

RS-11-123

10 CFR 50.90

August 15, 2011

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

LaSalle County Station, Units 1 and 2  
Facility Operating License Nos. NPF-11 and NPF-18  
NRC Docket Nos. 50-373 and 50-374

Subject: Supplemental Information Related to License Amendment Request for Adoption of Technical Specifications Task Force (TSTF) Traveler TSTF-514, Revision 3, "Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation"

Reference: Letter from J. L. Hansen (Exelon Generation Company, LLC (EGC)) to U. S. NRC, "License Amendment Request for Adoption of Technical Specifications Task Force (TSTF) Traveler TSTF-514, Revision 3, 'Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation,'" dated April 4, 2011

In the referenced letter, Exelon Generation Company, LLC (EGC) requested an amendment to the Technical Specifications (TS) of Facility Operating License Nos. NPF-11 and NPF-18 for LaSalle County Station, Units 1 and 2 (LSCS).

The referenced license amendment request proposed a revision the LSCS TS to define a new time limit for restoring inoperable Reactor Coolant System (RCS) leakage detection instrumentation to operable status; established alternate methods of monitoring RCS leakage when one or more required monitors are inoperable; and made TS Bases changes which reflect the proposed changes and more accurately reflect the contents of the facility design basis related to operability of the RCS leakage detection instrumentation. The proposed changes were consistent with NRC-approved Revision 3 to TSTF Improved Standard Technical Specification (STS) Change Traveler TSTF-514, "Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation."

Upon further review of the referenced license amendment request, it became clear that the proposed changes to TS 3.4.7 and TS Bases B 3.4.7 verbiage require administrative revisions to provide consistency with current TS and TS Bases. Specifically, EGC would like to substitute primary containment in the referenced letter with drywell, and substitute drywell floor drain sump monitoring system with drywell floor drain sump flow monitoring system. These revisions ensure that the intent of the TS and TS Bases is clear. Markups of the TS and TS Bases inserts provided in the referenced letter are included in Attachment 1 of this submittal. Attachments 2 and 3 of this submittal provide revised TS and TS Bases inserts that align more closely with

current TS and TS Bases, respectively. Please replace the TS and TS Bases inserts in Attachments 2 and 3 of the referenced letter with the revised inserts provided in Attachments 2 and 3 of this submittal. Additionally, the clean TS pages provided in Attachment 4 to this submittal supersede those provided in Attachment 4 of the referenced license amendment request.

This submittal is subdivided as follows:

- Attachment 1 provides markups showing the revisions to the New TS 3.4.7 Condition D TS Insert and TS Bases Insert Nos. 1 and 2 provided in Attachments 2 and 3 of the referenced license amendment request, respectively.
- Attachment 2 provides the revised TS Section 3.4.7 New Condition D TS insert which supersedes the New Condition D TS insert provided in Attachment 2 of the referenced license amendment request.
- Attachment 3 provides the revised TS Bases Section B 3.4.7 inserts which supersede the TS Bases inserts provided in Attachment 3 of the referenced license amendment request.
- Attachment 4 provides revised (clean) TS pages which should be used to supersede those provided in Attachment 4 of the referenced license amendment request.

The information provided in this letter does not affect the No Significant Hazards Consideration, or the Environmental Consideration provided in Attachment 1 of the original license amendment request as described in the Reference 1 submittal.

In accordance with 10 CFR 50.91(b), "State consultation," EGC is providing the State of Illinois with a copy of this letter and its attachments to the designated State Official.

This letter contains no new regulatory commitments. If you have any questions concerning this letter, please contact Mr. Mitchel A. Mathews at (630) 657-2819.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 15th day of August, 2011.

Respectfully,



David M. Gullott  
Manager – Licensing

- Attachment 1: Markups showing Revisions to the Technical Specifications (TS) and TS Bases Inserts provided in the April 4, 2011 License Amendment Request  
Attachment 2: Revised New Technical Specifications (TS) 3.4.7 New Condition D Insert  
Attachment 3: Revised TS Bases Section B 3.4.7 Inserts  
Attachment 4: Revised Clean TS Pages

cc: Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT 1

LASALLE COUNTY STATION  
UNITS 1 AND 2

Docket Nos. 50-373 and 50-374

License Nos. NPF-11 and NPF-18

Markups showing Revisions to the Technical Specifications (TS) and TS Bases Inserts provided  
in the April 4, 2011 License Amendment Request

Markup of Submitted New TS 3.4.7 Condition D  
Markup of Submitted TS B 4.4.7 TS Bases Insert No. 1  
Markup of Submitted TS B 3.4.7 TS Bases Insert No. 2

Markup of Submitted New TS 3.4.7 Condition D

-----NOTE----- Only applicable when the primary containment atmospheric gaseous radiation monitor is the only OPERABLE monitor. -----			
<div>D. Drywell floor drain sump monitoring system inoperable</div> <div>AND</div> <div>Drywell air cooler condensate flow rate monitoring system inoperable.</div>	D.1	Analyze grab samples of the primary containment atmosphere.	Once per 12 hours
	AND		
	D.2	Monitor RCS LEAKAGE by administrative means.	Once per 12 hours
	AND		
	D.3.1	Restore drywell floor drain sump monitoring system to OPERABLE status.	7 days
	OR		
	D.3.2	Restore drywell air cooler condensate flow rate monitoring system to OPERABLE status.	7 days

### Markup of Submitted TS B 3.4.7 TS Bases Insert No. 1

This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide confidence that small amounts of unidentified LEAKAGE are detected in time to allow actions to place the plant in a safe condition, when RCS LEAKAGE indicates possible RCPB degradation.

The LCO requires three instruments to be OPERABLE.

flow The drywell floor drain sump monitoring system is required to quantify the unidentified LEAKAGE rate from the RCS. Thus, for the system to be considered OPERABLE, either the flow monitoring or the sump level monitoring portion of the system must be OPERABLE and capable of determining the leakage rate. The identification of an increase in unidentified LEAKAGE will be delayed by the time required for the unidentified LEAKAGE to travel to the drywell floor drain sump and it may take longer than one hour to detect a 1 gpm increase in unidentified LEAKAGE, depending on the origin and magnitude of the LEAKAGE. This sensitivity is acceptable for containment sump monitor OPERABILITY.

drywell The reactor coolant contains radioactivity that, when released to the drywell primary containment, can be detected by the gaseous or particulate drywell primary containment atmospheric radioactivity monitor. Only one of the two detectors is required to be OPERABLE. Radioactivity detection systems are included for monitoring both particulate and gaseous activities because of their sensitivities and rapid responses to RCS LEAKAGE, but have recognized limitations. Reactor coolant radioactivity levels will be low during initial reactor startup and for a few weeks thereafter, until activated corrosion products have been formed and fission products appear from fuel element cladding contamination or cladding defects. If there are few fuel element cladding defects and low levels of activation products, it may not be possible for the gaseous or particulate drywell primary containment atmospheric radioactivity monitors to detect a 1 gpm increase within 1 hour during normal drywell operation. However, the drywell gaseous or particulate drywell containment primary atmospheric radioactivity monitor is OPERABLE when it is capable of detecting a 1 gpm increase in unidentified LEAKAGE within 1 hour given an RCS activity equivalent to that assumed in the design calculations for the monitors (Reference 6).

An increase in humidity of the drywell atmosphere could indicate the release of water vapor to the drywell. Drywell air cooler condensate flow rate is instrumented to detect when there is an increase above the normal value by 1 gpm. The time required to detect a 1 gpm increase above the normal value varies based on environmental and system conditions and may take longer than 1 hour. This sensitivity is acceptable for drywell air cooler condensate flow rate monitor OPERABILITY.

flow The LCO is satisfied when monitors of diverse measurement means are available. Thus, the drywell floor drain sump monitoring system, in combination with a gaseous or particulate drywell primary containment atmospheric radioactivity monitor and a drywell containment air cooler condensate flow rate monitoring system, provides an acceptable minimum.

the

## Markup of Submitted TS B 3.4.7 TS Bases Insert No. 2

### D.1, D.2, D.3.1, and D.3.2

With the drywell floor drain sump monitoring system and the drywell air cooler condensate flow rate monitoring system inoperable, the only means of detecting LEAKAGE is the primary containment atmospheric gaseous radiation monitor. A Note clarifies this applicability of the Condition. The primary containment atmospheric gaseous radiation monitor typically cannot detect a 1 gpm leak within one hour when RCS activity is low. In addition, this configuration does not provide the required diverse means of leakage detection. Indirect methods of monitoring RCS leakage must be implemented. Grab samples of the primary containment atmosphere must be taken and analyzed and monitoring of RCS leakage by administrative means must be performed every 12 hours to provide alternate periodic information.

Administrative means of monitoring RCS leakage include monitoring and trending parameters that may indicate an increase in RCS leakage. There are diverse alternative mechanisms from which appropriate indicators may be selected based on plant conditions. It is not necessary to utilize all of these methods, but a method or methods should be selected considering the current plant conditions and historical or expected sources of unidentified leakage. The administrative methods are drywell floor drain sump measurement, drywell equipment drain sump, drywell cooler drain flow, drywell pressure, drywell temperature, drywell air sampling, reactor vessel head closure seal annulus pressure, reactor water recirculation pump seal flow rate, safety/relief valve discharge piping temperature, valve packing leakage, component cooling water system outlet temperatures, component cooling water system makeup, reactor recirculation system pump seal pressure and temperature, reactor recirculation system pump motor cooler temperatures, drywell cooling fan outlet temperatures, reactor building chiller amperage, and control rod drive system flange temperatures. These indications, coupled with the atmospheric grab samples, are sufficient to alert the operating staff to an unexpected increase in unidentified LEAKAGE.

The 12 hour interval is sufficient to detect increasing RCS leakage. The Required Action provides 7 days to restore another RCS leakage monitor to OPERABLE status to regain the intended leakage detection diversity. The 7 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.

ATTACHMENT 2

LASALLE COUNTY STATION  
UNITS 1 AND 2

Docket Nos. 50-373 and 50-374

License Nos. NPF-11 and NPF-18

Revised Technical Specifications Section 3.4.7 New Condition D Insert

**Revised Technical Specifications Section 3.4.7 New Condition D Insert**

<p>-----NOTE-----  Only applicable when the  drywell atmospheric  gaseous radiation monitor  is the only OPERABLE  monitor.  -----</p>	<p>D.1      Analyze grab samples  of the drywell  atmosphere.</p>	<p>Once per  12 hours</p>
	<p><u>AND</u></p>	
<p>D.    Drywell floor drain  sump flow monitoring  system inoperable.</p>	<p>D.2      Monitor RCS LEAKAGE  by administrative  means.</p>	<p>Once per  12 hours</p>
	<p><u>AND</u></p>	
<p><u>AND</u></p>	<p>D.3.1    Restore drywell floor  drain sump flow  monitoring system to  OPERABLE status.</p>	<p>7 days</p>
<p>Drywell air cooler  condensate flow rate  monitoring system  inoperable.</p>	<p><u>OR</u></p>	
	<p>D.3.2    Restore drywell air  cooler condensate  flow rate monitoring  system to OPERABLE  status.</p>	<p>7 days</p>



ATTACHMENT 3

LASALLE COUNTY STATION  
UNITS 1 AND 2

Docket Nos. 50-373 and 50-374

License Nos. NPF-11 and NPF-18

Revised Technical Specification (TS) Bases Section B 3.4.7 Inserts

REVISED TS BASES INSERTS

Revised TS Bases Insert No. 1

Revised TS Bases Insert No. 2

## **Revised TS Bases Insert No. 1**

This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide confidence that small amounts of unidentified LEAKAGE are detected in time to allow actions to place the plant in a safe condition, when RCS LEAKAGE indicates possible RCPB degradation.

The LCO requires three instruments to be OPERABLE.

The drywell floor drain sump flow monitoring system is required to quantify the unidentified LEAKAGE rate from the RCS. Thus, for the system to be considered OPERABLE, either the flow monitoring or the sump level monitoring portion of the system must be OPERABLE and capable of determining the leakage rate. The identification of an increase in unidentified LEAKAGE will be delayed by the time required for the unidentified LEAKAGE to travel to the drywell floor drain sump and it may take longer than one hour to detect a 1 gpm increase in unidentified LEAKAGE, depending on the origin and magnitude of the LEAKAGE. This sensitivity is acceptable for containment sump monitor OPERABILITY.

The reactor coolant contains radioactivity that, when released to the drywell, can be detected by the gaseous or particulate drywell atmospheric radioactivity monitor. Only one of the two detectors is required to be OPERABLE. Radioactivity detection systems are included for monitoring both particulate and gaseous activities because of their sensitivities and rapid responses to RCS LEAKAGE, but have recognized limitations. Reactor coolant radioactivity levels will be low during initial reactor startup and for a few weeks thereafter, until activated corrosion products have been formed and fission products appear from fuel element cladding contamination or cladding defects. If there are few fuel element cladding defects and low levels of activation products, it may not be possible for the drywell gaseous or particulate atmospheric radioactivity monitors to detect a 1 gpm increase within 1 hour during normal operation. However, the drywell gaseous or particulate atmospheric radioactivity monitor is OPERABLE when it is capable of detecting a 1 gpm increase in unidentified LEAKAGE within 1 hour given an RCS activity equivalent to that assumed in the design calculations for the monitors (Reference 6).

An increase in humidity of the drywell atmosphere could indicate the release of water vapor to the drywell. Drywell air cooler condensate flow rate is instrumented to detect when there is an increase above the normal value by 1 gpm. The time required to detect a 1 gpm increase above the normal value varies based on environmental and system conditions and may take longer than 1 hour. This sensitivity is acceptable for drywell air cooler condensate flow rate monitor OPERABILITY.

The LCO is satisfied when monitors of diverse measurement means are available. Thus, the drywell floor drain sump flow monitoring system, in combination with a drywell gaseous or particulate atmospheric radioactivity monitor and the drywell air cooler condensate flow rate monitoring system, provides an acceptable minimum.

## **Revised TS Bases Insert No. 2**

### **D.1, D.2, D.3.1, and D.3.2**

With the drywell floor drain sump flow monitoring system and the drywell air cooler condensate flow rate monitoring system inoperable, the only means of detecting LEAKAGE is the drywell atmospheric gaseous radiation monitor. A Note clarifies this applicability of the Condition. The drywell atmospheric gaseous radiation monitor typically cannot detect a 1 gpm leak within one hour when RCS activity is low. In addition, this configuration does not provide the required diverse means of leakage detection. Indirect methods of monitoring RCS leakage must be implemented. Grab samples of the drywell atmosphere must be taken and analyzed and monitoring of RCS leakage by administrative means must be performed every 12 hours to provide alternate periodic information.

Administrative means of monitoring RCS leakage include monitoring and trending parameters that may indicate an increase in RCS leakage. There are diverse alternative mechanisms from which appropriate indicators may be selected based on plant conditions. It is not necessary to utilize all of these methods, but a method or methods should be selected considering the current plant conditions and historical or expected sources of unidentified leakage. The administrative methods are drywell floor drain sump flow measurement, drywell equipment drain sump, drywell cooler drain flow, drywell pressure, drywell temperature, drywell air sampling, reactor vessel head closure seal annulus pressure, reactor water recirculation pump seal flow rate, safety/relief valve discharge piping temperature, valve packing leakage, component cooling water system outlet temperatures, component cooling water system makeup, reactor recirculation system pump seal pressure and temperature, reactor recirculation system pump motor cooler temperatures, drywell cooling fan outlet temperatures, reactor building chiller amperage, and control rod drive system flange temperatures. These indications, coupled with the drywell atmospheric grab samples, are sufficient to alert the operating staff to an unexpected increase in unidentified LEAKAGE.

The 12 hour interval is sufficient to detect increasing RCS leakage. The Required Action provides 7 days to restore another RCS leakage monitor to OPERABLE status to regain the intended leakage detection diversity. The 7 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.

ATTACHMENT 4

LASALLE COUNTY STATION

UNITS 1 AND 2

Docket Nos. 50-373 and 50-374

License Nos. NPF-11 and NPF-18

Revised Technical Specifications (TS) (Clean) Pages

REVISED TS PAGES

3.4.7-2

3.4.7-3

3.4.7-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Drywell air cooler condensate flow rate monitoring system inoperable.	<p>-----NOTE----- Not applicable when the required drywell atmospheric monitoring system is inoperable. -----</p> <p>C.1 Perform SR 3.4.7.1.</p>	Once per 8 hours
<p>-----NOTE----- Only applicable when the drywell atmospheric gaseous radiation monitor is the only OPERABLE monitor. -----</p> <p>D. Drywell floor drain sump flow monitoring system inoperable.</p> <p><u>AND</u></p> <p>Drywell air cooler condensate flow rate monitoring system inoperable.</p>	<p>D.1 Analyze grab samples of the drywell atmosphere.</p> <p><u>AND</u></p> <p>D.2 Monitor RCS LEAKAGE by administrative means.</p> <p><u>AND</u></p> <p>D.3.1 Restore drywell floor drain sump flow monitoring system to OPERABLE status.</p> <p><u>OR</u></p> <p>D.3.2 Restore drywell air cooler condensate flow rate monitoring system to OPERABLE status.</p>	<p>Once per 12 hours</p> <p>Once per 12 hours</p> <p>7 days</p> <p>7 days</p>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required drywell atmospheric monitoring system inoperable.  <u>AND</u>  Drywell air cooler condensate flow rate monitoring system inoperable.	E.1 Restore required drywell atmospheric monitoring system to OPERABLE status.	30 days
	<u>OR</u>  E.2 Restore drywell air cooler condensate flow rate monitoring system to OPERABLE status.	30 days
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3.	12 hours
	<u>AND</u>  F.2 Be in MODE 4.	36 hours
G. All required leakage detection systems inoperable.	G.1 Enter LCO 3.0.3.	Immediately

## SURVEILLANCE REQUIREMENTS

-----NOTE-----  
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other required leakage detection instrumentation is OPERABLE.  
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SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Perform CHANNEL CHECK of required drywell atmospheric monitoring system.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.2	Perform CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.3	Perform CHANNEL CALIBRATION of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program