



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

July 13, 2021

LICENSEE: Southern Nuclear Operating Company, Inc.

FACILITY: Vogtle Electric Generating Plant, Units 1 and 2

SUBJECT: SUMMARY OF JULY 1, 2021, PUBLIC MEETING WITH SOUTHERN NUCLEAR OPERATING COMPANY, INC., REGARDING A PROPOSED LICENSE AMENDMENT REQUEST TO IMPLEMENT ALTERNATE SOURCE TERM AND TSTF-490 FOR VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 (EPID L-2021-LRM-0059)

On July 1, 2021, an Observation Public Meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Southern Nuclear Operating Company, Inc. (SNC, the licensee). The purpose of the meeting was for SNC to describe its plan to submit a license amendment request (LAR) to implement alternate source term (AST) and Technical Specification Task Force (TSTF)-490-A, "Deletion of E Bar Definition and Revision to RCS [Reactor Coolant System] Specific Activity Technical Specification [TS]," for Vogtle Electric Generating Plant (Vogtle), Units 1 and 2).

A list of attendees is provided as an Enclosure.

On June 9, 2021 (Agencywide Document and Access Management System (ADAMS) Accession No. ML21160A219), the meeting was noticed on the NRC public webpage.

The SNC presented slides contained in ADAMS Accession No. ML21172A131.

### Introduction

The NRC staff opened the meeting with introductory remarks and introduction of the attendees.

The SNC personnel discussed the following topics: (1) purpose, (2) submittal scope, (3) request exception to Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," Revision 0, July 2000 (ADAMS Accession No. ML003716792), linear heat generation rate (LHGR) limit, (4) recent industry submittals used to inform the Vogtle AST project, and (5) project schedule and key staff interactions.

### Purpose

SNC requested this pre-submittal meeting to communicate to the NRC staff that SNC intends to submit a LAR to implement AST at Vogtle, Units 1 and 2. In addition, SNC stated it will request approval of TSTF-490 with the AST LAR for Vogtle, Units 1 and 2.

### Proposed LAR

SNC stated it plans to submit to the NRC the mark-ups to TS pages and bases for the AST and TSTF-490 LAR for Vogtle, Units 1 and 2. SNC also said it plans to submit the full compliment of dose consequence analyses for the AST LAR for Vogtle, Units 1 and 2, as specified in RG 1.183 to support peak rod burn-ups **up to  $\leq$  62 gigawatt-days per metric ton uranium (GWD/MTU)**.

SNC said that it would submit the following dose analyses: (1) large break loss-of-coolant accident (LBLOCA), (2) fuel handling accident (FHA), (3) locked rotor accident (LRA), (4) control rod ejection (CRE), (5) steam generator tube rupture (SGTR), and (6) main steam-line break (MSLB).

SNC stated that the following TSs will be changed due to TSTF-490: (1) TS 1.1, "Definitions," and (2) TS 3.4.16, "RCS Specific Activity."

### Request Exception to RG 1.183, Revision 0, LHGR Limit

SNC stated that it intends to request with the AST LAR an exception to footnote 11 in RG 1.183 for **LHGR limit of 6.3 kilowatt per foot (kw/ft)**. SNC said that it intends to submit the exception request for **40-percent of the rods in an assembly** to be allowed to exceed the LHGR limit in footnote 11 in RG 1.183.

### Recent Industry Submittals Used to Inform the Vogtle AST Project

SNC stated that it used the below industry submittals to inform the Vogtle AST project.

<b>DESCRIPTION</b>	<b>ADAMS No.</b>	<b>DATE</b>
Farley AST Safety Evaluation Report (SER)	ML17271A265	December 20, 2017
Wolf Creek AST SER (Amendment 221)	ML19100A122	May 31, 2019
TSTF-490 Revision 0 Traveler	ML052630462	September 13, 2005
NRC Confirmation of Acceptability of TSTF-490 R0 Traveler	ML18256A027	October 31, 2018
D.C. Cook AST and TSTF-490 SER (Amendments 332 and 314)	ML16327A110	December 28, 2016

### Project Schedule and Key Staff Interactions

SNC said that this pre-submittal meeting is the first SNC interaction with the NRC staff regarding the AST and TSTF-490 LAR for Vogtle, Units 1 and 2. SNC stated that it plans to request another pre-submittal meeting in the future. SNC said that it plans to submit the AST and TSTF-490 LAR for Vogtle, Units 1 and 2, in the **fourth quarter of 2022**. SNC stated that it plans to request the NRC staff complete its review of the AST and TSFT-490 LAR in the **fourth quarter of 2023**, for Vogtle, Units 1 and 2.

## NRC Questions to SNC

The NRC staff read the following Footnote 11 in RG 1.183 for the convenience of the meeting attendees:

The release fractions listed here have been determined to be acceptable for use with currently approved LWR [light-water reactor] fuel with a peak burnup up to 62,000 MWD/MTU [measurement while drilling per metric ton uranium] provided that the maximum linear heat generation rate does not exceed 6.3 kw/ft peak rod average power for burnups exceeding 54 GWD/MTU. As an alternative, fission gas release calculations performed using NRC-approved methodologies may be considered on a case-by-case basis. To be acceptable, these calculations must use a projected power history that will bound the limiting projected plant-specific power history for the specific fuel load. For the BWR [boiling-water reactor] rod drop accident and the PWR [pressurized-water reactor] rod ejection accident, the gap fractions are assumed to be 10% for iodines and noble gases.

Vogtle, Units 1 and 2, have 193 fuel assemblies in a 17-inch by 17-inch (17"x17") array, and there are 264 fuel rods per assembly. The overall length of the fuel assembly is approximately 14 feet. So, 40-percent of the 264 fuel rods per assembly is approximately 105 fuel rods per assembly.

The NRC staff questioned what is the LHGR kw/ft limit that SNC will request in the proposed LAR? SNC stated that the Vogtle, Units 1 and 2, LHGR kw/ft limit will be 7.5 kw/ft. SNC stated that other licensees have requested higher than 7.5 kw/ft. The NRC staff asked for SNC to provide the ADAMS Accession Nos. for those precedents.

The NRC questioned why is SNC going to request 40-percent of the rods in an assembly be allowed to exceed the LHGR limit in footnote 11 in RG 1.183 as opposed to 10-percent of the rods like other licensees?

On July 19, 2016 (ADAMS Accession No. ML16159A336), the NRC staff issued amendments to Catawba, McGuire, and Oconee regarding the use of an alternate fission gas gap release fraction. The amendments stated:

Specifically, the licensee's request would increase the Table 3 non-LOCA gap fractions to allow LHGRs up to 7.0 kW/ft for rod burnup between 54 and 60 GWD/MTU and 6.9 kW/ft for rod burnup between 60 and 62 GWD/MTU. The licensee's request limited the use of higher LHGRs to no more than 25 fuel rods per fuel assembly.

SNC stated that other licensees have requested up to 50-percent of the rods in an assembly be allowed to exceed the LHGR limit in footnote 11 in RG 1.183. The NRC staff asked for SNC to provide the ADAMS Accession Nos. for those precedents.

The NRC staff stated that an AST LAR is a substantial effort, especially when it will be coupled with a TSTF-490 LAR. The NRC stated the effort undertaken by the NRC staff to complete previous AST LARs and TSTF-490 LARs.

PLANT	ACTION	ADAMS No.	Date	~HOURS	DURATION (MONTHS)
Farley	AST, TSTF-312, TSTF-448	ML17271A265	12/20/17	884	13
Wolf Creek	AST	ML19100A122	5/31/19	3596	28
-----	TSTF-490 Revision 0 Traveler	ML052630462	9/13/05	-----	--
-----	NRC Confirmation of Acceptability of TSTF-490 R0 Traveler	ML18256A027	10/31/18	-----	--
D.C. Cook	Correction Letter - AST and TSTF-490	ML16327A110	12/28/16	-----	-----
D.C. Cook 1 & 2	AST	ML16242A111	10/24/16	2383	22
Summer	AST	ML102160020	10/4/10	1006	20
Point Beach 1 & 2	AST	ML110240054	4/14/11	3118	28
ANO Unit 1	AST	ML092740035	10/21/09	1029	24
LaSalle 1 & 2	AST	ML101750625	9/6/10	2056	23
Catawba, McGuire, & Oconee	Alternate Fission Gas Gap Release Fraction	ML16159A336	7/19/2016	486	12
Watts Bar	TSTF-490	ML21099A246	5/14/21	140	9
South Texas	TSTF-490	ML20253A046	9/29/20	193	12
Calvert Cliffs	TSTF-490	ML19337D035	2/28/20	93	9
Ginna	TSTF-490	ML16358A424	2/9/17	301	12
Palo Verde 1, 2, & 3	TSTF-490	ML13294A576	11/25/13	82	11
Catawba, McGuire, & Oconee	TSTF-490	ML120760079	6/25/12	113	30
North Anna 1 & 2	TSTF-490	ML093500400	3/3/10	325	15
Byron & Braidwood	TSTF-490	ML100690386	3/23/10	265	15
TMI	TSTF-490	ML100320493	3/11/10	300	15

The NRC staff questioned whether the AST LAR would impact operator actions, meteorological data, environmental qualification (EQ) of equipment, and mechanical structures as well as heating, ventilation, and air-conditioning (HVAC) to the central control room (CCR). SNC stated that information regarding any potential impacts on operator actions from the LAR would be discussed in their submittal. SNC stated that the AST LAR would not adversely impact meteorological data, EQ of equipment, and mechanical structures as well as HVAC to the CCR.

In order to perform an efficient AST review, the NRC staff stated that it needs the type of information provided in the Enclosures of the SNC letter dated November 22, 2016 (ADAMS Accession No. ML16336A024), for the Farley AST LAR.

Public Questions to NRC

There were no questions from the public. There were no members of the public in attendance.

Closing

The NRC staff made no regulatory decisions during the meeting.

Once received, the NRC staff will perform a thorough review of the proposed LAR and make any regulatory decisions in writing in a timely manner.

Public Meeting Feedback forms were available, but no comments were received.

The meeting adjourned at 3:34 pm (Eastern time).

Please direct any inquiries to me at 301-415-3100.

***/RA/***

John G. Lamb, Senior Project Manager  
Plant Licensing Branch, II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosure: List of Attendees

cc: Distribution via Listserv

LIST OF ATTENDEES  
JULY 1, 2021, PUBLIC MEETING WITH SOUTHERN NUCLEAR COMPANY  
REGARDING A PROPOSED LICENSE AMENDMENT REQUEST  
VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

<u>ATTENDEE</u>	<u>REPRESENTING</u>
John G. Lamb	U.S. Nuclear Regulatory Commission (NRC)
Mike Markley	NRC
Steve Jones	NRC
Chakrapani Basavaju	NRC
Jorge Cinton-Rivera	NRC
Samantha Platt	NRC
Joshua Miller	NRC
Justin Vazquez	NRC
Barbara Hayes	NRC
Charley Peabody	NRC
Diana Woodyatt	NRC
Kevin Quinlan	NRC
Sean Meighan	NRC
John Parillo	NRC
Ravi Grover	NRC
Ken Lowery	Southern Nuclear Operating Company (SNC)
Jamie Coleman	SNC
Jason Douglass	SNC
William Evans	SNC
Tom Kindred	SNC
Butch Bornt	SNC
Matt Leonard	SNC
Sean Kinnas	Westinghouse
Kent Bonadio	Westinghouse

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DISTRIBUTION:

PUBLIC	RidsNrrPMVogtle Resource	MMarkley, NRR
Branch Reading	RidsNrrLAKGoldstein Resource	CSafouri, Region 2
RidsAcrsAcnw_MailCTR	RidsOgcRp Resource	SJones, NRR
Resource	RidsRgn2MailCenter Resource	
RidsNrrDorLpl2-1 Resource	JMiller, NRR	

**ADAMS Accession Nos.:**

**Package, ML21165A276**

**Meeting Notice, ML21160A219**

**Slides, ML21172A131**

**Meeting Summary, ML21183A151**

OFFICE	DORL/LPL2-1/PM	DORL/LPL2-1/LA	DSS/SNSB/BC	DORL/LPL2-1/BC	DORL/LPL2-1/PM
NAME	JLamb	KGoldstein	SKrepel	MMarkley (JKlos for)	JLamb
DATE	07/02/2021	07/08/2021	07/06/2021	07/13/2021	07/13/2021

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