institute (NEI) conducted a study and submitted its findings to the NRC in a document titled, "NEI Safety System Functional Failure Reconciliation Project" (ADAMS Accession No. ML043410335). Pertinent discussions in the document regarding Technical Specification (TS) operability, Surveillance Requirements, and event reportability include the following (bold text added for emphasis):

10 CFR 50.73(a)(2)(i)(B) requires reporting of conditions prohibited by the Technical Specifications. **If this condition also involves the inability of the system to perform its safety function (e.g., both trains inoperable), even if for a short period of time, then the event is also reportable under 10 CFR 50.73(a)(2)(v)** (and 10 CFR 50.72(b)(3)(v) [8-hour ENS notification]).

NUREG-1022, Supplement 2, provides explicit guidance that such issues must be evaluated and reported. NUREG-1022, Revision 2, Section 3.2.7, states in part:

'... Whenever an event or condition exists where the system could have been prevented from fulfilling its safety function because of one or more reasons for equipment inoperability or unavailability, it is reportable under these criteria. This would include cases where one train is disabled and a second train fails a surveillance test...'

A significant number of the Category L, W, and Z LERs involved instances where a single train was not capable of performing its intended safety function. While **licensees are required to consider the opposite train, and report under 10 CFR 50.73(a)(2)(v) if both trains are inoperable**, licensees frequently do not discuss the status of the opposite train in the LER. This situation can directly

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affect the SSFF [Safety System Functional Failure] performance indicator reporting.

Preliminary feedback from the NRC was that INEEL [Idaho National Engineering and Environmental Laboratory] may have assumed, when the inoperability existed for a long period of time, that the opposite train may have been out of service. Without being able to contact the licensee for additional information on the status of the opposite train, the as-submitted LER was inadequate to make a final determination. **(We should also note that several instances existed when the licensee did, in fact, take the opposite train out for surveillance purposes, because it did not at the time realize that the first train was inoperable. These situations were category X, apparently missed SSFF.)**

The NRC continued to monitor event reports for consistency, and by 2009, still noted apparent inconsistencies in event reporting under 10 CFR 50.72(b)(3)(v) and 10 CFR 50.73(a)(2)(v). As a result, a public meeting was held in June 2009 (ADAMS Accession No. ML1012410860) in which the NRC discussed discrepancies in NUREG-1022, Revision 2, that could possibly be contributing to the apparent inconsistencies in event reporting. In addition, the NRC also solicited feedback on licensee event reporting issues and determined a revision to NUREG-1022 was warranted to clarify existing regulatory requirements. During the revision process, multiple public meetings were held in order to solicit stakeholder input and feedback. In clarifying existing regulatory requirements, the NRC considered the provisions of the rule itself, the associated statements of consideration, and other available guidance in that hierarchical order.

NUREG-1022, Revision 3 (ADAMS Accession No. ML13032A220) was issued on February 11, 2013 (78 FR 9743). Background information associated with the NUREG revision can be found in the "Discussion of Changes Associated with Final NUREG-1022, Revision 3," (ADAMS Accession No. ML12216A185) and provides the basis for many of the staff's decisions. Some highlights to note:

- There were multiple discussions and examples in Revision 2 of NUREG-1022 that indicated TS inoperable conditions were reportable. In addition, examples and discussions on the impact of TS operability on event reporting can be found in (1) previous revisions of NUREG-1022 guidance, and (2) the Federal Register Notices (FRNs) associated with issuance of the rule.
- In reviewing numerous applicable references spanning a 30 year time frame from when the rule was created, there was not one instance in which it was identified that an inoperable system was not reportable.

It should be noted that 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v) require a report for any event or condition that could have prevented the fulfillment of the safety function of structures or systems. Loss of function does not have to actually occur to be reportable as the rule indicates the threshold is "**could have** prevented the fulfillment of the safety function of structures or systems" (emphasis added). Section 3.2.7 of NUREG-1022, Revision 3, states that the level of judgment for reporting an event or condition under this criterion is a "reasonable expectation of

preventing fulfillment of a safety function.” The NRC staff also revisited, as part of the NUREG revision process, whether or not TS inoperable conditions represent a scenario in which there is a reasonable expectation of preventing fulfillment of a safety function. The NRC reviewed 10 CFR 50.36, “Technical Specifications,” and Regulatory Issue Summary (RIS) 2005-20, Revision 1, “Revision to NRC Inspection Manual Part 9900 Technical Guidance, ‘Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety,’” dated April 16, 2008 (ADAMS Accession No. ML073531346). Some highlights to note (bold text added for emphasis):

- 10 CFR 50.36(c)(2)(i) states that TS will include, “Limiting conditions for operation. **Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility.**”

- 10 CFR 50.36(c)(3) states that TS will include,

Surveillance requirements. **Surveillance requirements** are requirements relating to test, calibration, or inspection to **assure** that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and **that the limiting conditions for operation will be met.**

- Per the attachment to RIS 2005-20, Revision 1,

Specified Function/Specified Safety Function: The specified function(s) of the system, subsystem, train, component or device (hereafter referred to as system) is that specified safety function(s) in the CLB [Current Licensing Basis] for the facility. In addition to providing the specified safety function, a system is expected to perform as designed, tested and maintained. **When system capability is degraded to a point where it cannot perform with reasonable expectation or reliability, the system should be judged inoperable, even if at this instantaneous point in time the system could provide the specified safety function.**

- Per the attachment to RIS 2005-20, Revision 1,

**In order to be considered operable, an SSC [Structure, System, or Component] must be capable of performing the safety functions specified by its design**, within the required range of design physical conditions, initiation times, and mission times. In addition, **TS operability considerations require that an SSC meet all surveillance requirements** (as specified in Surveillance Requirement (SR) Applicability SR 3.0.1). An SSC that does not meet an SR must be declared inoperable.

As a result, the NRC did not consider 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v) reports associated with TS inoperability to be a change in staff position. This was also indicated in the FRN associated with issuance of NUREG-1022, Revision 3 (78 FR 9744). The decision was reviewed by multiple offices within the NRC. For systems within scope, the inadvertent TS inoperability of a system in a required mode of applicability constitutes an event or condition for which there is no longer a reasonable expectation that equipment can fulfill its safety function. Therefore, such events or conditions are reportable.

It should be noted that the NRC revised its operability determination guidance on January 31, 2014 (see Inspection Manual Chapter (IMC) 326, "Operability Determinations and Functionality Assessments for Conditions Adverse to Quality or Safety," (ADAMS Accession No. ML13274A578)). However, the pertinent guidance found in the previous IMC Part 9900 Technical Guidance is also found in IMC 326.

### Recommendation Response

Exelon recommended that NUREG-1022 Revision 3 be revised on an expedited basis to clarify the guidance in Section 3.2.7 to exclude reportability of momentary inoperabilities of secondary containment as a loss of safety function, even though secondary containment is declared inoperable for a brief time due to the failure to meet applicable TS surveillance requirements (while applying TS rules of usage), when there is no loss of safety function. After careful consideration of the information provided in the Exelon letter dated February 12, 2014, the staff has determined that a revision to NUREG-1022 is not necessary. In addition to the above background information, the staff also considered the following in reaching its determination.

- (1) If there is a belief that, irrespective of TS requirements, the as-found condition of the secondary containment still results in a situation in which there is a reasonable expectation that the SSC can perform its safety function (i.e., belief that TS do not represent the lowest functional capability or performance levels of equipment required for safe operation), then a license amendment per 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," could be considered.
- (2) Regarding Reactor Oversight Process Performance Indicators, it should be noted that NEI 99-02, Revision 7, "Regulatory Assessment Performance Indicator Guideline" (ADAMS Accession No. ML073531346) contains SSFF Performance Indicator guidance and states:

Engineering analyses: events in which the licensee declared a system inoperable but an engineering analysis later determined that the system was capable of performing its safety function are not counted, even if the system was removed from service to perform the analysis.

This guidance is first found in NEI 99-02, Revision 0. While NEI 99-02 is considered appropriate guidance for SSFF Performance Indicator considerations, it is not considered appropriate guidance for event reporting associated with 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v). As indicated earlier, loss of function does not have to actually occur to be reportable under 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v) as the

rule indicates the threshold is “could have prevented the fulfillment of the safety function.”

- (3) With regards to the request to revise NUREG-1022 to provide exceptions to momentary inoperabilities of the secondary containment, it should be noted that the rule itself does not offer such exceptions. As a result, providing such guidance in NUREG-1022 would be contrary to 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v). The issue of momentary inoperabilities was discussed during the NUREG revision process (see Item #24 associated with the June 2009 public meeting (ADAMS Accession Nos. ML101241087 and ML101720303)). The NRC and industry identified that out of service time is not a consideration for this reporting criterion. In addition, as discussed in the proposed rule FRN associated with the 2000 rule change (64 FR 36291, 36295; July 6, 1999), a commenter raised the issue of TS allowed outage / completion times as well (bold text added for emphasis):

Comment 23: **One comment recommended that an event or condition that could have prevented fulfillment of the safety function of structures or systems. \* \* \* should be reportable only when the time limits of the TS are exceeded.** It indicated that if the time limits are not exceeded the event is not significant enough to warrant reporting.

**Response: The comment is not accepted.** Generally, standard TS require commencement of shutdown within one hour if an important system, such as emergency ac power, is inoperable. However, the stated reason for allowing one hour before commencing the shutdown is to provide time to prepare for an orderly shutdown. Also, the condition might have lasted much longer than one hour before it was discovered. Finally, an event that results in a safety system failure (or inability to perform its function) is generally significant enough to warrant NRC review.

In the year following implementation of NUREG-1022 Revision 3 (i.e. July 1, 2013 through June 30, 2014), the overall number of 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v) reports increased. Roughly 120 reports were submitted for 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v) events during this time period. Recent historic averages have been approximately 100 reports per year. However, only about 30 percent of the total reports from the July 1, 2013 through June 30, 2014 time period come from the 65 Pressurized Water Reactors (PWRs) in operation. This represents near historic lows for PWR reports and may be due, in part, to NUREG-1022, Revision 3 guidance that clarified which systems are within scope of 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v). For the 35 Boiling Water Reactors (BWRs) in operation, about 60 percent of the BWR reports from the July 1, 2013 through June 30, 2014 time period are due to momentary inoperabilities of the secondary containment. Most of the reports are coming from a limited number of BWR sites, are repetitive in nature, and appear to be due primarily to equipment issues or procedural errors/inadequacies. If equipment issues and procedural errors/inadequacies are adequately corrected/addressed, licensees could reach near historic reporting lows for BWRs as well.

Absent rulemaking to change 10 CFR 50.72(b)(3)(v) and 50.73(a)(2)(v), the NRC does not plan to revise NUREG-1022 to specifically exclude momentary inoperabilities of the secondary containment from event reporting. Absent a TS amendment that results in the determination that momentary issues with the secondary containment do not represent a significant degradation to system capability, the secondary containment must be maintained in a manner such that there is a reasonable expectation that the system can provide its safety function during a design basis event per the analysis associated with Chapters 6 and 15 of the Final Safety Analysis Report (or equivalent chapters).