

October 2, 2002

Mr. John L. Skolds, President
and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
200 Exelon Way, KSA 3-E
Kennett Square, PA 19348

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENT RE: CONSOLIDATED LINE-ITEM IMPROVEMENT
CONCERNING MISSED SURVEILLANCES (TAC NOS. MB5153 AND MB5154)

Dear Mr. Skolds:

The Commission has issued the enclosed Amendment No. 162 to Facility Operating License No. NPF-39 and Amendment No. 124 to Facility Operating License No. NPF-85 for the Limerick Generating Station (LGS), Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated May 14, 2002, as supplemented by letter dated September 5, 2002.

These amendments revise Technical Specification (TS) Surveillance Requirement (SR) 4.0.3 to extend the delay period, before entering a Limiting Condition for Operation, following a missed surveillance. The delay period is extended from the current limit of "...up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours" to "...up to 24 hours or up to the limit of the specified Surveillance time interval, whichever is greater." The following requirement is added to SR 4.0.3: "A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed." In addition, a TS Bases Control Program is added to the LGS TS.

Two administrative changes have been incorporated. The position of "Sr. Manager - Operations" is replaced by an overall statement referencing the American National Standards Institute (ANSI)/American Nuclear Society (ANS) Standard 3.1-1978 for "Operations Manager." Additionally, the LGS TS requirement for Plant Operations Review Committee (PORC) member experience in "Experience Assessment" is replaced with "Regulatory Assurance."

J. Skolds

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A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Scott P. Wall, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosures: 1. Amendment No. 162 to
License No. NPF-39
2. Amendment No. 124 to
License No. NPF-85
3. Safety Evaluation

cc w/encls: See next page

J. Skolds

-2-

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Scott P. Wall, Project Manager, Section 2
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Docket Nos. 50-352 and 50-353

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1. Amendment No. 162 to License No. NPF-39
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 3. Safety Evaluation

cc w/encls: See next page

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* See previous concurrence.

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DATE	10/2/02	10/02/02	9/19/02	9/18/02	10/2/02	10/02/02

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EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 162
License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated May 14, 2002, as supplemented by letter dated September 5, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-39 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 162, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Andersen, Acting Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: October 2, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 162

FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3/4 0-2
B 3/4 0-3
B 3/4 0-4
B 3/4 0-5
6-3
6-7
6-14c

Insert

3/4 0-2
B 3/4 0-3
B 3/4 0-3a
B 3/4 0-4
B 3/4 0-5
6-3
6-7
6-14c

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 124
License No. NPF-85

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated May 14, 2002, as supplemented by letter dated September 5, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-85 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 124, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Andersen, Acting Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: October 2, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 124

FACILITY OPERATING LICENSE NO. NPF-85

DOCKET NO. 50-353

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3/4 0-2
B 3/4 0-3
B 3/4 0-4
B 3/4 0-5
6-3
6-7
6-14c

Insert

3/4 0-2
B 3/4 0-3
B 3/4 0-3a
B 3/4 0-4
B 3/4 0-5
6-3
6-7
6-14c

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 162 AND 124 TO FACILITY OPERATING
LICENSE NOS. NPF-39 AND NPF-85
EXELON GENERATION COMPANY, LLC
LIMERICK GENERATING STATION, UNITS 1 AND 2
DOCKET NOS. 50-352 AND 50-353

1.0 INTRODUCTION

By letter dated May 14, 2002, as supplemented by September 5, 2002, Exelon Generation Company, LLC (Exelon, the licensee), submitted a request for changes to the Limerick Generating Station (LGS), Units 1 and 2, Technical Specifications (TSs). The requested change would revise Surveillance Requirement (SR) 4.0.3 to extend the delay period, before entering a Limiting Condition for Operation (LCO), following a missed surveillance. The delay period would be extended from the current limit of "...up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours" to "...up to 24 hours or up to the limit of the specified Surveillance time interval, whichever is greater." The following requirement is added to SR 4.0.3: "A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed." In addition, a TS Bases Control Program is added to the LGS TSs.

Two administrative changes were proposed. The first deleted the position of "Sr. Manager - Operations" and replaced it using an overall statement referencing the American National Standards Institute (ANSI)/American Nuclear Society (ANS) Standard 3.1-1978 for "Operations Manager." The second administrative change revised the LGS TS requirement for the Plant Operations Review Committee (PORC) member composition replacing "Experience Assessment" with "Regulatory Assurance" to reflect Exelon's organizational changes. The supplement dated September 5, 2002, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on August 27, 2002 (67 FR 55041).

2.0 BACKGROUND

The licensee's proposal follows one of the industry's initiatives under the Risk-Informed TS Program. The licensee's application references Technical Specification Task Force (TSTF)-358, Revision 5, as modified by FR notice dated June 8, 2001, and published June 14, 2001 (66 FR 32400), "Notice of Opportunity To Comment on Model Safety Evaluation on Technical Specification Improvement To Modify Requirements Regarding Missed Surveillances Using the Consolidated Line Item Improvement Process (CLIIP)." The licensee stated in its application that it is proposing no variations or deviations from the TS changes in TSTF-358, Revision 5, or in the Nuclear Regulatory Commission (NRC) staff's model safety evaluation published in the FR on June 14, 2001, as modified by the comments and responses published

in the FR on September 28, 2001 (66 FR 49714), "Notice of Availability of Model Application Concerning Technical Specification Improvement To Modify Requirements Regarding Missed Surveillances Using The Consolidated Line Item Improvement Process."

In a letter dated November 17, 1999, the Nuclear Energy Institute's (NEI) TSTF proposed several changes to the improved Standard Technical Specifications (STS) (i.e., NUREGs 1430, 1431, 1432, 1433, and 1434) on behalf of the industry. One of the proposed changes, identified as TSTF-358, was a change to STS SR 3.0.3 regarding missed SRs. On February 14, 2000, the NRC staff requested that the NEI TSTF modify TSTF-358 to address several questions and comments that the NRC staff had during their initial review of the proposed change. On September 15, 2000, the NEI TSTF submitted Revision 5 to TSTF-358 for review. Revisions 2 through 4 were only reviewed by the industry and were never submitted to the NRC for review. In response to comments resulting from the request for public comments in the FR notice published June 14, 2001 (66 FR 32400), the NEI TSTF submitted Revision 6 to TSTF-358 for review on September 14, 2001, and it was approved by the NRC on October 1, 2001.

The safety evaluation (SE) contained herein, was published in the FR on June 14, 2001 (66 FR 32400). The NRC staff has since made minor editorial changes to the SE.

The regulations contained in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36, "Technical Specifications," require that TSs include SRs. SRs are requirements relating to test, calibration, or inspection to ensure 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 (LCOs) will be met. The TSs require surveillance tests to be performed periodically (e.g., weekly or monthly). The periodic test interval defined in the TSs is called the surveillance frequency or surveillance interval. The majority of surveillance tests included in the TSs are designed to ensure that standby safety systems will be operable when they are needed to mitigate an accident. By testing these components, failures that may have occurred since the previous test can be detected and corrected.

STS SR 3.0.1 states that SRs shall be met during the MODES or other specified conditions in the applicability for individual LCOs and that failure to perform a surveillance within the specified frequency shall be a failure to meet the LCO, except as provided in SR 3.0.3.

The current STS SR 3.0.3 requires that, if it is found that a surveillance test was not performed within its specified frequency, the associated LCO be declared not met (e.g., equipment be declared inoperable) unless the missed surveillance test is completed successfully within 24 hours or within the limit of the specified frequency, whichever is less, from the time it was discovered that the test was not performed. The requirements in STS SR 3.0.3 are based on NRC Generic Letter (GL) 87-09, "Sections 3.0 and 4.0 of the Standard Technical Specifications (STS) of the Applicability of Limiting Conditions for Operation and Surveillance Requirements," dated June 4, 1987.

GL 87-09 was published to address three specific issues with the application of TSs. One of those issues was missed surveillances. The GL states, "The second problem involves unnecessary shutdowns caused by Specification 4.0.3 when surveillance intervals are inadvertently exceeded. The solution is to clarify the applicability of the Action Requirements, to specify a specific acceptable time limit for completing a missed surveillance in certain circumstances, and to clarify when a missed surveillance constitutes a violation of the

Operability Requirements of an LCO. It is overly conservative to assume that systems or components are inoperable when a surveillance has not been performed because the vast majority of surveillances do in fact demonstrate that systems or components are OPERABLE. When a surveillance is missed, it is primarily a question of operability that has not been verified by the performance of a Surveillance Requirement. Because the allowable outage time limits of some Action Requirements do not provide an appropriate time for performing a missed surveillance before Shutdown Requirements apply, the TS[s] should include a time limit that allows a delay of required actions to permit the performance of the missed surveillance based on consideration of plant conditions, adequate planning, availability of personnel, the time required to perform the surveillance, and, of course, the safety significance of the delay in completing the surveillance. [emphasis added] The staff has concluded that 24 hours is an acceptable time limit for completing a missed surveillance when the allowable outage times of the Action Requirements are less than this limit, or when time is needed to obtain a temporary waiver¹ of the Surveillance Requirement.”

The proposed change would extend the delay time for declaring the LCO not met and entering the required actions by allowing more time to perform the missed surveillance test. This will be achieved by modifying STS SR 3.0.3 to allow a delay period from 24 hours up to the surveillance frequency, *whichever is greater*, to perform a missed surveillance prior to having to declare the LCO not met. The change will add a sentence to SR 3.0.3 that states, “A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.” The corresponding sections of the LGS TSs that would be modified are SR 4.0.1 and SR 4.0.3.

The objective of the proposed change is to minimize the impact on plant risk resulting from the performance of a missed surveillance test by allowing flexibility in considering the plant conditions and other plant activities without compromising plant safety. In addition, implementation of the proposed change would reduce the need for the licensee to apply for regulatory relief to delay the performance of missed surveillances.

The basis for establishing the changes to requirements for missed surveillances in GL 87-09 continues to apply to the current proposed change to LGS SR 4.0.3. As evidenced by the discussion in GL 87-09, the intent of the change proposed in the GL was to reduce the impact on plant risk resulting from the performance of a missed surveillance test by allowing some flexibility in the performance of missed tests. The delay time of 24 hours was selected using engineering judgement in the absence of suitable tools to determine a delay period on a case-by-case basis. In addition, the staff recognized in GL 87-09 that even a 24-hour delay period would not be sufficient in some cases and licensees would need to seek regulatory relief in those cases.

The recent revision to the Maintenance Rule to establish the requirement in 10 CFR 50.65(a)(4) to assess and manage the increase in risk that may result from maintenance activities provides a framework to allow a more risk-informed approach to addressing missed surveillances. This approach is consistent with the Commission’s policy to increase the use of probabilistic risk assessment (PRA) technology in all regulatory matters to the extent supported by the state-of-

¹The terminology “temporary waiver” was subsequently revised to refer to the practice as “enforcement discretion.”

the-art in PRA methods and data, and continues to support the objectives outlined by the staff in GL 87-09.

The NRC staff believes that the proposed change to LGS SR 4.0.3 is appropriate because: (1) the number of missed surveillance tests is a very small fraction of the total number of such tests performed at a nuclear plant each year; (2) the change applies to unintentionally missed surveillance tests, and is not intended to be used as an operational convenience to extend surveillance frequencies (as stated in the existing SR 4.0.3 Bases); and (3) missed surveillances will be placed in the licensee's corrective action program.

The NRC staff has determined that the proposed change is applicable to all licensees. In GL 87-09, the staff concluded that the proposed modifications would result in improved TSs for all plants and no limitations were put on the applicability of the proposed changes. Because the basis for this proposed change is largely the same as for the change proposed in GL 87-09, the staff believes the same broad applicability is appropriate. In addition, every licensee is required to comply with the Maintenance Rule and, therefore, will have implemented programs to comply with 10 CFR 50.65(a)(4) to assess and manage risk associated with maintenance and other operational activities.

3.0 EVALUATION OF SURVEILLANCE REQUIREMENTS

The proposed change would modify LGS SR 4.0.3 to allow a delay period from 24 hours up to the surveillance frequency, whichever is greater, to perform a missed surveillance prior to having to declare the LCO not met. The proposed change would add a sentence to SR 4.0.3 that states, "A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed."

The proposed change would not allow equipment known to be inoperable to be considered operable until the missed surveillance is performed. If it is known that the missed surveillance could not be met, SR 4.0.1 would require that the LCO be declared not met and the appropriate condition(s) entered. In addition, the Bases for SR 4.0.3 state that the use of the delay period established by SR 4.0.3 is a flexibility which is not intended to be used as an operational convenience to extend surveillance intervals, but only for the performance of missed surveillances.

The modification would also include changes to the Bases for SR 4.0.3 that provide details on how to implement the new requirements. The Bases changes provide guidance for surveillance frequencies that are not based on time intervals but are based on specified unit conditions, operating situations, or requirements of regulations. In addition, the Bases changes state that the licensee is expected to perform any missed surveillance test at the first reasonable opportunity, taking into account appropriate considerations, such as the impact on plant risk and accident analysis assumptions, consideration of unit conditions, planning, availability of personnel, and the time required to perform the surveillance. The Bases also state that the risk impact should be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance, NRC Regulatory Guide (RG) 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," dated May 2000, and that the missed surveillance should be treated as an emergent condition as discussed in RG 1.182. In addition, the Bases state that the degree of depth and rigor of the evaluation should be commensurate with the importance of the component and that missed surveillances for

important components should be analyzed quantitatively. The Bases also state that, if the results of the risk evaluation determine that the risk increase is significant, the evaluation should be used to determine the safest course of action. Finally, the Bases state that all missed surveillances will be placed in the licensee's Corrective Action Program (CAP).

The licensee has included in its application the addition of a Bases control program to the administrative section of the TSs. Originally, the control of TS Bases was not clearly defined by either the TSs or NRC regulations. The administrative requirements for a Bases control program were added to the STS to define a methodology for evaluating changes to and providing updates for the TS Bases. The addition of the TS Bases Control Program for plants that have not adopted the STS will provide the same benefits in terms of defining a methodology for the maintenance of the TS Bases. The licensee has proposed administrative controls that are consistent with the STS requirements and, therefore, satisfy the condition that was included in the FR notice for the use of CLIP for this TS change. The NRC staff finds the addition of the TS Bases Control Program acceptable.

Key elements provided by the licensee to justify the proposed TS change are listed below. These elements were built into the process to ensure that every time a surveillance is missed, the risk will be properly assessed and managed. In addition, such elements facilitate regulatory oversight.

- A risk evaluation shall be performed for any surveillance test delayed longer than 24 hours and the risk impact shall be managed.
- Although the proposed change to SR 4.0.3 allows an increase of the delay time, the missed surveillance test should be performed at the "first reasonable opportunity."
- The "first reasonable opportunity" will be determined by taking into consideration the risk impact from delaying the surveillance test (including risk from changing plant configurations or shutting the plant down to perform the surveillance, whenever applicable) as well as the impact on any analysis assumptions, in addition to unit conditions, planning, availability of personnel, and the time required to perform the surveillance.
- A missed surveillance will be treated as an emergent condition in the same fashion as other unplanned maintenance activities. The risk impact of the condition will be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance, RG 1.182.
- A missed surveillance will be placed in the licensee's CAP, thus providing the NRC staff with a means to verify that the number of missed surveillances continues to be very low.
- The NRC's operating reactor oversight process will provide the framework for inspectors and other NRC staff to review missed surveillances and assess the licensee's actions and performance.

The NRC staff finds that a process containing these key elements is appropriate in this case for the following reasons:

- The NRC requires by 10 CFR 50.65(a)(4) that licensees implement programs to assess and manage increases in risk that may result from planned maintenance activities. This program is suitable to assess and manage the risk impact of missed surveillances because missed surveillances can be treated as emergent conditions and their risk impact will be assessed and managed in an integrated fashion with concurrent maintenance activities.
- Inspection procedures are in place which will allow the NRC staff to oversee the implementation of Maintenance Rule requirements, including the adequacy of risk assessments performed by licensees for maintenance configurations.
- The number of missed surveillance tests is a very small fraction of the total number of such tests performed at a nuclear plant each year. The proposed change is not intended to be used as an operational convenience to extend surveillance frequencies.
- This process is similar to other improvements that have been made to the TSs that allow the use of a controlled decision making process by licensees when the process has some high-level regulatory oversight. Two examples of this are the adoption of the Core Operating Limits Report and the Pressure/Temperature Limits Report. In each of these cases, the NRC staff approved the methodology behind the calculation of certain TS parameter limits and then allowed the specific limits to be removed from the TSs and controlled by the licensee using the approved methodology. Similarly, for this proposed change, the NRC staff has already approved guidance that outlines a process for complying with 10 CFR 50.65(a)(4) and, therefore, can allow the licensee to use that guidance to determine the most prudent course of action in the case of a missed surveillance.

The guidance outlining an acceptable process for licensees to assess and manage increases in risk that may result from planned maintenance activities is found in RG 1.182. RG 1.182 endorses a revised Section 11 to NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2, dated February 22, 2000, updated by NEI.

Section 11 of NUMARC 93-01 provides guidance for assessing and managing risk impact resulting from performance of maintenance activities, including guidance for establishing action thresholds based on qualitative and quantitative considerations as well as risk management actions. The objective of risk management is to control the temporary and aggregate risk increases from maintenance activities such that the plant's average baseline risk is maintained within a minimal range. This is accomplished by using the results of the risk assessment to plan and schedule maintenance such that the risk increases are limited, and by taking additional actions beyond routine work controls to address situations where the temporary risk increase is above a certain threshold.

In order to gain additional insights into the proposed change, the NRC staff referred to the regulatory guidance provided in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,"

dated July 1998 and in RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specifications," dated August 1998, although these RGs do not specifically address the type of change in this proposal. RG 1.177 provides the NRC staff's recommendations for utilizing risk information to evaluate changes to nuclear power plant TSs by assessing the impact of such proposed changes on the risk associated with plant operation. The NRC staff considered the approach documented in RG 1.177 in evaluating the risk information provided in support of the proposed changes in SR 4.0.3 to increase the time allowed to perform a missed surveillance.

One portion of the guidance in RG 1.177 includes the assessment of the risk impact of the proposed change for comparison to acceptance guidelines consistent with the Commission's Safety Goal Policy Statement, as documented in RG 1.174. In addition, the approach outlined in the guidance aims at ensuring that the plant risk does not increase unacceptably at any time during the implementation of the proposed change (i.e., during the extended surveillance interval).

Another portion of the guidance addresses the need for identifying risk-significant configurations resulting from maintenance or other operational activities and taking appropriate compensatory measures to avoid such configurations. This type of evaluation is directly addressed by the requirement to perform a risk assessment for missed surveillances delayed longer than 24 hours.

The NRC staff believes that insights from the guidance provided in RGs 1.174 and 1.177 can be used to show how the proposed change is expected to result in, at most, an increase in risk which is small and consistent with the Commission's Safety Goal Policy Statement. The NRC staff believes that in the majority of the cases of missed surveillances, implementation of the proposed change will result in a risk benefit due to the proposed requirement for the licensee to evaluate the risk impact for missed surveillances that would require a delay of longer than 24 hours.

3.1 Risk Impact of the Proposed Change

The NRC staff made a qualitative assessment of the risk impact of the proposed change for comparison with the intent of the acceptance guidelines documented in RG 1.174, consistent with the Commission's Safety Goal Policy Statement. Such risk impact is measured by the average (yearly) risk change. In addition, the NRC staff took into consideration guidance in RG 1.177 aimed at ensuring that the plant risk does not increase unacceptably at any time during the implementation of the proposed change (i.e., during an extended surveillance interval in this case). The NRC staff's qualitative assessment is summarized below.

3.1.1 Average Risk Impact

The probability that a standby active component, such as a pump or a circuit breaker, will fail when demanded during an accident is based on the assumption that the component fails due to "standby" stresses (i.e., stresses which are present while the component is in standby, such as corrosion, dirt, lack of lubrication). This probability, also called the component's average "unavailability," is used in PRAs and is most frequently calculated by the following equation:

$$q = \frac{1}{2} * \lambda * T$$

where:

- q = the component's average unavailability,
- λ = the component's failure rate (assumed constant) while in standby, and
- T = the interval at which the component is tested for operability.

The average unavailability of a structure, system, or component (SSC), calculated by using the above equation, reflects the potential vulnerability of the component to "standby" stresses. Such vulnerability increases with time between operability checks (tests) assuming corrective action is taken to restore failed components identified by the test. Thus, the risk impact of a missed surveillance is reflected by the increased unavailability of the related SSCs due to the increase of the interval between surveillance tests. If the missed surveillance affects two or more components, some "standby" stresses may impact multiple components. In such a case, the missed surveillance would also increase the average common cause failure (CCF) unavailability of two or more components and this should be addressed in the risk assessment (CCF unavailabilities are calculated by adjusting the single component failure unavailability using standard PRA techniques, such as the beta factor or the Multiple Greek Letter method).

The thresholds of the aggregate risk impacts are based on the permanent change guidelines discussed in RG 1.174. The licensee must perform a risk evaluation for any surveillance delayed greater than 24 hours and the risk impact shall be managed, as stated in the proposed SR 4.0.3. The licensee stated in their application that the justifications presented in the TSTF proposal and the SE prepared by the NRC staff (66 FR 32400) are applicable to LGS. Therefore, the licensee has agreed to manage the risk from the proposed TS change in conjunction with the risk from other concurrent plant activities to ensure that any risk increase, in terms of Core Damage Frequency (CDF) and Large Early Release Frequency (LERF), will be small and consistent with the Commission's Safety Goal Policy Statement.

Risk insights from existing PRAs and the low frequency of missed surveillances indicate that the proposed TS change is highly unlikely to lead to a significant increase in the average (yearly) risk, in terms of CDF or LERF. Significant risk increases can occur only under the following conditions:

- The number of missed surveillances is allowed to increase significantly;
- High-risk configurations are allowed (e.g., by allowing certain combinations of multiple missed surveillances and/or outages); and
- Poor-risk management of plant operational activities is allowed.

Any of these conditions would be in violation of the intent of the proposed SR 4.0.3 and could trigger a review by the NRC of the licensee's actions and performance. The implementation guidance found in the proposed SR 4.0.3 Bases is intended to ensure that such conditions would not occur. Licensees are already required to manage risk associated with online maintenance activities per 10 CFR 50.65(a)(4). Insights from existing risk assessments indicate that there are plant conditions during which it is preferable and safer not to have to complete missed surveillance tests for some SSCs. The licensee committed in their application to implement the TS Bases change which is included with TSTF-358. This TS Bases change requires the licensee to enter all missed surveillances in the licensee's corrective action

program. The licensee also committed, as part of the TS Bases change, to manage the risk associated with missed surveillances using a similar process to that used to manage risk associated with online maintenance activities, treating the missed surveillance as an emergent condition as discussed in NRC Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." Therefore, the proposed TS change will allow the licensee to make informed decisions and take appropriate actions to control risk.

3.1.2 Temporary Risk Impact

In addition to changes in the mean values of CDF and LERF, the incremental conditional core damage probability and the incremental conditional large early release probability are proposed by RG 1.177 as appropriate measures of the increase in probability of core damage and large early release, respectively, during the period of implementation of a proposed TS change (i.e., during the extended surveillance period in the case of a missed surveillance). RG 1.182 provides guidance for controlling temporary risk increases resulting from maintenance activities. Such guidance, which is consistent with guidance provided in RG 1.177, establishes action thresholds based on qualitative and quantitative considerations as well as risk management actions. The NRC staff expects that the licensee will implement this guidance for assessing temporary risk increases from missed surveillances concurrently with maintenance and other operational activities.

Instantaneous and temporary risk increases from a missed surveillance are assessed by considering the time-dependent unavailability, most often calculated by the following equation.

$$q(t) = \lambda * t$$

where:

$q(t)$ = the component's unavailability at time t
 λ = the component's failure rate (assumed constant) while in standby, and
 t = time from end of surveillance frequency of a missed surveillance test.

If the missed surveillance affects two or more components, some "standby" stresses may impact multiple components. In such a case, the missed surveillance would increase also the time-dependent CCF unavailability of two or more components and this should be addressed in the risk assessment.

Significant temporary risk increases following a missed surveillance can occur only under the following conditions:

- High-risk configurations are allowed (e.g., by allowing certain combinations of multiple missed surveillances and/or outages), and
- Poor-risk management of plant operation activities is allowed.

Any of these conditions would be in violation of the intent of the proposed SR 4.0.3 and could trigger an NRC review of the licensee's actions and performance. The requirements associated with the proposed change are intended to ensure that such conditions would not occur. Thus, the proposed TS change is not expected to lead to significant temporary risk increases. Following the discovery of an unintentionally missed surveillance, the licensee will have to

assess temporary risk increases, qualitatively or quantitatively depending on the importance of the component affected by the missed surveillance, if the surveillance cannot be performed within 24 hours from the time it has been discovered.

3.2 Risk-Informed Configuration Risk Management

RG 1.177 addressed the need for identifying risk-significant configurations resulting from maintenance or other operational activities and taking appropriate compensatory measures to avoid such configurations. The objective of such guidance for this review is to ensure that plant safety will be maintained and monitored during the period of an extended surveillance testing interval (associated with an unintentionally missed surveillance). The licensee proposes to use the program in place to implement the Maintenance Rule to identify “high-risk” configurations resulting from missed surveillance tests in conjunction with outages associated with maintenance activities. It is worth noting that the guidance provided in RG 1.177 with regard to the Configuration Risk Management Program was used as the basis for developing the guidance contained in RG 1.182 for the 10 CFR 50.65(a)(4) provisions of the Maintenance Rule. This provides additional assurance that the proposed process for evaluating the risk impact of missed surveillances is consistent with guidance provided in RG 1.177.

3.3 Quality of PRA

Once a missed surveillance is discovered and the licensee determines that the surveillance cannot be performed within 24 hours, the licensee will have to use a risk assessment to determine the most prudent course of action. The risk assessment can be done qualitatively or quantitatively depending on the importance of the component affected by the missed surveillance (missed surveillances for risk important components should be analyzed quantitatively). Such a risk assessment will be consistent with the program to implement the Maintenance Rule guidance to assess and account for both aggregate and temporary risk increases associated with “emergent” plant conditions as well as before undertaking online maintenance or other operational activities.

All licensees must have the capability to assess and manage increases in risk from maintenance activities as required by the Maintenance Rule. Risk assessments performed pursuant to 10 CFR 50.65(a)(4) may use qualitative, quantitative, or blended methods. The degree of depth and rigor of the evaluation should be commensurate with the complexity of the proposed configuration to be assessed. Section 11 of NUMARC 93-01 provides guidance for using qualitative, quantitative, or blended methods to assess risk. Current inspection programs allow the NRC staff to oversee licensee implementation of 10 CFR 50.65(a)(4) requirements, including the adequacy of pre-maintenance risk assessments performed by licensees.

For the reasons listed below, the NRC staff finds that the same “quality” of PRA or PRA insights used to perform risk assessments pursuant to 10 CFR 50.65(a)(4) is also appropriate when assessing the impact of missed surveillances.

- The number of “emergent” conditions resulting from missed surveillances is very small (in both absolute terms and in comparison to the frequency of “emergent” conditions resulting from equipment failures). The licensee stated in their application that the justifications presented in the TSTF proposal and the SE prepared by the NRC staff

(66 FR 32400) are applicable to LGS. Therefore, the licensee agrees that the statement above is valid for LGS.

- A missed surveillance is equivalent to a one-time surveillance frequency extension. Therefore, the risk exposure is limited to the duration of the surveillance frequency extension. Risk increases are small compared to similar increases associated with equipment failures. The average (conditional) risk increase, given a missed surveillance, may be comparable to the risk increase from equipment failures. However, due to the rarity of missed surveillances, the average (yearly) risk increase from missed surveillances is expected to be small compared to the risk increase from equipment failures.
- PRA insights indicate that the risk impact from missed surveillances is significant only for a relatively small set of standby equipment. This equipment, such as auxiliary feedwater, high pressure injection pumps, and emergency diesel generators, is located outside containment and generally can be easily tested in a short time, if necessary.
- NRC inspection programs allow NRC staff to oversee the implementation of 10 CFR 50.65(a)(4) requirements, including the adequacy of pre-maintenance risk assessments performed by licensees.

3.4 Summary

The NRC staff review finds that the process proposed by the licensee for addressing missed SRs meets Commission guidance for allowing TS changes. Key elements of the proposed change are listed below:

- A risk evaluation shall be performed for any surveillance delayed longer than 24 hours, and the risk impact shall be managed.
- The missed surveillance test should be performed at “the first reasonable opportunity.”
- The “first reasonable opportunity” will be determined by taking into consideration the risk impact from delaying the surveillance test as well as the impact on any analysis assumptions, in addition to unit conditions, planning, availability of personnel, and the time required to perform the surveillance.
- A missed surveillance will be treated as an “emergent” condition in the same fashion as other unplanned maintenance activities. The risk impact of the condition will be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance (NRC RG 1.182). Rescheduling of missed surveillances pursuant to RG 1.182 will ensure the necessary provisions for managing the risk impact of performing the surveillance in conjunction with other ongoing plant configuration changes.
- The NRC’s operating reactor oversight process will provide the framework for inspectors and other NRC staff to review missed surveillances and assess the licensee’s actions and performance. Inspection procedures are in place which will allow NRC staff to

oversee the implementation of Maintenance Rule requirements, including the adequacy of pre-maintenance risk assessments performed by licensees.

- A missed surveillance will be placed in the licensee's corrective action program, thus providing the NRC staff with a means to verify that the number of missed surveillances continues to be very low.
- The number of missed surveillance tests is a very small fraction of the total number of such tests performed at a nuclear plant each year. The proposed change is not intended to be used as an operational convenience to extend surveillance frequencies.
- This process is similar to other improvements that have been made to the TSs that allow the use of a controlled decision-making process by licensees when the process has some high-level regulatory oversight. Two examples of this are the adoption of the Core Operating Limits Report and the Pressure/Temperature Limits Report. In each of these cases, the NRC staff approved the methodology behind the calculation of certain TS parameter limits and then allowed the specific limits to be removed from the TSs and controlled by the licensee using the approved methodology. Similarly, for this proposed change, the NRC staff has already approved guidance that outlines a process for complying with 10 CFR 50.65(a)(4) and, therefore, can allow the licensee to use that guidance to determine the most prudent course of action in the case of a missed surveillance.

The licensee stated in their application that the justifications presented in the TSTF proposal and the SE prepared by the NRC staff (66 FR 32400) are applicable to LGS. The licensee did not propose any variations or deviations from the TS change described in TSTF-358 or in the model SE (66 FR 32400). The licensee controls their regulatory commitments in accordance with the guidance document, NEI 99-04, "Guidelines for Managing NRC Commitment Changes." The NRC staff finds NEI 99-04 an acceptable method for controlling regulatory commitments. The LGS TSs contain a TS Bases Control Program (TS 5.5.10), which the NRC staff finds to be an acceptable method for controlling changes to the TS Bases. For these reasons, the NRC staff finds the proposed TS change, to be implemented in accordance with the above listed key elements, acceptable.

Since the Bases are not a part of the TSs, the NRC staff reviewed the Bases change only to ensure consistency with the proposed TS change. The NRC staff is not approving the Bases change, but is including the revised Bases pages for completeness.

4.0 ASSESSMENT OF ADMINISTRATIVE CHANGES

TS Section 6.2.2, "Unit Staff," Specification 6.2.2.g. identifies which manager in the operations department shall hold a senior reactor operator license. It is being revised to replace the position title of "Sr. Manager - Operations" by use of a statement describing the operations manager position as defined in ANSI/ANS-3.1-1978.

TS Section 6.5.1.2, "Composition," is being revised to replace "Experience Assessment" with "Regulatory Assurance" as a required area of experience for one or more members of the PORC. The licensee stated that their Experience Assessment Group has been renamed the Regulatory Assurance Group, and that the Regulatory Assurance Group is the site owner for

the Corrective Action Process (CAP), the self assessment process, the PORC process, the commitment tracking process, the operating experience process, and support of NRC inspections and issue closure. The licensee stated there is no reduction in PORC member qualification requirements due to this change.

TS Sections 6.2.2. and 6.5.1.2., contain organizational title changes that are administrative in nature and reflect a streamlining of the licensee's management structure. This revision does not affect the intent or application of the original TSs. The proposed changes are considered administrative in nature since there are no changes in the function, operation, or physical configuration of the plant. The administrative changes do not represent a reduction in safety and are intended to maintain consistency and clarity of the TSs. Therefore, the proposed administrative changes to the TSs do not involve a significant hazards consideration and the NRC staff finds the proposed changes acceptable.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, and changed a surveillance requirement. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (67 FR 55041). This amendment also relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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