Southern Nuclear

B. H. Whitley
Director
Regulatory Affairs

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Birmingham, AL 35242
Tel 205.992.7079
Fax 205.992.5296

August 31, 2017

Docket Nos.: 52-025
52-026

ND-17-1470
10 CFR 50.90

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Request for License Amendment:
Leakage Detection Instrumentation Operability (LAR-17-029)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) requests an amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Numbers NPF-91 and NPF-92, respectively). The requested amendment proposes to depart from approved COL Appendix A, Technical Specifications.

The requested amendment proposes changes to provide for adequate detection of reactor coolant system (RCS) and main steam line leakage at all times and incorporate consideration for instrument sensitivities not accounted for in the Applicability of Technical Specification 3.4.9.

Enclosure 1 provides the description, technical evaluation, regulatory evaluation (including the Significant Hazards Consideration Determination) and environmental considerations for the proposed changes.

Enclosure 2 identifies the requested changes and provides markups depicting the requested changes to the VEGP Units 3 and 4 licensing basis documents.

Enclosure 3 provides conforming Technical Specification Bases changes for information only.

This letter contains no regulatory commitments. This letter has been reviewed and determined not to contain security related information.

SNC requests NRC staff approval of the license amendment by March 30, 2018, to support Operator training updates. Delayed approval of this license amendment could result in a delay in Operator training updates. SNC expects to implement this proposed amendment within 30 days of approval of the requested changes.

In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this LAR by transmitting a copy of this letter and its enclosures to the designated State Official.

Should you have any questions, please contact Mr. Ryan Henderson at (205) 992-6426.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 31st of August 2017.

Respectfully submitted,

Brian H. Whitley
Director, Regulatory Affairs
Southern Nuclear Operating Company

Enclosures
1) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment Regarding Leakage Detection Instrumentation Operability (LAR-17-029)
2) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to Licensing Basis Documents (LAR-17-029)
3) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Conforming Technical Specification Bases Changes (For Information Only) (LAR-17-029)

cc:

Southern Nuclear Operating Company / Georgia Power Company
Mr. S. E. Kuczynski (w/o enclosures)
Mr. M. D. Rauckhorst
Mr. D. G. Bost (w/o enclosures)
Mr. M. D. Meier (w/o enclosures)
Mr. D. H. Jones (w/o enclosures)
Mr. D. L. McKinney (w/o enclosures)
Mr. T. W. Yelverton (w/o enclosures)
Mr. B. H. Whitley
Mr. J. J. Hutto
Mr. C. R. Pierce
Ms. A. G. Aughtman
Mr. D. L. Fulton
Mr. M. J. Yox
Mr. E. W. Rasmussen
Mr. J. Tupik
Mr. W. A. Sparkman
Ms. A. C. Chamberlain
Mr. M. K. Washington
Ms. A. L. Pugh
Mr. J. D. Williams
Document Services RTYPE: VND.LI.L00
File AR.01.02.06

Nuclear Regulatory Commission
Mr. W. Jones (w/o enclosures)
Ms. J. Dixon-Herrity
Mr. C. Patel
Ms. J. M. Heisserer
Mr. B. Kemker
Mr. G. Khouri
Ms. S. Temple
Ms. V. Ordaz
Mr. T.E. Chandler
Ms. P. Braxton
Mr. T. Brimfield
Mr. C. J. Even
Mr. A. Lerch

State of Georgia
Mr. R. Dunn

Oglethorpe Power Corporation
Mr. M. W. Price
Mr. K. T. Haynes
Ms. A. Whaley

Municipal Electric Authority of Georgia
Mr. J. E. Fuller
Mr. S. M. Jackson

Dalton Utilities
Mr. T. Bundros

Westinghouse Electric Company, LLC
Mr. R. Easterling (w/o enclosures)
Mr. G. Koucheravy (w/o enclosures)
Mr. P. A. Russ
Mr. M. L. Clyde
Ms. K. Chesko
Mr. D. Hawkins

Other
Mr. S. W. Kline, Bechtel Power Corporation
Ms. L. A. Matis, Tetra Tech NUS, Inc.
Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc.
Mr. S. Roetger, Georgia Public Service Commission
Ms. S. W. Kernizan, Georgia Public Service Commission
Mr. K. C. Greene, Troutman Sanders
Mr. S. Blanton, Balch Bingham
Mr. R. Grumbir, APOG
NDDocumentinBox@duke-energy.com, Duke Energy
Mr. S. Franzone, Florida Power & Light

Southern Nuclear Operating Company

ND-17-1470

Enclosure 1

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Request for License Amendment Regarding

Leakage Detection Instrumentation Operability

(LAR-17-029)

(This Enclosure consists of 19 pages, including this cover page)

Table of Contents

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) hereby requests an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively.

1. SUMMARY DESCRIPTION

This activity addresses the language in Technical Specification 3.4.9 Applicability Notes and language in the Technical Specification 3.4.9 Applicability Bases that describe normal plant evolutions which could render the data from the instrumentation required by Limiting Condition for Operation (LCO) 3.4.9 to be "not valid."

Note 1 of Technical Specification 3.4.9 states that the containment atmosphere F18 particulate monitor is not required to be OPERABLE when reactor power is less than 20 percent rated thermal power. Note 2 of Technical Specification 3.4.9 states that the containment sump level measurements cannot be used for leak detection if leakage is prevented from draining to the containment sump, such as by redirection to the in-containment refueling water storage tank (IRWST) by the containment shell gutter drains. If condensate is prevented from draining to the containment sump by the IRWST gutter drain isolation valves, the two containment sump level channels would be inoperable and Condition B of Technical Specification 3.4.9 would be entered. It is possible that the two conditions in Note 1 and Note 2 could occur concurrently. If condensate is prevented from draining to the containment sump concurrent with reactor thermal power less than 20 percent rated thermal power, the inoperability of the two required containment sump level channels would also mean that all instrumentation required by Technical Specification 3.4.9 is inoperable. Therefore, if condensate is redirected to the IRWST while the containment atmosphere F18 particulate monitor is not required to be OPERABLE, condition E (enter LCO 3.0.3, immediately) would be entered.

In addition, the current Technical Specification 3.4.9 Applicability Bases state that the containment sump level change and containment atmosphere F18 particulate radioactivity methods are not valid while containment purge occurs or for 2 hours after the end of the containment purge. However, Technical Specification LCO 3.4.9 does not exclude any of the required instruments from having OPERABILITY during a containment purge. Therefore, during a containment purge, all of the required leak detection instrumentation would be declared inoperable, which would require entry into Condition E. Entry into LCO 3.0.3 for an operation not associated with an abnormal operating condition is undesirable. New Applicability Notes are proposed for Technical Specification 3.4.9 to address the conditions discussed.

Additionally, Required Action A.1 of Technical Specification 3.4.9 specifies performing a containment sump input calculation every 24 hours to identify whether there has been a 10 gallon change in the volume input to the containment sump (which equates to a change of 0.007 gallons per minute into the sump over 24 hours). This Action was intended to give operators confidence that the remaining required containment sump level channel is operating properly. However, a change in the volume input to the sump is not a definitive indicator of instrument inoperability because changes in sump input are anticipated during normal operation. The prescribed Action is ambiguous, and could require entry into Condition D (and corresponding plant shutdown) for an actual increase or decrease in the input to the containment sump. A new Surveillance Requirement for the containment sump level channels is proposed to provide confidence that when one of the two required containment sump level channels is inoperable,

the remaining required containment sump level channel is operating properly in lieu of Required Action A.1 of Technical Specification 3.4.9.

2. DETAILED DESCRIPTION

RCS Unidentified Leakage Instrument Operability

Gutter Drain Isolation

Existing Applicability Note 1 of Technical Specification 3.4.9 states that the containment atmosphere F18 particulate monitor is not required to be OPERABLE in MODE 1 when reactor power is less than 20 percent rated thermal power.

Existing Applicability Note 2 of Technical Specification 3.4.9 currently cites a condition for which the containment sump level measurement cannot be used. Note 2 currently states, "Containment sump level measurements cannot be used for leak detection if leakage is prevented from draining to the sump such as by redirection to the In-Containment Refueling Water Storage Tank (IRWST) by the containment shell gutter drains."

The functional arrangement of the IRWST gutter drain isolation valves is shown on UFSAR Figure 6.3-1. The closure of the IRWST gutter drain isolation valves could affect the ability of the containment sump level instrumentation to detect unidentified leakage. Condensate from reactor coolant pressure boundary (RCPB) or main steam line leakage can be captured in both the containment air filtration system (VCS) coil drains and the IRWST gutter drains, which are normally drained to the containment sump. When the IRWST gutter drain isolation valves are closed for in-service testing or maintenance, condensate from the gutters would be directed to the IRWST instead of the containment sump. Preventing leakage collected in the IRWST gutters from reaching the containment sump would affect the containment sump level measurements for unidentified leakage. The IRWST gutter drain isolation valves (PXS-PL-V130A/B) are stroke tested quarterly in accordance with the inservice test program. Therefore, the valves will be tested during the modes of applicability of LCO 3.4.9. Technical Specification 3.4.9 does not exclude the containment sump level instruments from requiring OPERABILITY during IRWST gutter drain isolation valve closure. It is possible that the conditions in existing Notes 1 and 2 of Technical Specification 3.4.9 could occur concurrently and Condition E (enter LCO 3.0.3, immediately) would be entered.

Change Proposed for Technical Specification 3.4.9:

A change is proposed to the Applicability notes for LCO 3.4.9 to not require OPERABILITY of the containment sump level instruments when the IRWST gutter drain isolation valves are closed and for 2 hours following opening of the IRWST gutter drain isolation valves. In compensation for not requiring OPERABILITY for the period specified, an RCS inventory balance would be required every 24 hours after 12 hours of steady state operation while the condition in the Applicability Note is met. This change is proposed as new Applicability Note 1a.

The 2-hour normalization period is proposed to provide operational flexibility that encompasses the transport delay time due to IRWST gutter drain isolation valve testing or maintenance and restoration from these activities. The 2-hour normalization period associated with proposed Note 1a is also proposed to provide adequate time for the data display and processing system (DDS)

to collect data over a valid measurement interval as described in UFSAR Subsection 5.2.5.3.1. The containment sump level instruments detect increases in containment sump level over a sample duration time (Unidentified Leak Rate = Unidentified Leakage / duration of the leak rate calculation) to quantify the unidentified leak rate in support of complying with LCOs 3.4.7 and 3.7.8. The leak rate alarm is based on the increase in containment sump level. Depending on the duration, one (or more) of the IRWST gutter drain isolation valves is (are) closed in the existence of unidentified leakage, it could take time for the leak detection equipment to reestablish a leak rate consistent with any existing RCPB or main steam line leak.

VFS Operations

As described in UFSAR Subsection 9.4.6, the containment recirculation cooling system (VCS) controls containment building air temperature and humidity to provide a suitable environment for equipment OPERABILITY during normal operation and shutdown.

As described in UFSAR Subsection 9.4.7.1.2, the containment air filtration system (VFS) provides intermittent flow of outdoor air to purge the containment atmosphere of airborne radioactivity during normal plant operation to provide an acceptable airborne radioactivity level prior to personnel access, as well as intermittent venting of air into and out of the containment to maintain the containment pressure within its design pressure range during normal plant operation. These are nonsafety-related functions performed during the normal course of plant operation. As described in UFSAR Subsection 9.4.7.2.3, the need for operation of the VFS for purge or venting purposes is determined by the main control room operators. Prior to and during plant shutdown, one or both trains of the containment air filtration system can be operated to remove airborne radioactivity prior to personnel access. When both trains are operated concurrently, the VFS provides a maximum airflow rate equivalent to approximately 0.21 air exchanges per hour. The VFS supply duct outlet is generally oriented toward a VCS intake register to facilitate distribution of fresh, VFS supply air throughout containment.

Operation of the VFS affects the ability of both methods of RCS leakage detection required by LCO 3.4.9 (the containment sump level and the containment atmosphere F18 particulate radioactivity monitoring) to detect unidentified leakage.

Effect of VFS Operation on Containment Sump Levels:

During normal operation when the VFS is not being used for containment purge, moisture in the containment atmosphere will either condense on equipment or structures and make its way to the containment sump, or will be condensed on the VCS fan coils and be drained to the containment sump. During a containment purge, the VFS is operated to supply fresh outside air to the containment atmosphere while removing air from the containment atmosphere. Simultaneously, the VCS is operated to recirculate and cool the containment atmosphere.

Though the VFS supply air handling unit is equipped with cooling coils for dehumidification (see UFSAR Figure 9.4.7-1), the humidity of the supply air is likely to differ from the humidity of the air inside containment, which is controlled by the VCS. While a containment purge is occurring, the humidity of the VFS supply air will affect the quantity of condensate that reaches the containment sump.

Depending on the humidity of the VFS supply air in relation to the containment air, a containment purge could increase or decrease the amount of condensate generated on the VCS cooling coils. The ingress of outside air could invalidate the containment sump level measurement because injected humidity could increase sump levels leading to false alarms and removal of humidity could divert condensation away from the VCS coils and the containment sump. Because of the associated humidity perturbation, operating the VFS will affect the ability of the containment sump level sensors to accurately detect RCPB leakage. There is a high potential of getting false readings on the containment sump level instruments because of the containment purge. Therefore, the Applicability Bases for Technical Specification 3.4.9 state that the containment sump level change method of detecting leaks is not valid while containment purge occurs or within 2 hours after the end of containment purge. This potential for false indication is not a matter of inadequate instrument sensitivity; and does not mean the instruments have malfunctioned.

Effect of VFS Operation on Particulate Radioactivity Monitoring:

As described in UFSAR Subsection 5.2.5.3.3, the containment atmosphere is continuously monitored for airborne particulate radioactivity. The containment atmosphere F18 particulate monitor is a subcomponent of the radiation monitor skid upstream of the grab sample package as shown on UFSAR Figure 9.3.3-1. The radiation monitor skid resides outside containment; and is equipped with a sample pump that continuously draws a representative sample of air from the containment atmosphere through the instrument package. The sample lines for the radiation monitor skid draw air directly from the containment atmosphere; and do not directly interface with the VFS or VCS. However, VFS supply air is directed to the VCS intake; and VCS supply air is distributed throughout the containment compartments to provide cooling for various components. Because containment venting and containment purge involve injecting fresh air into containment and exhausting air from the containment atmosphere, operating the VFS will affect the radioactivity concentration of the air sample drawn through the radiation monitoring skid; and thus the ability of the containment atmosphere F18 particulate monitor to detect RCPB leakage.

Because operation of the VFS for containment venting or containment purge will remove F18 particulates from the containment atmosphere, the Applicability Bases for the containment atmosphere F18 particulate monitor (F18 monitor) states the F18 monitor measurement is not valid while containment purge occurs or within 2 hours after the end of containment purge. As previously stated, during a containment purge, the VFS is operated to supply fresh outside air to the containment atmosphere while removing air from the containment atmosphere. As described in UFSAR Subsection 9.4.7.2.3, when both VFS trains are operated concurrently, the system provides a maximum airflow rate to the containment equivalent to approximately 0.21 air exchanges per hour. The air exchange associated with a containment purge will remove radionuclides from the containment atmosphere. Therefore, there is a high potential that readings on the containment atmosphere F18 particulate monitor will be inaccurate because of the containment purge. Again, this potential for inaccurate readings is not a matter of inadequate instrument sensitivity; and does not mean the instrument has malfunctioned.

Normalization after VFS Operation

After the containment purge has been terminated, the VCS will continue to operate to recirculate and cool the containment atmosphere. It could take significant time for the VCS to equilibrate the containment air temperature and humidity distribution. The containment sump level will be affected by the condensate inputs until the containment air humidity approaches normal levels. The containment atmosphere F18 particulate monitor will be affected until containment atmosphere is well mixed by the VCS. Therefore, the Technical Specification 3.4.9 Bases cite a period of 2 hours after purge operation to allow the VCS to establish equilibrium conditions in the containment atmosphere and to allow the DDS to gather data over a full measurement interval before relying on the containment sump level instrumentation and the containment atmosphere F18 particulate monitor to detect leakage.

The Applicability of LCO 3.4.9 does not explicitly exclude the containment sump level instruments or the F18 monitors from requiring OPERABILITY during or after containment purge. The current Bases state that each time a containment purge operation is initiated, the containment sump level change and the containment atmosphere F18 particulate monitor methods of detecting leaks would not be valid for the duration of the purge and for 2 hours afterward. Each time a containment purge operation is initiated, all three of the containment sump level instruments and the containment atmosphere F18 particulate monitor would be declared inoperable, which would require entry into Condition E (enter LCO 3.0.3, immediately). In addition, as described in UFSAR Subsection 5.2.5.3.5, containment entry may be required in the event a low level of unidentified leakage is detected in order to identify the source of the unidentified leakage and determine its safety significance. The procedures for assessing leakage are intended to address leak rates less than the limits set forth in Technical Specification 3.4.7. Entry into LCO 3.0.3 in the course of normal, operational evolutions or to allow containment entry to assess leakage at rates less than the Technical Specification limit is undesirable.

Change proposed for Technical Specification 3.4.9:

A change is proposed to the Applicability Notes of Technical Specification 3.4.9 in relation to the OPERABILITY of the leak detection instrumentation during containment purge. Specifically, addition of an Applicability Note is proposed for the containment sump level instruments and the containment atmosphere F18 particulate monitor that would not require OPERABILITY when the containment purge flow path is open and for 2 hours following closure of the containment purge flow path during the modes of LCO 3.4.9 applicability. In compensation for not requiring OPERABILITY of these instruments for the period specified, an RCS inventory balance would be required every 24 hours after 12 hours of steady state operation while the conditions of the Applicability Note are met. The 2-hour normalization period associated with Note 1b is proposed to encompass the transport delay time to the containment sump and allow the VCS coolers to reestablish equilibrium atmospheric conditions inside containment prior to requiring OPERABILITY for these instruments. The 2-hour normalization period also provides adequate time for the DDS to collect data over a valid measurement interval as described in UFSAR Subsection 5.2.5.3.1.

Compensatory Measures

Both of the proposed exceptions to the LCO 3.4.9 Applicability previously described are to be added as new Note 1 and require an increase in the required Frequency of Surveillance Requirement (SR) 3.4.7.1 (RCS inventory balance) whenever the operating conditions in new Note 1 are true. Requiring SR 3.4.7.1 be performed every 24 hours after 12 hours of steady state operation when the RCS leakage detection instrumentation is not required to be operable provides detection capability comparable to the actions required in Conditions B and C with the added confidence that the condition has not been entered due to malfunction of the detection equipment or supporting systems and is a temporary condition associated with normal operation. Additionally, performing the RCS inventory balance is part of the indicated procedure in response to an indication of RCPB unidentified leakage or operation of the containment sump pumps.

Technical Specification Changes

a. Existing Applicability Note 2 of Technical Specification 3.4.9 is deleted.
b. Existing Applicability Note 1 of Technical Specification 3.4.9 is renumbered to become Note 2.
c. A new Applicability Note 1 is added to Technical Specification 3.4.9 to prevent unnecessary interruptions of power operation by requiring Surveillance Requirement 3.4.7.1 to be performed with increased frequency when the IRWST gutter drain isolation valves are closed and for 2 hours after reopening IRWST gutter drain isolation valves and when the containment purge flow path is open and for 2 hours after containment purge flow path is closed.

Corresponding changes are shown to the Technical Specification Bases in Enclosure 3 for information only.

Main Steam Line Leakage Identification

The purpose of existing Required Action A.1 of LCO 3.4.9 is to make sure that the remaining required containment sump level channel is OPERABLE. However, the variable by which Required Action A.1 judges OPERABILITY of the remaining channel lacks fidelity with respect to whether the instrument is reading an accurate input. The OPERABILITY of the remaining containment sump level channel cannot be judged by changes in the containment sump integrated volume because changes in the volume input to the containment sump are associated with normal operation. A change in the leak rate of a component or a new leak could increase the volume input to the containment sump without posing a safety issue. Therefore, the remaining required containment sump level channel could be measuring a change in containment sump volume input that is accurate and within the limits imposed by LCO 3.4.7 and LCO 3.7.8; but would still require plant shutdown in accordance with Condition D.

A change is proposed to improve verification of the remaining channel by replacing Required Action A.1 from LCO 3.4.9 with a new Surveillance Requirement which will provide more appropriate monitoring to assess OPERABILITY of the remaining required containment sump level channel. In order to better facilitate determining the OPERABILITY of the remaining containment sump level instrument, the new Surveillance Requirement would require a

CHANNEL CHECK of the containment sump level instruments on a Frequency consistent with the existing Surveillance Requirement for the containment atmosphere F18 particulate monitor. This change is implemented by removing reference to the containment atmosphere F18 particulate monitor from SR 3.4.9.1, making this Surveillance Requirement applicable to all instrumentation required by the LCO.

The CHANNEL CHECK (SR 3.4.9.1, as proposed) of the containment sump level instruments and the containment atmosphere F18 particulate monitor would be performed every 12 hours. Requiring a CHANNEL CHECK every 12 hours requires observation of the each of the three containment sump level channels every 12 hours; and in the event any one channel fails, could reveal trends in signal variation that precede failure. Knowing failure precursors assists in determining whether the remaining required instrument is OPERABLE in the event the other two instrument channels are inoperable. The Frequency of 12 hours is reasonable for detecting off normal conditions. Though the PLS output of the verified containment sump level calculations performed by the DDS are displayed as one value, all three containment sump level signals can be displayed in the control room.

In addition, the separate Surveillance Requirements for CHANNEL CALIBRATION of the containment sump level instruments and the containment atmosphere F18 particulate monitor are combined into one Surveillance Requirement applicable to all instrumentation covered by the LCO. This change does not alter the Frequency with which any of the diverse leak detection instruments are calibrated.

With the changes proposed, the action to verify the volume input to the containment sump does not change significantly would be eliminated, and the Required Action in response to inoperability of one required containment sump level channel focuses on reestablishing OPERABILITY of the second required containment sump level channel. The change to remove existing Required Action A.1 is acceptable because the new Surveillance Requirement provides an unambiguous compensatory measure specific to OPERABILITY of the containment sump level instrumentation.

<u>Technical Specification Changes</u>

a. Required Action A.1 of Technical Specification 3.4.9 is deleted.
b. Required Action A.2 of Technical Specification 3.4.9 is changed to Required Action A.1.
c. The reference to the containment atmosphere F18 particulate monitor is removed from Surveillance Requirements 3.4.9.1 and 3.4.9.3.
d. Surveillance Requirement 3.4.9.4 is deleted.

Corresponding changes are shown to the Technical Specification Bases in Enclosure 3 for information only.

3. TECHNICAL EVALUATION

As described in UFSAR Subsection 5.2.5, monitoring of the reactor coolant pressure boundary (RCPB) for reactor coolant leakage provides a means of detecting and, to the extent practical, identifying the source of and quantifying RCPB leakage. The leakage monitoring instruments are capable of detecting a 0.5 gallon per minute (gpm) increase in the leak rate from the RCPB within 1 hour.

The leakage monitoring arrangement is also capable of detecting 0.5 gpm increase in leak rate from the main steam lines inside containment. The leak detection for the main steam lines is associated with the leak-before-break assumptions for the as-designed main steam lines.

A leak in the RCS or from the main steam lines inside containment would result in water flowing into the containment sump. Three containment sump level sensors (WLS-LT-034, WLS-LT-035, and WLS-LT-036) monitor the containment sump for increases in water level. The DDS computes the leakage rate and the plant control system (PLS) provides an alarm in the main control room if the average change in leak rate during any given measurement interval exceeds 0.5 gpm for unidentified leakage.

An RCS inventory balance is diverse from the containment atmosphere F18 particulate radioactivity and containment sump level change methods of detecting unidentified leakage; and can detect unidentified leakage as low as 0.13 gpm.

General Design Criterion (GDC) 30, “Quality of Reactor Coolant Pressure Boundary,” as set forth in Appendix A, “General Design Criteria for Nuclear Power Plants,” to Title 10, Part 50, “Domestic Licensing of Production and Utilization Facilities,” of the Code of Federal Regulations (10 CFR Part 50), requires that plants provide the means for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage. Unidentified leakage detection is also maintained in support of the use of leak-before-break criteria for high energy pipes in containment, which assume that a leak of 0.5 gpm or greater can be detected. Online monitoring of RCPB and main steam line leakage provides indication that a potentially adverse condition may exist and facilitates prompt corrective action as described in UFSAR Subsection 5.2.5.3.5.

As stated in UFSAR Appendix 1A, the plant RCPB leakage detection arrangement meets the criteria of U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.45 (1973) with the exception that two diverse methods for leak detection – containment sump level and flow monitoring and airborne particulate radioactivity monitoring – are used. (Regulatory Guide 1.45 criterion C3 recommends 3 diverse detection methods be used.) A third method of detecting leakage is provided by the RCS inventory balance. For piping designed to mechanistic pipe break assumptions, or leak-before-break, Section 3.6.3 of the NRC Standard Review Plan (NUREG-0800) states that leak detection shall be provided consistent with the principles outlined in Regulatory Guide 1.45. In addition, as acknowledged by the NRC staff in Subsection 3.6.3.2.1 (Reactor Coolant System and Main Steam Line Leakage Detection Capability) of NUREG-1793, leak detection for leak-before-break purposes does not require the same degree of timeliness. Therefore requirements of Regulatory Guide 1.45 and Section 3.6.3 of the NRC Standard Review Plan are met by the plant unidentified leakage detection methods.

The RCS leakage detection meets Criterion 1 of 10 CFR 50.36(c)(2)(ii), which requires that limiting conditions for operation be established for installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the RCPB. Therefore, RCPB identified and unidentified LEAKAGE is controlled by Technical Specification 3.4.7 and OPERABILITY of the RCS leakage detection systems is controlled by Technical Specification 3.4.9.

Limiting condition for operation (LCO) 3.4.7 does not allow continued operation if unidentified LEAKAGE exceeds 0.5 gpm in MODES 1, 2, 3 and 4. LCO 3.4.7 also establishes limits for other identified sources of LEAKAGE. Surveillance Requirement 3.4.7.1 of Technical Specification 3.4.7 requires an RCS inventory balance be performed every 72 hours after 12 hours of steady state operation. LCO 3.7.8 does not allow continued operation if leakage from the main steam line piping inside containment exceeds 0.5 gpm in MODES 1, 2, 3 and 4.

LCO 3.4.9 requires that two diverse instrument methods of detecting unidentified leakage be operable during operation in MODES 1, 2, 3 and 4.

With the proposed changes, the RCS leakage detection instrumentation would not be required to be OPERABLE while the containment purge flow path is open. During hot shutdown in preparation for containment entry for refueling, the VFS operates for an extended period (depending on containment atmosphere conditions) prior to reaching cold plant shutdown to reduce airborne contamination inside containment. To reduce refueling outage time, this refueling containment purge is typically initiated while the unit is in MODE 1 when LCO 3.4.9 is applicable. Thus, the planned, normal operating practice of initiating the refueling containment purge while the unit is still in MODE 1 would also require entry into Condition E (enter LCO 3.0.3, immediately) of LCO 3.4.9. Entry into LCO 3.0.3 in the course of normal, operational evolutions is undesirable. The refueling containment purge will require the longest anticipated period of operation under the proposed Note 1 action statement. The refueling containment purge would continue during operation in MODE 1 until the scheduled shutdown time, at which time the plant would be brought to MODE 5 as quickly as possible. Therefore, during the containment purge in preparation for refueling, the Actions required when LCO 3.0.3 is entered are part of the normal operating procedure, though on a different time scale. The RCS inventory balance can provide adequate indication of RCS unidentified leakage during power operation coincident with a refueling containment purge until the unit enters MODE 5.

During normal operation, containment activity is expected to be low compared to existing operating plants because of the implementation of canned reactor coolant pumps in the AP1000 design. Frequent containment purge operations to reduce containment airborne radioactivity levels during power operation are not anticipated. The VFS purge flow path can be operated periodically to reduce the pressure differential between the containment atmosphere and the ambient atmosphere, which may change due to fluctuations in ambient pressure associated with weather systems. Weather changes can be frequent at times, during hurricane season, for example. The VFS is designed to be operated as frequently as needed to maintain containment pressure between -0.2 psig and +1 psig per LCO 3.6.4. However, the need for containment venting is an operational decision made by reactor operators based on controlling procedures and plant conditions. It is anticipated that venting operations to control containment pressure will entail opening the containment purge flow path for durations on the scale of minutes (not hours), requiring only short periods in the Note 1 action statement.

There are no operations associated with normal plant evolutions that require containment entry. However, during normal plant operation at power, the VFS is manually operated from the main control room to purge the containment for up to 20 hours prior to personnel entry into the containment, depending on plant conditions. Infrequent containment entry during power operation is anticipated.

The 2-hour normalization period is proposed to provide operational flexibility that encompasses the time needed for condensed leakage to be transported to the containment sump and allows reestablishment of equilibrium atmospheric conditions inside containment prior to requiring OPERABILTY for these instruments. A 20-hour purge duration plus a 2-hour normalization period is also within the Completion Time allowed by Technical Specification 3.4.9 for operation with only one detection method operable – the one available detection method in this case being RCS inventory balance, which would be required by the proposed changes to LCO 3.4.9. The 2-hour normalization period is consistent with the information on the effects of containment purge in the existing Bases for Technical Specification 3.4.9, and as submitted to the NRC staff in RAI 410.17 submitted in Westinghouse Letter DCP/NRC0875, dated May 19, 1997 (Accession number 9705280344).

The RCS inventory balance cannot detect main steam line leakage during a containment purge. However, the main steam lines inside containment are evaluated to leak-before-break. Piping demonstrated to leak-before-break leaks at a detectable rate from postulated flaws prior to growth of the flaw to a size that would fail because of applied loads resulting from normal conditions, anticipated transients, and a postulated safe shutdown earthquake as described in UFSAR Subsection 3.6.3. The leak-before-break assumptions for lines evaluated for mechanistic pipe break are not time limited. The probability of a seismic event concurrent with a containment purge operation at power is low. Therefore, allowing use of the containment purge for the time periods anticipated without entry into a Condition of Technical Specification 3.4.9 does not pose a reduction in the ability to detect leaks in the main steam lines prior to growth of a flaw to a size that would fail, and maintains adequate detection for the leak-before-break main steam lines.

With the proposed changes, the RCS leakage detection instrumentation would not be required to be OPERABLE while the IRWST gutter drain isolation valves are closed and for 2 hours after the IRWST gutter drain isolation valves are opened. Depending on the duration one (or more) of the IRWST gutter drain isolation valves is (are) closed in the existence of unidentified leakage, it could take time for the leak detection equipment to reestablish a leak rate consistent with any existing RCPB or main steam line leakage. The 2-hour normalization period is proposed to provide operational flexibility that encompasses the time needed for condensed leakage to be transported to the containment sump.

The containment sump level instruments detect increases in containment sump level over a sample duration time set within the DDS to quantify the unidentified leak rate in support of complying with LCOs 3.4.7 and 3.7.8. The 2-hour normalization period for both conditions is also proposed to provide adequate time for the DDS to collect data over a valid measurement interval as described in UFSAR Subsection 5.2.5.3.1.

The time periods proposed are reasonable considering the unidentified leakage detection equipment is not malfunctioning and the period of unavailability is associated with a normal operating condition.

The alarm(s) and associated setpoint(s) of the unidentified leakage detection systems provide operators an early warning signal before unidentified leakage reaches the Technical Specification 3.4.7 or 3.7.8 limits; and procedures are established, as described in UFSAR Subsection 5.2.5.3.5, for responding to low level unidentified leakage. These procedures, as

described in UFSAR Subsection 5.2.5.3.5, may include containment entry to identify the source of the unidentified leakage and determine its safety significance. With the proposed changes, the leak detection instrumentation will remain available to operators as an aid during containment purge operations or IRWST gutter drain isolation valve testing, though will not be required to detect 0.5 gpm of unidentified leakage within 1 hour by Technical Specification 3.4.9.

Regulatory Guide 1.45 provides the guidance that Technical Specifications should address the availability of various types of instruments to assure adequate coverage at all times. As described in UFSAR Subsection 5.2.5.3.2, the reactor coolant system inventory balance is a quantitative indicator of leakage that allows determination of both the type and magnitude of leakage. The RCS inventory balance is not affected by a containment purge operation or the position of the IRWST gutter drain isolation valves. As documented in NUREG-1793, Subsection 5.2.5.3, the NRC staff accepted the RCS inventory balance as an acceptable compensatory action to be implemented when both of the diverse methods of leak detection required by Technical Specification 3.4.9 are inoperable. Substituting a more frequent RCS inventory balance for quantification of unidentified leakage when the leak detection instrumentation is not OPERABLE provides adequate coverage in accordance with Position C.9 of Regulatory Guide 1.45, considering the expected frequency and duration of containment purge operations and IRWST gutter drain isolation valve testing.

The proposed amendment also removes existing Required Action A.1 of Technical Specification 3.4.9 and renumbers Required Action A.2 to Required Action A.1. A new Surveillance Requirement provides a new CHANNEL CHECK on a Frequency of every 12 hours to provide more appropriate monitoring to assess OPERABILITY of the remaining required containment sump level channel. This channel check will provide a history of the operational performance of the individual containment sump level channels that will assist in the determination of instrument OPERABILITY when instrument or channel failure is suspected (as opposed to mishandling, fire, or another factor not related to instrument functionality). The channel check can be performed during plant operation per Position C.8 of Regulatory Guide 1.45. The change to consolidate the separate channel calibration surveillances into a single surveillance does not change the frequency with which either of the diverse leak detection methods is calibrated. The proposed changes to remove Required Action A.1 and add a new Surveillance Requirement for the containment sump level channels meets the expectation of Regulatory Guide 1.45.

The proposed changes to remove Required Action A.1 of Technical Specification 3.4.9 and add a new Surveillance Requirement for the containment sump level channels do not involve an increase in occupational dose. The channel check can be performed from the main control room by personnel stationed there.

The change activity has no adverse impact on the emergency plan or the physical security plan implementation, because there are no changes to physical access to credited equipment inside the Nuclear Island (including containment or the auxiliary building) and no adverse impact to responders' ability to detect RCS or main steam line leakage.

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52, Appendix D, VIII.C.6 states that after issuance of a license, "Changes to the plant specific TS (Technical Specifications) will be treated as license amendments under 10 CFR 50.90." 10 CFR 50.90 addresses the applications for amendments of licenses, construction permits and early site permits. As discussed above, changes to Technical Specifications are requested, and thus a license amendment request (LAR) (as supplied herein) is required.

10 CFR 50.36(c)(2)(ii) requires that a Technical Specifications limiting condition for operation of a nuclear reactor must be established for instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. 10 CFR 50.36(c)(2)(iii) requires that the Technical Specifications include Surveillance Requirements to test, calibrate or inspect necessary systems and components 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. The proposed changes to Technical Specification 3.4.9 impose compensatory Actions when instrumentation used to detect abnormal degradation of the reactor coolant pressure boundary is not required to be OPERABLE; and add a Surveillance Requirement to assure the instrumentation performs as designed. Therefore, the proposed changes meet the requirements of 10 CFR 50.36(c).

10 CFR Part 50, Appendix A, General Design Criterion (GDC) 2 requires that structures, systems and components important to safety be designed to withstand the effects of natural phenomena, such as earthquakes. The changes to Technical Specification 3.4.9 for RCS leakage detection do not change the physical design of the RCS leakage detection equipment required by LCO 3.4.9. The containment sump level sensors and the containment atmosphere F18 particulate monitor are seismic Category I and remain functional after a safe shutdown earthquake, maintaining compliance with GDC 2.

10 CFR 50, Appendix A, GDC 30 requires, in part, that plants provide the means for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage. The proposed changes to Technical Specification 3.4.9 for RCS leakage detection provide for adequate detection of unidentified leakage from the RCS at all times using either the change in containment sump level, the containment atmosphere F18 particulate radioactivity, or the RCS inventory balance methods of detecting RCS unidentified leakage; and maintain compliance with GDC 30.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration Determination

Southern Nuclear Operating Company (SNC) is requesting an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP)

Units 3 and 4, respectively. The proposed changes affect the COL concerning the Technical Specification 3.4.9 for reactor coolant pressure boundary (RCPB) unidentified leakage detection instrumentation in COL Appendix A

The proposed changes provide for adequate detection of reactor coolant system (RCS) and main steam line leakage at all times and incorporate consideration for instrument sensitivities not accounted for in the Applicability of Technical Specification 3.4.9.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The RCS leakage detection systems provide early warning of abnormal degradation of the RCPB or the main steam lines inside containment so that actions can be taken to prevent pipe breaks. The change proposed to limiting condition for operation (LCO) 3.4.9 adds limited periods during which the containment sump level and/or containment atmosphere F18 particulate monitor are not required to be operable – during and for 2 hours after use of the containment purge flow path, and during in-containment refueling water storage tank (IRWST) gutter drain isolation valve closure and for 2 hours after reopening the valves – and proposes a compensatory increase in the frequency of the RCS inventory balance during these periods. Containment purge, containment venting and IRWST gutter drain isolation valve closure are evolutions associated with normal operating conditions. The probability of a leakage flaw growing to a size that would cause pipe failure during and for 2 hours after IRWST gutter drain isolation valve inservice testing or a containment venting evolution is low because the durations of the test and venting evolution are short. The probability of a leakage flaw growing to a size that would cause pipe failure during and for 2 hours after a containment purge operation is low because containment purge operations at power are infrequent, and because containment purge in preparation for refueling is conducted concurrent with operations that will put the plant in operating modes for which LCO 3.4.9 is not applicable (MODES 5 and 6).

The RCS inventory balance method of leak detection is quantitative and remains available when the plant has been operating at steady state for at least 12 hours and the leakage instrumentation is not required to be OPERABLE. In addition, the leak detection instruments will remain functional and have sensitivities such that the instrumentation will still be useful as a leak detection aid to operators during a containment purge operation or IRWST gutter drain isolation valve inservice testing. The RCS leakage detection instrumentation is not credited with consequence mitigation during any accident previously evaluated.

Existing Required Action A.1 is intended to determine whether the remaining required containment sump level instrument is functioning properly when one of the required instruments is inoperable. Removal of Required Action A.1 does not increase the probability or consequences of an accident previously evaluated because a new Surveillance Requirement is proposed which will provide more appropriate monitoring to assess OPERABILITY of the remaining required containment sump level channel.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

4.3.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The failure of the leak detection systems to detect small leaks in the reactor coolant pressure boundary could lead to large undetected leaks and possibly a loss of coolant accident. Loss of coolant accidents for a spectrum of pipe sizes and locations are already postulated in UFSAR Chapter 15, Section 15.6. Breaks in the main steam lines inside containment are also analyzed in UFSAR Chapter 15, Section 15.1. Unidentified leakage detection and operator action in response to unidentified leakage are not postulated for any of the design basis accident analyses described in UFSAR Chapter 15.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed amendment does not reduce RCS leakage detection instrument availability with respect to IRWST gutter drain isolation valve closure or reactor power level. The changes to compensate for instrument sensitivities during containment purge operation do not represent a significant portion of the expected operating time in MODES 1, 2, 3 and 4. The containment purge isolation valves are opened temporarily during plant startup to relieve containment pressure increase due to thermal expansion. Containment purge during power operation may be required to support containment entry – which is infrequent. The containment purge flow paths are also used for venting the containment atmosphere to control containment pressure differential as weather changes affect ambient pressure. When the containment purge system is not being used to support personnel access into containment or to control the containment atmospheric pressure, the containment air filtration system containment isolation valves are maintained in their normally closed position. The IRWST gutter drain isolation valves are cycled quarterly, but are normally maintained in the open position. Therefore, use of the containment purge flow

paths and closure of the IRWST gutter drain isolation valves do not represent a significant portion of the time in power operation. In addition, the action to perform a RCS inventory balance on a greater frequency during these evolutions will provide more appropriate monitoring to assess OPERABILITY of the leak detection instrumentation. Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Removing existing Required Action A.1 and adding surveillance of the containment sump level channels does not significantly decrease the margin of safety. The prescribed Action did not provide definitive information about instrument performance or OPERABILITY. The new Surveillance Requirement proposed will provide a history of the operational performance of the containment sump level instrumentation that will better assist in the determination of instrument OPERABILITY.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (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 amendment will not be inimical to the common defense and security or to the health and safety of the public. Therefore, it is concluded that the requested amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5. ENVIRONMENTAL CONSIDERATIONS

Sections 2 and 3 of this license amendment request provide the details of the proposed changes.

The proposed changes affect Technical Specification 3.4.9 in Appendix A of the Combined License (COL). In summary, the proposed changes revise the applicability of Technical Specification 3.4.9 to accommodate containment purge operations and IRWST gutter drain isolation valve testing and impose compensatory actions to monitor for abnormal degradation of the reactor coolant pressure boundary when the RCS leakage detection instrumentation capability is affected by normal operating activities. The proposed changes also include addition of a new Surveillance Requirement to replace required Actions intended to assure accurate instrument function.

The Licensee has determined that the anticipated construction and operational effects of the proposed amendment meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

(i) There is no significant hazards consideration.

As described in Section 4.3, Significant Hazards Consideration Determination, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration Determination concluded that (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The proposed changes do not affect any aspect of plant construction or operation that introduce a change to any effluent types (for example effluents containing chemicals or biocides, sanitary system effluents, and other effluents), and do not affect any plant radiological or non-radiological effluent release quantities. The proposed changes do not affect the functionality of any design feature or operational arrangements credited with controlling the release of effluents during plant operation. The containment air filtration system is credited with filtering air purged from the containment prior to release to the environment through the plant vent. The filtration and monitoring principles for containment purge flow paths are not affected by the proposed changes. Therefore, there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

Company and station policies keep all radiation exposure of personnel within limits defined by 10 CFR 20, Standards for Protection Against Radiation. Administrative procedures and practices are implemented to maintain radiation exposure of personnel as low as is reasonably achievable (ALARA).

The proposed changes do not affect walls, floors, doors, or other structures that provide shielding. The proposed changes add a Surveillance Requirement to the Technical Specifications which will require additional operator action to perform and record the results of the surveillance. The surveillance can be performed from the main control room. The proposed changes do not affect the procedures intended to minimize personnel dose for containment entry. Plant radiation zones are not affected, and there are no changes to the controls required under 10 CFR Part 20 that preclude a significant increase in occupational radiation exposure. Therefore, the requested amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on this review of the requested amendment, the Licensee has been determined that anticipated construction and operational impacts of the requested amendment do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed exemption is not required.

6. REFERENCES

Westinghouse Letter DCP/NRC0875, "Westinghouse Responses to NRC Requests for Additional Information on the AP600," dated May 19, 1997. (Accession Number 9705280344)

Southern Nuclear Operating Company

ND-17-1470

Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to Licensing Basis Documents

(LAR-17-029)

Insertions Denoted by Blue Underline and Deletions by Red Strikethrough
Omitted text is identified by three asterisks (* * *)

(This Enclosure consists of 3 pages, including this cover page)

Revise COL Appendix A, Technical Specification 3.4.9, RCS Leakage Detection Instrumentation, as follows.

LCO 3.4.9 The following RCS leakage detection instrumentation shall be OPERABLE:

a. Two containment sump level channels; and
b. One containment atmosphere F18 particulate monitor.

APPLICABILITY: MODES 1, 2, 3, and 4

- NOTES -

1. The following RCS leakage detection instrumentation is not required to be OPERABLE provided SR 3.4.7.1 is performed once per 24 hours after 12 hours of steady state operation:
   a. The required containment sump level channels when In-containment Refueling Water Storage Tank (IRWST) gutter drain isolation valves are closed and for 2 hours after reopening IRWST gutter drain isolation valves; and
   b. The containment atmosphere F18 particulate monitor and required containment sump level channels when containment purge flow path is open and for 2 hours after containment purge flow path is closed.
2. ~~1.~~ The containment atmosphere F18 particulate monitor is only required to be OPERABLE in MODE 1 with RTP > 20%.

~~2. Containment sump level measurements cannot be used for leak detection if leakage is prevented from draining to the sump such as by redirection to the In-Containment Refueling Water Storage Tank (IRWST) by the containment shell gutter drains.~~

ACTIONS

- NOTE -

LCO 3.0.4 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required containment sump channel inoperable.	A.1 ~~Verify that the volume input per day to the containment sump does not change (+ or -) more than 10 gallons or 33% of the volume input (whichever is greater). The volume used for comparison will be the value taken during the first day following the entrance into this CONDITION.~~	~~Once per 24 hours~~
	~~AND~~	
	~~A.2~~ Restore two containment sump channels to OPERABLE status.	14 days
* * *	* * *	* * *

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Perform a CHANNEL CHECK ~~of containment atmosphere F18 particulate monitor~~.	12 hours
* * *		* * *
SR 3.4.9.3	Perform a CHANNEL CALIBRATION ~~of required containment sump monitor~~.	24 months
~~SR 3.4.9.4~~	~~Perform a CHANNEL CALIBRATION of containment atmosphere F18 particulate monitor.~~	~~24 months~~

Southern Nuclear Operating Company

ND-17-1470

Enclosure 3

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Conforming Technical Specification Bases Changes

(For Information Only)

(LAR-17-029)

Insertions Denoted by Blue Underline and Deletions by Red Strikethrough
Omitted text is identified by three asterisks (* * *)

(This Enclosure consists of 4 pages, including this cover page)

Technical Specification Bases, Section B 3.4.7, RCS Operational LEAKAGE

SURVEILLANCE REQUIREMENTS	SR 3.4.7.1 * * * ~~The containment atmosphere F18 particulate radioactivity LEAKAGE measurement during MODE 1 is not valid while containment purge occurs or within 2 hours after the end of containment purge.~~ ~~The containment sump level change method of detecting leaks during MODES 1, 2, 3, and 4 is not valid while containment purge occurs or within 2 hours after the end of containment purge.~~ * * *

Technical Specification Bases, Section B 3.4.9, RCS Leakage Detection Instrumentation

LCO	* * * The LCO requires three instruments to be OPERABLE, subject to the exceptions and timing of plant evolutions in the Applicability Notes, as discussed below. The LCO is satisfied when monitors of diverse measurement means are available. Thus, two containment sump level monitors, in combination with a containment atmosphere F18 particulate monitor, provide an acceptable minimum. Containment sump level monitoring is performed by two of the three redundant, seismically qualified level instruments. ~~The LCO note clarifies that if LEAKAGE is prevented from draining to the sump, its level change measurements made by OPERABLE sump level instruments will not be valid for quantifying the LEAKAGE.~~
APPLICABILITY	* * * The Applicability is modified by Note 1 in recognition of reductions in LEAKAGE detection capability caused by plant evolutions that divert potential LEAKAGE away from the containment sump (i.e., redirection from the containment sump to the in-containment refueling water storage tank (IRWST) by the IRWST gutter drain isolation valves or containment purge operation, which may add or remove moisture from the containment atmosphere) or the containment atmosphere F18 particulate monitor (i.e., containment purge operation, which removes airborne radiation from the containment atmosphere). Those evolutions include IRWST gutter drain isolation for testing or maintenance (during which closure of valves PXS-PL-130A/B redirects potential LEAKAGE to the IRWST) and containment purge operations during which none of the RCS LEAKAGE detection instrumentation is required to be OPERABLE.

As provided by Note 1, when plant evolutions that affect the RCS LEAKAGE detection instrumentation occur, the instrumentation is not required to be OPERABLE as long as the RCS water inventory balance prescribed in SR 3.4.7.1 of LCO 3.4.7, "RCS Operational LEAKAGE," is performed once per 24 hours after 12 hours of steady state operation (stable RCS pressure, temperature, power level, pressurizer level, and reactor coolant drain tank (RCDT) and IRWST levels). The 12-hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established. The 24-hour Frequency required by Applicability Note 1 also applies during a 2-hour normalization period following the reopening of the IRWST gutter drain isolation valves and after closure of the containment purge flow path.

Containment sump level monitoring is ~~a valid method~~ required for detecting LEAKAGE in MODES 1, 2, 3, and 4.

Applicability Note 2 states that the ~~The~~ containment atmosphere F18 particulate radioactivity LEAKAGE measurement during MODE 1 is ~~valid~~ only ~~for~~ required when reactor power > 20% RTP.

~~The containment sump level change method of detecting leaks during MODES 1, 2, 3, and 4 is not valid while containment purge occurs or within 2 hours after the end of containment purge.~~

~~The containment atmosphere F18 particulate radioactivity LEAKAGE measurement during MODE 1 is not valid while containment purge occurs or within 2 hours after the end of containment purge.~~

* * *

ACTIONS

* * *

A.1 ~~and A.2~~

With one of the two required containment sump level channels inoperable, the one remaining OPERABLE channel is sufficient for RCS leakage monitoring since the containment radiation provides a method to monitor RCS leakage. However, that is not the case for the steam line leakage monitoring. The remaining OPERABLE sump level monitor is adequate for steam line leakage monitoring. ~~as long as it continues to operate properly. Continuing plant operation is expected to result in containment sump level indication increases and in periodic operation of the containment sump pump. Therefore, proper operation of the one remaining sump level sensor is verified by the operators checking the volume input to the sump (as determined by the sump level changes and discharges from the containment) to determine that it does not change significantly. A significant change is considered to be ±10 gallons per day or 33% (whichever is greater) of the volume input for the first 24 hours after this Condition is entered.~~ * * *

Restoration of two sump channels to OPERABLE status is required to regain the function in a Completion Time of 14 days after the monitor's failure. This time is acceptable, considering the frequency of SR 3.4.9.1 and ~~adequacy of the monitoring of the change in integrated sump discharge required by Required Action A.1~~ the available required channel.

B.1 and B.2

* * *

Restoration of one sump channel to OPERABLE status is required to regain the function in a Completion Time of 72 hours. This time is acceptable, considering the ~~frequency and adequacy of the RCS inventory balance required by Action A.1~~ leak detection diversity and the frequency of performing SR 3.4.7.1.

* * *

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1

SR 3.4.9.1 requires the performance of a CHANNEL CHECK of the containment atmosphere F18 particulate monitor and the required containment sump level channels. The check gives reasonable confidence that the ~~channel is~~ required instrumentation and associated channels are operating properly. * * *

* * *

SR 3.4.9.3 ~~and SR 3.4.9.4~~

This SR requires ~~These SRs require~~ the performance of a CHANNEL CALIBRATION for each of the required RCS Leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument ~~string~~ strings, including the instruments located inside containment. * * *